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BSCHNITT 1. Bezeichnung d	es Stoffs bzw. des Gemischs und des Unternehmens
1.1. Produktidentifikator	
Chemischer Name	: Terpentin .
Art der Produktes	: UVCB-Substanz .
Reach Registrierungnummer	: 01-2119553060-53
1.2. Relevante identifizierte Verwe	endungen des Stoffs oder Gemischs und Verwendungen von denen
abgeraten wird	
Identifizierte(n) Verwendung(en)	: Siehe Tabelle auf der ersten Seite des Anhangs.
Verwendung(en) von denen abgeraten wird	 Dieses Produkt ist nicht für irgendeiner anderen industriellen, gewerblichen Verwendung oder Verwendung durch den Verbraucher als in der Tabelle auf de ersten Seite des Anhangs empfohlen. Nicht für die Verwendung in Dekorationsgegenständen, in Scherzspielen und in Spielen (gemäß Anhang XVII der Verordnung (EG) Nr. 1907/2006) (3. Flüssige Stoffe und Zubereitungen, welche die Kriterien für eine der folgenden in Anhang der Verordnung (EG) Nr. 1272/20083 aufgeführten Gefahrenklassen oder - kategorien erfüllen: (a) Gefahrenklassen 2.1-2.4, 2.6, 2.7, 2.8 Typen A und B, 2.9 2.10, 2.12, 2.13 Kategorien 1 und 2, 2.14 Kategorien 1 und 2, 2.15 Typen A-F, (k Gefahrenklassen 3.1 - 3.6, 3.7 infolge Beeinträchtigung der Sexualfunktion und Fruchtbarkeit sowie der Entwicklung, 3.8 ausgenommen narkotisierende Wirkungen, 3.9 und 3.10, (c) Gefahrenklasse 4.1, (d) Gefahrenklasse 5.1). Nicht für die Verwendung in Aerosolpackungen für Unterhaltungs- und Dekorationszwecke (gemäß Anhang XVII der Verordnung (EG) Nr. 1907/2006) (c Stoffe, die als entzündbare Gase der Kategorien 1 oder 2, als entzündbare Flüssigkeiten der Kategorien 1, 2 oder 3, als entzündbare Feststoffe der Kategori 1 oder 2, als Stoffe und Gemische, die in Berührung mit Wasser entzündbare Ga entwickeln, der Kategorien 1, 2 oder 3, als pyrophore Flüssigkeiten der Kategorie oder als pyrophore Feststoffe der Kategorie 1 eingestuft wurden, und zwar unabhängig davon, ob sie in Anhang VI Teil 3 dieser Verordnung aufgeführt sind
1.3. Einzelheiten zum Lieferanten	<u>, der das Sicherheitsdatenblatt bereitstellt</u>
Firmenidentifizierung	: BRENNTAG N.V Nijverheidslaan 38 - BE-8540 DEERLIJK TEL: +32(0)56/77.69.44 - FAX: +32(0)56/77/57/11 E-MAIL: info@brenntag.be - Website: www.brenntag.be
	BRENNTAG Nederland B.V Donker Duyvisweg 44 - NL-3316 BM DORDRECH TEL: +31(0)78/65.44.944 - FAX: +31(0)78/65.44.919 E-MAIL: info@brenntag.nl - Website: www.brenntag.nl
<u>1.4. Notrufnummer</u>	
Notrufnummer	: Belgien : Antigifzentrum - Brüssel TEL: +32(0)70/245.245
	Die Niederlande : National Vergiftungen Information Zentrum - Bilthoven TEL: +31(0)30/274.88.88 (Ausschließlich zum Zwecke der Unterrichtung medizinisches Personal bei akuten Intoxikationen)

ABSCHNITT 2. Mögliche Gefahren

2.1. Einstufung des Stoffs oder Gemischs

Einstufung gemäß der Verordnung (EG) Nr. 1272/2008

Entzündbare Flüssigkeiten - Kategorie 3 - Achtung (Flam. Liq. 3; H226) Akute Toxizität, oral - Kategorie 4 - Achtung (Acute Tox. 4, oral; H302) Aspirationsgefahr - Kategorie 1 - Gefahr (Asp. Tox. 1; H304) Akute Toxizität, dermal - Kategorie 4 - Achtung (Acute Tox. 4, dermal; H312) Reizung der Haut - Kategorie 2 - Achtung (Skin Irrit. 2; H315) Sensibilisierung der Haut - Kategorie 1 - Achtung (Skin Sens. 1; H317)



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ABSCHNITT 2. Mögliche Gefahren (Fortsetzung)

Augenreizung - Kategorie 2 - Achtung (Eye Irrit. 2; H319)

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Akute Toxizität, inhalativ - Kategorie 4 - Achtung (Acute Tox. 4, inhalation; H332) Gewässergefährdend - chronisch gewässergefährdend - Kategorie 2 (Aquatic Chronic 2; H411) 2.2. Kennzeichnungselemente Kennzeichnung gemäß der Verordnung (EG) Nr. 1272/2008 · Gefährliches Bestandteil(en) : Terpentin Gefahren Piktogramm(e) Signalwort : Gefahr Gefahrenhinweise : H226 - Flüssigkeit und Dampf entzündbar. H302 - Gesundheitsschädlich bei Verschlucken. H304 - Kann bei Verschlucken und Eindringen in die Atemwege tödlich sein. H312 - Gesundheitsschädlich bei Hautkontakt. H315 - Verursacht Hautreizungen. H317 - Kann allergische Hautreaktionen verursachen. H319 -Verursacht schwere Augenreizung. H332 - Gesundheitsschädlich bei Einatmen. H411 - Giftig für Wasserorganismen, Langzeitwirkung. Sicherheitshinweise - Prävention : P260 - Staub/Rauch/Gas/Nebel/Dampf/Aerosol nicht einatmen. P280 -Schutzhandschuhe/Schutzkleidung/Augenschutz/Gesichtsschutz tragen. - Reaktion : P301+P310+P331 - BEI VERSCHLUCKEN: Sofort GIFTINFORMATIONSZENTRUM/Arzt/.../anrufen. KEIN Erbrechen herbeiführen. P302+P352 - BEI KONTAKT MIT DER HAUT : Mit viel Wasser und Seife waschen. P333+P313 - Bei Hautreizung oder -ausschlag: Ärztlichen Rat einholen/ärztliche Hilfe hinzuziehen. - Hinweise zur Entsorgung : P501 - Diesen Produkt und seinen Behälter der Problemabfallentsorgung zuführen. 2.3. Sonstige Gefahren Physikalishe/chemische Gefahren : Der Dampf vermischt sich gut mit Luft. Kann Peroxyde bilden. Kann elektrostatische Entladungen erzeugen. : Ein Gesundheits gefährliche Konzentration in der Luft wird beim Verdampfen von Gefahren für die Gesundheid diese Substanz bei ca. 20°C nicht oder sehr langsam erreicht; durch Sprühen viel schneller : Keine zusätzliche Gefahr. Dieses Produkt ist kein Substance oder enthält keine Gefahren für die Umwelt PBT oder vPvB (gemäß Anhang XIII). Gefahren für die Sicherheit Beim Flammpunkt oder darüber, können vorhandene Dämpfe im Freien brennen oder in geschlossenen Behältern explodieren, wenn sie mit Luft vermischt, oder mit einer Zündquelle in Berührung gebracht werden.

ABSCHNITT 3. Zusammensetzung/Angaben zu Bestandteilen

Name Komponent(en)	Gew. %	CAS nr	EINECS nr	Index nr	Reach nr	EINSTUFUNG
Terpentin :	> 99 %	8006-64-2	232-350-7	650-002-00-6	01-2119553060-53	Flam. Liq. 3; H226 Acute Tox. 4 (oral); H302 Asp. Tox. 1; H304 Acute Tox. 4 (skin); H312 Skin Irrit. 2; H315 Skin Sens. 1; H317 Eye Irrit. 2; H319 Acute Tox. 4 (inhal); H332 Aquatic Chronic 2; H411



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ABSCHNITT 3. Zusammensetzung/Angaben zu Bestandteilen (Fortsetzung)

Der vollständige Text von die (EU)H-Hinweise is im Abschnitt 16. Meldepflichtig(e) gefährlich(e) Bestandteil(e) die in UVCB- und/oder multi-constituent Substanzen enthalten sind und die Einstufungskriterien und/oder eine Expositionsgrenze erfüllen Terpentin

ABSCHNITT 4. Erste-Hilfe-Maßnahmen

	4.1. Beschreibung der Erste-Hilfe-Maßnahmen		
	Allgemein	: Beim Zweifel oder andauernden Symptomen, immer Arzt konsultieren. Bewußtlosen Menschen nichts eingeben.	
	Erste Hilfe		
	- Einatmen	 Frische Luft zuführen. Opfer zur Ruhe kommen lassen, in halb-sitzender Lage bringen. Bei unregelmässiger Atmung oder beim Atemstillstand, künstlich beatmen. Patient sofort nach Krankenhaus brengen. 	
	- Hautkontakt	: Verunreinigte Kleidung ablegen. Haut sofort gründlich mit Seife/Wasser spülen. (ev. Duschen). Ein Arzt konsultieren.	
*	- Augenkontakt	 Sofort gründlich und länger (mindestens 15 Min.) mit vielem Wasser ausspülen. Kontaktlinsen ausnehmen. Augenarzt konsultieren. Während der Transport; Augen fortwährend ausspülen oder tröpfeln. 	
*	- Verschlucken	: KEIN ERBRECHEN HERBEIFÜHREN. Der Mund spülen mit Wasser. Sofort GIFTINFORMATIONSZENTRUM oder Arzt anrufen.	

4.2. Wichtigste akute oder verzögert auftretende Symptome und Wirkungen

Siehe Abschnitt 11.

4.3. Hinweise auf ärztliche Soforthilfe und Spezialbehandlung

Für fachliche Beratung Ärzte sollten sich an die NVIC oder die belgische Antigiftzentrum.

ABSCHNITT 5. Maßnahmen zur Brandbekämpfung

5.1. Löschmittel

Löschmittel			
- Geeignete	: Löschpulver , Schaum , Kohlenstoffdioxid (CO2) , Sprühwasser .		
- Nicht geeignete	: Festen Wasserstrahl.		
5.2. Besondere vom Stoff oder G	Semisch ausgehende Gefahren		
Spezielle Expositionsgefahren	: Beim Feuer können Kohlenstoffoxiden (CO) und Rauch freikommen.		
5.3. Hinweise für die Brandbekämpfung			
Schutzende Ausrüstung	: In nächster Nähe des Feuers geschlossenes Atemschutzgerät verwenden und angemessene Schutzkleidung tragen.		
Besondere Massnahmen	: Zur K ühlung in der N ähe befindlichen Ger äts Wasserspr ühstrahl oder -nebel verwenden. Es ist zu vermeiden, da ß zur Brandl öschung verwendetes Wasser in die Umwelt gelangt.		

ABSCHNITT 6. Maßnahmen bei unbeabsichtigter Freisetzung

6.1. Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren



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BSCHNITT 6. Maßnahm	nen bei unbeabsichtigter Freisetzung (Fortsetzung)
Personenbezogene Vorsichtsmaßnahmen	 Alle mögliche Zündquelle (offenes Feuer, Funken, rauchen,) sind auszuschließen. Sofort die Personen am angesteckten Ort räumen und gut lüften. Einatmung der Dämpfe und Berührung mit Augen, Haut und Kleider vermeiden. Empfohlene Personenschutzausrüstung tragen. (Siehe Abschnitt 8)
6.2. Umweltschutzmaßnah	men
Umweltschutzmaßnahmen	 Wenn möglich Undichtheiten beseitigen. Das gekleckerte Produkt soviel wie möglich mit inertem Material eindeichen. Eindringen das Produkt in Kanalisation, öffentlichen Gewässer oder dem Boder verhindern. Falls das Produkt in die Kanalisation oder öffentliche Gewässer gelangt, sind di Behörden zu benachrichtigen.
6.3. Methoden und Materia	I für Rückhaltung nd Reinigung
Reinigungsmethode	: Die Leckflüssigkeit auffangen in abgeschlossenen Fässern. Ev. letzte Rückstände mit Seifenlösung oder Wasser weggespülen. Spülwasser auffangen.
6.4. Verweis auf andere Ab	<u>schnitte</u>
Für persönliche Schutzmittel, si Für Behandlung das Abfallprodu	
SCHNITT 7. Handhab	ung und Lagerung
7.1. Schutzsmaßnahmen z	ur sicheren Handhabung
Handhabung	: Pass auf : HAUTRESORPTION ! NEBELFORMUNG VERMEIDEN ! Einatmung der Dämpfe und Berührung mit Augen, Haut und Kleider vermeiden.

		 NEBELFORMUNG VERMEIDEN ! Einatmung der Dämpfe und Berührung mit Augen, Haut und Kleider vermeiden. Empfohlene Personenschutzausrüstung tragen. (Siehe Abschnitt 8) Bei der Arbeit nicht essen, trinken oder rauchen. Waschen Sie Ihre Hände, vorher und nachher, das Sie mit dem Produkt bearbeitet haben. Notvorrichtungen für Augenspülungen und Duschen für Erste-Hilfe- Maßnahmen bei der Behandlung von Erfrierungsverletzungen sollten dort, wo eine potentielle Exposition eintreten kann, in unmittelbarer Nähe verfügbar sein.
	7.2. Bedingungen zur sicheren La	gerung unter Berücksichtigung von Unverträglichkeiten
	Lagerung	 Nur im gut abgeschlossenen Originalbehälter an einem kühlen, gut gelüfteten und feuersicheren Ort aufbewahren. Alle gefährlichen Produkte müßten auf einen Leckbehälter gesetzt werden oder eingetonnt werden. Fernhalten von : Oxidationsmittel .
*	Feuer- und Explosionsprävention	 Alle Zündquelle (offenes Feuer, Funken, rauchen,) entfernen. Bei einer Temperatur gleich an oder höher als das Flammpunkt, kann die Mischung Luft-Produkt eine leicht entzündliche und explosive Mischung werden. Keine Druckluft verwenden zum Bewegen oder Transferieren des Inhaltes von Lagertanks/ Transportfässern der diesen Material enthalten. Besondere Vorsicht walten lassen, um statische Entladung zu vermeiden. Explosionssichere Ausrüstung benutzen. Ausreichend erden.
	Geeignetes Verpakkungsmaterial	: Beschichteter Stahl .
*	Nicht geeignetes Verpakkungsmaterial	: Gummi , Synthetische stoffen .

7.3. Spezifische Endanwendungen

Für den identifizierten Verwendungen, siehe Unterabschnitt 1.2 und/oder Expositionsszenarien.



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ABSCHNITT 8. Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstunge

8.1. Zu überwachende Parameter

*	Berufsbedingte Expositionsgrenzen DNELs	 Terpentin : Grenzwert (BE) : 20 ppm (2014) Terpentin : Arbeiter, akut - lokale Effekte, dermal : 161 µg/cm² Terpentin : Arbeiter, akut - systemische Effekte, dermal : 25 mg/kg Kg/Tag Terpentin : Arbeiter, langzeit - systemische Effekte, einatmen : 5,98 mg/m² Terpentin : Verbraucher, akut - lokale Effekte, dermal : 81 µg/cm³ Terpentin : Verbraucher, langzeit - systemische Effekte, einatmen : 1,06 mg/m² Terpentin : Verbraucher, langzeit - systemische Effekte, oral : 0,31 mg/kg Kg/Tag
	PNECs	 Terpentin : Süßwasser : 8,8 µg/l Terpentin : Salzwasser : 0,88 µg/l Terpentin : Süßwassersediment : 2,27 mg/kg Terpentin : Salzwassersediment : 0,227 mg/kg Terpentin : Boden : 0,45 mg/kg Terpentin : Wasserreinigungsinstallation : 6,6 mg/l Terpentin : Oral : 1,35 mg/kg
	8.2. Begrenzung und Überwachu	ng der Exposition
	Technische Massnahmen	: Ventilation , Lokale Absaugung .
	Persönliche Schutzmittel	
	- Atemschutz	: CE-geeignetes Atemschutzgerät für organische Dämpfe und Lösungsmitteln (type A, braun).
	- Hautschutz	: Geeignete Schutzkleidung .
*	- Handschutz	 Geeignete Materialien f ür Schutzhandschuhe (EN 374): Die arbeitsplatzspezifische Eignung sollte mit den Schutzhandschuhherstellern abgekl ärt werden. Material : Nitrilgummi Dicke : Es liegen keine Angaben vor Durchbruchszeit : Es liegen keine Angaben vor .
	- Augen-/Gesichtsschutz	: Anschliessende Sicherheitsgläser oder Gesichtsschutz.
	Begrenzung und Überwachung der Umweltexposition	: Siehe Abschnitte 6, 7, 12 und 13.

ABSCHNITT 9. Physikalische und chemische Eigenschaften

9.1. Angaben zu den grundlegenden physikalischen und chemischen Eigenschaften

	Physikalische Form (20°C)	: Flüssigkeit .
	Aussicht/Farbe	:Klar , Farblos .
	Geruch	: Harzigen Geruch .
	Geruchsschwelle	: Es liegen keine Angaben vor.
	pH-Wert	: Nicht anwendbar.
*	Schmelz-/Gefrierpunkt	: -60 °C
*	Siedepunkt/Siedestrecke (1013 hPa)	: 154 - 170 °C
*	Flammpunkt	: 34 °C
	Verdampfungsgeschwindigkeit	: Es liegen keine Angaben vor.
	Explosionsgrenzen in Luft	: 0,8 - 6,0 Vol.%
*	Dampfdruck (20°C)	: 5,2 kPa
	Dampfdichte	: 4,69
*	Relativer Dampfdichte (Luft=1)	: Es liegen keine Angaben vor.
*	Relative Dichte der gesättigten Mischung Dampf/Luft (Luft=1)	: 1,02



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ABSCHNITT 9. Physikalische und chemische Eigenschaften (Fortsetzung) Die relative Dichte (Wasser=1) : 0,9 Schüttdichte : 0,600 g/ ml Löslichkeit in Wasser : 0,03 g/ 100ml Log P Oktanol/Wasser (20°C) : 4,49 Zuendtemperatur : 270 °C Minimum Entzündungsenergie : Es liegen keine Angaben vor. Zersetzungstemperatur : Es liegen keine Angaben vor. Viskosität (25°C) : 1,5 mPas (Dynamisch) Explosive Eigenschaften : Keine chemischen Gruppen mit explosive Eigenschaften zugeordnet . Oxidationseigenschaften : Keine chemischen Gruppen mit oxidierenden Eigenschaften zugeordnet . 9.2. Sonstige Angaben Spezifishe Leitung : 22 pS/m % Flüchtige Bestandteile (in Gewicht) : > 99

ABSCHNITT 10. Stabilität und Reaktivität

	<u>10.1. Reaktivität</u>	
	Reaktivität	: Reagiert heftig mit Oxidationsmitteln.
	10.2. Chemische Stabilität	
	Stabilität	: Da sich dieses Öl beim Aufbewahren, Ozonisieren und Verharzen der Familie verschlechtert, sollte es nicht lange vor der Verwendung aufbewahrt werden.
	10.3. Möglichkeit gefährlicher Real	<u>stionen</u>
*	Gefährliche Reaktionen	: Reagiert heftig mit: . Chlor Calciumhypochlorit , Chromsäure , Zinn II chlorid , Hexachloromelamin und trichloromelamin .
	10.4. Zu vermeidenden Bedingunge	<u>en</u>
	Zu vermeidenden Zuständen	: Hochtemperatur .
	10.5. Unverträgliche Materialien	
	Nicht in Verbindung bringen mit	: Oxidationsmittel , Calciumhypochlorit , Chlor , Chromsäure , Zinn II chlorid , Hexachloromelamin und trichloromelamin .
	10.6. Gefährliche Zersetzungsprod	ukte
	Gefährliche Zersetzungsprodukte	: Kohlstoffoxide .

ABSCHNITT 11. Toxikologische Angaben

11.1. Angaben zu toxikologischen Wirkungen

Einatmen. el kann Atemnot verursachen. (Lungeödem.) ral Nervensystem einwirken. merzlicher Kehle , Hust , Atemnot , Kopfschmerzen , Schmerzhafte Brust , Benommenheit . Inhalation, 4 St) : 13,7 mg/l (Luft; OECD-Leitsatz 403)
Hautkontakt. Das Produkt wird aufgenommen durch die ung , Schmerzen . hen, Dermal) : > 2000 mg/kg (OECD-Leitsatz 402)



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ABSCHNITT 11. Toxikologische Angaben (Fortsetzung)		
- Nahrungsaufnahme	 Gesundheitsschädlich bei Verschlucken. Nach Verschlucken der Flüssigkeit, können einzige Drupfel in Lunge kommen (Aspiration), wass Lungentzündung verursachen kann. Symptome umfassen: Schmerzlicher Kehle , Hust , Bauchschmerzen , Magenschmerzen , Muskelschwachheit , Krämpfe , Benommenheit , Bewustlosigkeit . Terpentin : LD50 (Ratte, Oral) : > 500 mg/kg (OECD-Leitsatz 423) 	
Atz-/Reizwirkung auf die Haut	: Verursacht Hautreizungen. Beim andauernden und häufigen Kontakt können Überempfindliche Reaktionen entstehen. Intensiver Hautkontakt kann Überempfindliches Ekzem verursachen.	
Schwere Augenschädigung/-reizung	: Verursacht schwere Augenreizung.	
Aspirationsgefahr	: Kann bei Verschlucken und Eindringen in die Atemwege tödlich sein. Die Symptome von Lungenoedeem offenbaren sich meistens nur nach einigen Stunden und werden verstärkt durch physike Anstrengungen	
Sensibilisierung der Atemwege/Haut	: Kann allergische Hautreaktionen verursachen.	
Karzinogenität	: Nicht als karcinogen klassifiziert .	
Mutagenität	: Nicht als mutagen klassifiziert .	
Reproduktionstoxizität	: Nicht für Reproduktionstoxizität klassifiziert .	
Spezifische Zielorgan-Toxizität - einmaliger Exposition	: Beim Menschen : Nicht für Organtoxizität klassifiziert . Bei Tieren : Keine Effekten bekannt.	
Spezifische Zielorgan-Toxizität - wiederholter Exposition	: Beim Menschen : Nicht für Organtoxizität klassifiziert . Bei Tieren : Kann Schäden an Nieren und Blase hervorrufen.	

ABSCHNITT 12. Umweltbezogene Angaben

12.1. Toxizität

*	Ekotoxizität	 Terpentin : LC50 (Fisch, 96 St) : 29 mg/l (Danio rerio) (OECD-Leitsatz 203) Terpentin : CE50 (Alge, 72 St) : 17,1 mg/l (Desmodesmus subspicatus) (OECD-Leitsatz 201)
		 Terpentin : CE50 (Daphnia magna, 48 St) : 8,8 mg/l (OECD-Leitsatz 202) Terpentin : NOEC (Alge) : 10 mg/ml
	12.2. Persistenz und Abbaubarkei	<u>t</u>
	Persistenz und Abbaubarkeit	: • Terpentin : Persistenz und Abbaubarkeit : Leicht biologisch abbaubar .
	12.3. Bioakkumulationspotenzial	
	Bioakkumulation	: • Terpentin : Bioakkumulation : Bioakkumulation ist möglich.
	12.4. Mobilität im Boden	
*	Mobilität	: • Terpentin : Mobilität : Geringe Mobilität in den meisten Böden.
	12.5. Ergebnisse der PBT- und vP	vB-Beurteilung
	Ergebnisse	: • Terpentin : PBT/vPvB : Nein
	12.6. Andere schädliche Wirkunge	<u>en</u>
	Potenzial zur fotochemischen Ozonbildung	: Es liegen keine Angaben vor.
	Potenzial zum Ozonabbau	: Es liegen keine Angaben vor.
	Potenzial zur Störung der endokrinen Systeme	: Es liegen keine Angaben vor.
	Potenzial zur Erwärmung der Erdatmosphäre	: Es liegen keine Angaben vor.



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ABSCHNITT 13. Hinweise zur Entsorgung

13.1. Verfahren der Abfallbeh	andlung
Produktvernichtung	: Das Produkt muss vernichtet werden gemäss der lokale und internationale Gesetzgebung, durch ein gesetzlich erkannte und spezialisierte Firma.
Europäische Abfallstoffenliste	: XXXXXX - Europäischer Abfallproduktcode. Dieser Code wird auf der Grundlage von die gegenwärtigsten Anwendungen zugewiesen und kann nicht für Verunreinigungen repräsentativ sein, die am wirkungsvollen Gebrauch des Produktes entstanden wurden. Der Produzent der Vergeudung muß seinen Prozeß selbst auswerten und muß die passende überschüssige Kodierung bewilligen. Sehen Sie Entscheidung 2001/118/EG.
Behandlung der Verpakkung	 Die gebrauchte Verpakkung ist ausschliesslich f ür die Verpakkung dieses Produktes zu benutzen. Nach Gebrauch die Verpackung sorgf ältig ausleeren und abschliessen. Wenn es sich um Retourverpakkung h ändelt, kann die leere Verpakkung wieder am Lieferant angeboten werden.

ABSCHNITT 14. Angaben zum Transport

	<u>14.1. UN-Nummer</u>			
	UN Nr	: 1299		
	14.2. Ordnungsgemäße UN-Versar	ndbezeichnung		
*	ADR/RID-Name	: UN 1299 Terpentin, 3, III, (D/E)		
	ADN-Name	: UN 1299 Terpentin , 3, III		
	IMDG-Name	: UN 1299 Turpentine , 3, III, (34°C), MARINE POLLUTANT		
*	IATA-Name	: UN 1299 Turpentine , 3, III		
	<u>14.3. Transportgefahrenklassen</u>			
	Klasse	: 3		
	<u>14.4. Verpackungsgruppe</u>			
	Verpackungstyp	: 111		
	14.5. Umweltgefahren			
	Umweltgefährlich	: Ja		
	Meeresschadstoff	: Ja		
	14.6. Besondere Vorsichtsmaßnah	imen für den Verwender		
	Gefahrandeutung	: 30		
	Gefahrsymbol(e)	: 3		
	EmS-N°	: F-E , S-E		
	14.7. Massengutbeforderung gema	äß Anhang II des MARPOL-Übereinkommens und gemäß IBC-Code		
	Schiffstyp	: Es liegen keine Angaben vor.		
	Verschmutzungskategorie	: Es liegen keine Angaben vor.		

ABSCHNITT 15. Rechtsvorschriften

15.1. Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Stoff oder das Gemisch NFPA-N° : 1-3-0 Einschlägigen EU Vorschrift(en) : Richtlinie 96/82/EG des Rates vom 9. Dezember 1996 zur Beherrschung der Gefahren bei schweren Unfällen mit gefährlichen Stoffen Richtlinie 98/24/EG des Rates vom 7. April 1998 zum Schutz von Gesundheit u

Richtlinie 98/24/EG des Rates vom 7. April 1998 zum Schutz von Gesundheit und Sicherheit der Arbeitnehmer vor der Gefährdung durch chemische Arbeitsstoffe bei



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Code : 16978

ABSCHNITT 15. Rechtsvorschriften (Fortsetzung)

der	Arbeit
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Richtlinie 1999/13/EG des Rates vom 11. März 1999 über die Begrenzung von Emissionen flüchtiger organischer Verbindungen, die bei bestimmten Tätigkeiten und in bestimmten Anlagen bei derVerwendung organischer Lösungsmittel entstehen

Entscheidung 2001/118/EG der Kommission vom 16. Januar 2001 zur Änderung der Entscheidung 2000/532/EG über ein Abfallverzeichnis

Richtlinie 2004/42/EG des Europäischen Parlaments und des Rates vom 21. April 2004 über die Begrenzung der Emissionen flüchtiger organischer Verbindungen aufgrund der

Verwendung organischer Lösemittel in bestimmten Farben und Lacken und in Produkten der Fahrzeugreparaturlackierung sowie zur Änderung der Richtlinie 1999/13/EG

Verordnung (EG) Nr. 1272/2008 des Europäischen Parlaments und des Rates vom 16. Dezember 2008 über die Einstufung, Kennzeichnung und Verpackung von Stoffen und Gemischen, zur Änderung und Aufhebung der Richtlinien 67/548/EWG und 1999/45/EG und zur Änderung der Verordnung (EG) Nr. 1907/2006 Verordnung (EU) Nr. 453/2010 der Kommission vom 20. Mai 2010 zur Änderung der Verordnung (EG) Nr. 1907/2006 des Europäischen Parlaments und des Rates zur Registrierung, Bewertung, Zulassung und Beschränkung chemischer Stoffe (Reach)

- * Nationalen Vorschriften
 - Belgien

- Deutschland

- Niederlande

- : WGK : Es liegen keine Angaben vor.
- : Wasserbeschwerlichkeit : A
 - Sanierungsanspannung : 3

15.2. Stoffsicherheitsbeurteilung

* Eine Stoffsicherheitsbeurteilung wurde aus der Produkt durchgeführt.

ABSCHNITT 16. Sonstige Angaben

* Dieses Sicherheitsdatenblatt ist aufgestellt worden gemäss der Verordnung (EG) Nr. 1907/2006 und den Aktuellen Ausschreibungen.

Dieses Sicherheitsblatt ist ausschliesslich bestimmt für industriel/professionel Gebrauch.

* Änderung hinsichtlich voriger Revision.

*	Änderungen	: Allgemeine Revision .
*	Quelle der Daten	: Die Angaben stützen sich auf den heutigen Stand unserer Kenninnisse (Produzent(en) , Chemiekarte ,) Sehe auch auf der Adresse: http://apps.echa.europa.eu/registered/registered-sub.aspx#search
	(EU)H-Hinweis(e)	 H226 - Flüssigkeit und Dampf entzündbar. H302 - Gesundheitsschädlich bei Verschlucken. H304 - Kann bei Verschlucken und Eindringen in die Atemwege tödlich sein H312 - Gesundheitsschädlich bei Hautkontakt. H315 - Verursacht Hautreizungen. H317 - Kann allergische Hautreaktionen verursachen. H319 - Verursacht schwere Augenreizung. H332 - Gesundheitsschädlich bei Einatmen. H411 - Giftig für Wasserorganismen, Langzeitwirkung.
*	Klassifizierungsverfahren	: Flam Liq. 3; H226 - Basierend auf Versuchsdaten Acute Tox. 4, oral; H302 - Berechnungsmethode Asp. Tox. 1; H304 - Additivitätmethode



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ABSCHNITT 16. Sonstige Angaben (Fortsetzung)

 Acute Tox. 4. dermat: 1912 - Berechnungsmethode Skin Tritz. 2: H317 - Additivitämethode Eye Intz. 2: H317 - Additivitämethode Eye Intz. 2: H317 - Additivitämethode Acute Tox. 4. dermat. 1: Akute Toxizitä, roll - Kategorie 4 Acute Tox. 4. dermat. 1: Akute Toxizitä, roll - Kategorie 4 Acute Tox. 4. dermat. Akute Toxizitä, roll - Kategorie 4 Acute Tox. 4. dermat. Akute Toxizitä, infallatior. Skute Geneinkommen über die internationale Beförderung gefährlicher Güter in der Binnenschiffährt ADR (Accord européen relatif au transport international des marchandises Dangereuses par Voice (A Navigation inférieur): Europäisches Übereinkommen über die internationale Beförderung gefährlicher Güter in über die internationale Beförderung gefährlicher Güter auf der Straße Aquatic Chronic 2: Gewässergefährdend - chronisch gewässergefährdend - Kategorie 1 Colle. (Derived Mo Effici Colle. (Derived Mo Effici Colle. (Derived Mo Effici Colle. (Derived Mo Effici Ever Thick 2: Augenreizung - Kategorie 1 Colle. (Derived Mo Effici Ever Int. 2: Augenreizung - Kategorie 3 IATA (International Air Transport Association) Ubereinkommen über die internationale Beförderung gefährlicher Güter in Luttwerkehr MDG (International Air Transport Association) Ubereinkommen über die internationale Beförderung gefährlicher Güter in Luttwerkehr MDG (International Air Transport Association) Ubereinkommen über die internationale Beförderung gefährlicher Güter in Stessigkeiten - Kategorie 3 IATA (International Air Transport Association) Ubereinkommen über die internationale Beförderung gefährlicher Güter in Stessigkeiten - Kategorie 3 IATA (International Air Transport Association) Ubereinkommen über die international Beförderun			
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SZW-Liste : Nicht-einschräkende Liste gifter Reproduktionssubstanzen auf die			SZW-Liste : Liste krebserzeugender Substanzen und Vorgänge als Zielen in Artikel



Blatt : 11 / 11

Überarbeitet : 6/9/2018

Revision nr : 4 Ersetzt : 18/10/2012

TERPENTIN

Code : 16978

ABSCHNITT 16. Sonstige Angaben (Fortsetzung)

zweter Absatz des Erlass über Arbeitsbedingungen GGM (Gewichteter Gleitender Mittelwert) : die durchschnittliche Exposition über einen bestimmten Zeitraum UVCB (substance of Unknown or Variable composition, Complex reaction product or Biological material) : Stoffe mit unbekannter oder variabler Zusammensetzung, komplexe Reaktionsprodukt oder biologisches Material WGK (Wassergefahrdungsklasse) vPvB : sehr persistent und sehr bioakkumulierbar

Diese Information ist unseres Wissens korrekt und vollständig am Daten der Ausgabe des Sicherheitsdatenblatts. Diese Information betrifft nur dieses Produkt und gibt keine Garantie auf der Qualität und vollständigkeit der Eigenschaften des Produkts, oder falls das Produkt zusammen mit anderen Produkten oder im einzigen anderen Prozess gebraucht wird.

Es bleibt die Verantwortlichkeit des Benutzers sich zu sichern dass diese Information anwendbar und vollständig ist, bezuglich seinen Spezialgebrauch des Produkts.

BRENNTAG übernimmt keine Verantwortung und lehnt Haftung für Verlust oder Schaden ab, die aus dem Gebrauch des Produkts entstehen könnten.

Ende des Dokumentes



SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

Turpentine

Version 2.0

Print Date 06.11.2018

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Manufacture of substance Use as an intermediate Distribution of substance Formulation & (re)packing of substances and mixtures Formulation of	3 3 3 3	NA 8, 9 NA	NA NA NA	1, 2, 3, 4, 8b, 15 1, 2, 3, 4, 8b, 15 1, 3, 4, 5,	1 6a	NA NA	ES12578
Distribution of substance Formulation & (re)packing of substances and mixtures	3	NA		8b, 15 1, 3, 4, 5,	6a	NA	E010500
substance Formulation & (re)packing of substances and mixtures			NA				ES12592
(re)packing of substances and mixtures	3	NIA		8a, 8b, 9, 15	2	NA	ES12612
Formulation of		NA	NA	1, 2, 3, 4, 5, 8b, 15	2	NA	ES12604
coatings and adhesives	3	10	NA	1, 2, 3, 4, 5, 8a, 8b, 9, 15	2	NA	ES12718
Use in coatings	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 10, 13, 15	4	NA	ES12722
Use in coatings	22	NA	NA	1, 2, 3, 4, 5, 8a, 8b, 10, 11, 13, 15, 19	8a, 8d	NA	ES12859
Formulation of adhesives and sealants	3	10	NA	1, 2, 3, 4, 5, 8b, 9, 14, 15	2	NA	ES12884
Use in adhesives and sealants	3	NA	NA	1, 2, 3, 4, 5, 7, 8b, 10, 13, 15	5	NA	ES12886
Use in adhesives and sealants	22	NA	NA	1, 2, 3, 4, 5, 8a, 8b, 10, 11, 13, 15	8c, 8f	NA	ES12890
Use in coatings	21	NA	9a, 9b, 9c, 18	NA	8a, 8d	NA	ES12898
Use in adhesives and sealants	21	NA	1	NA	8c, 8f	NA	ES12934
Formulation of solvents	3	10	NA	1, 2, 3, 4, 5, 8a, 8b, 9, 14, 15	2	NA	ES12869
Use as a solvent	3	NA	NA	1, 2, 3, 4, 5, 7, 8b, 10, 13, 15	4, 7	NA	ES12871
Use as a solvent	22	NA	NA	1, 2, 3, 4, 5, 8a, 8b, 10, 11, 13, 15	8a, 8d, 9a, 9b	NA	ES12880
	Use in coatings Formulation of adhesives and sealants Use in adhesives and sealants Use in adhesives and sealants Use in coatings Use in adhesives and sealants Formulation of solvents Use as a solvent	Use in coatings22Formulation of adhesives and sealants3Use in adhesives and sealants3Use in adhesives and sealants22Use in adhesives and sealants21Use in coatings21Use in adhesives and sealants21Use in adhesives and sealants3Use in adhesives and sealants3Use in adhesives and sealants21Use in adhesives and sealants3Use as a solvent3Use as a solvent22	Use in coatings22NAFormulation of adhesives and sealants310Use in adhesives and sealants3NAUse in adhesives and sealants22NAUse in adhesives and sealants21NAUse in coatings21NAUse in adhesives and sealants21NAUse in coatings21NAUse in adhesives and sealants21NAUse in adhesives and sealants21NAUse in adhesives and sealants310Use in adhesives and sealants3NAUse in adhesives and sealants21NAUse as a solvent3NAUse as a solvent22NA	Use in coatings22NANAFormulation of adhesives and sealants310NAUse in adhesives and sealants3NANAUse in adhesives and sealants22NANAUse in adhesives and sealants22NANAUse in coatings21NA9a, 9b, 9c, 18Use in coatings21NA1Formulation of solvents310NAUse as a solvent3NANAUse as a solvent22NANA	Use in coatings 3 NA NA S, 7, 8a, 8b, 10, 13, 15 Use in coatings 22 NA NA NA 1, 2, 3, 4, 5, 8a, 8b, 10, 11, 13, 15, 19 Formulation of adhesives and sealants 3 10 NA 1, 2, 3, 4, 5, 8b, 9, 14, 15 Use in adhesives and sealants 3 NA NA NA 5, 8b, 9, 14, 15 Use in adhesives and sealants 3 NA NA NA 1, 2, 3, 4, 5, 8b, 9, 14, 15 Use in adhesives and sealants 22 NA NA NA 5, 8a, 8b, 10, 11, 13, 15 Use in coatings 21 NA 9a, 9b, 9c, 18 NA NA Use in coatings 21 NA 1 NA Formulation of solvents 3 10 NA 5, 7, 8b, 10, 13, 15 Use as a solvent 3 NA NA 1, 2, 3, 4, 5, 7, 8b, 10, 13, 15 Use as a solvent 22 NA NA 1, 2, 3, 4, 5, 7, 8b, 10, 11, 13, 15	Use in coatings 3 NA NA S, 7, 8a, 8b, 10, 13, 15 4 Use in coatings 22 NA NA NA 1, 2, 3, 4, 5, 8a, 8b, 10, 11, 13, 15, 19 8a, 8d Formulation of adhesives and sealants 3 10 NA 1, 2, 3, 4, 5, 58b, 9, 2 2 Use in adhesives and sealants 3 10 NA 1, 2, 3, 4, 5, 7, 8b, 9, 2 2 Use in adhesives and sealants 3 NA NA NA 5, 7, 8b, 9, 2 Use in adhesives and sealants 3 NA NA 1, 2, 3, 4, 5, 7, 8b, 10, 11, 13, 15 5 Use in adhesives and sealants 22 NA NA NA 5, 7, 8b, 10, 11, 13, 15 8c, 8f Use in coatings 21 NA NA 1, 2, 3, 4, 5, 8a, 8b, 10, 11, 13, 15 8c, 8f Use in adhesives and sealants 21 NA 1 NA 8c, 8f Use in coatings 21 NA 1 NA 8c, 8f Use in coatings 21 NA 1 NA 8c, 8f <	Use in coatings 3 NA NA S, 7, 8a, 8b, 10, 13, 15 4 NA Use in coatings 22 NA NA NA 5, 7, 8a, 8b, 10, 10, 11, 13, 15, 19 8a, 8d NA Formulation of adhesives and sealants 3 10 NA 1, 2, 3, 4, 5, 8b, 9, 14, 15 2 NA Use in adhesives and sealants 3 NA NA 1, 2, 3, 4, 5, 8b, 9, 14, 15 5 NA Use in adhesives and sealants 3 NA NA 5, 8a, 8b, 10, 13, 15 5 NA Use in coatings 21 NA 9a, 9b, 9c, 18 NA 8a, 8d NA Use in coatings 21 NA 1 NA 8c, 8f NA Use in coatings 21 NA 1 NA 8c, 8f NA Use in adhesives and sealants 3 10 NA 1, 2, 3, 4, 5, 8a, 8b, 9, 14, 15 2 NA Use as a solvent 3 NA NA 1, 2, 3, 4, 5, 7, 8b, 10, 13, 15 4, 7 NA Use as a solve



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16	Use as a solvent	21	NA	15	NA	8a, 8d, 9a, 9b	NA	ES12930
17	Use as a chemical stripper	3	NA	NA	8a, 8b, 21, 24	4	NA	ES12865
18	Use as a chemical stripper	22	NA	NA	8a, 8b, 21, 24	8a, 8d	NA	ES12867
19	Use as a chemical stripper	21	NA	9a	NA	8a, 8d	NA	ES12921
20	Use in the compounding of fragrances	3	10	NA	1, 3, 5, 8a, 8b, 9, 15	2	NA	ES12624
21	Formulation of fragrances	3	10	NA	1, 2, 3, 5, 8a, 8b, 9, 13, 14, 15	2	NA	ES12627
22	Use of fragrances	3	NA	NA	1, 2, 4, 5, 7, 8a, 8b, 10, 15, 19	4	NA	ES12676
23	Use of fragrances	22	NA	NA	1, 2, 4, 5, 8a, 8b, 10, 11, 15, 19	8a, 8d, 10b, 11b	NA	ES12714
24	Use of fragrances	21	NA	1, 3, 8, 9a, 9b, 9c, 13, 18, 28, 31, 34, 35, 39	NA	8a, 8d, 10b, 11b	0, 31, 34, 35	ES12896



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1. Short title of Exposure Scenario 1: Manufacture of substance

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industives			
Process categories	 PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC15: Use as laboratory reagent 			
Environmental Release Categories	ERC1: Manufacture of substances			
Activity	Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.			

2.1 Contributing scenario controlling environmental exposure for: ERC1

Substance is complex UVCB, Non-hydrophobic. , Readily biodegradable.

	Amounts used in the EU (tonnes/year)	5500
	Fraction of EU tonnage used in region:	1
Amount used	Regional use tonnage (tons/year):	5500
	Fraction of regional tonnage used locally:	1
	Maximum daily site tonnage (kg/day):	15068
	Annual site tonnage	5500
- · · · · ·	Flow rate of receiving surface water	18.000 m3/d
Environment factors not influenced by risk management	Dilution Factor (River)	10
Innuenceu by hisk management	Dilution Factor (Coastal Areas)	100
Other given operational	Continuous release	
conditions affecting environmental exposure	Number of emission days per year	365
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	Emission or Release Factor: Air	0,05			
	initial release prior to RMM	, .			
	Emission or Release Factor: Water 0,06				
	initial release prior to RMM	· · ·			
	Emission or Release Factor: Soil	0,0001			
	initial release prior to RMM, .				
	Emission or Release Factor: Air	0,05			
	based on initial default valu	ues with subsequent RMM, .			
	Emission or Release Factor: Water	4,8 .10-6			
	based on initial default valu	ues with subsequent RMM, .			
	Emission or Release Factor: Soil	1,0 .10-6			
	based on initial default values with subsequent RMM, .				
	Indoor use Process with efficient use of raw materials. Volatile compounds subject to air emission controls. Application of the STP sludge on agricultural soil				
Technical conditions and measures at process level to prevent release Technical onsite conditions and	Prevent environmental discharge consistent with regulatory requirements. Common practices vary across sites thus conservative process release estimates used.				
measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site					
	Type of Sewage Treatment Plant	Municipal sewage treatment plant			
	Flow rate of sewage treatment plant effluent	2.000 m3/d			
	Degradation efficiency	96,2 %			
Conditions and measures related to sewage treatment plant	Percentage removed from waste water	96,2 %			
io sewaye irealinent plant	Type of Sewage Treatment Plant	Biological treatment (Water ERC1)			
	Degradation efficiency	76 % (Water ERC1)			
	Type of Sewage Treatment Plant	Biological treatment (Water, Sludge Treatment ERC1)			
	Degradation efficiency	60 % (Water, Sludge Treatment ERC1)			
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	Sludge Treatment	Sludge treatment e.g. thermal sludge reduction (Water, Sludge Treatment ERC1)				
	Waste treatment	Hazardous waste incineration (Air, Water ERC1)				
Conditions and measures related	Disposal methods	(Efficiency: > 90 %) (Air, Water ERC1)				
to external treatment of waste for disposal	Waste treatment	Hazardous waste incineration (Soil ERC1)				
	Disposal methods	(Efficiency: > 99 %) (Soil ERC1)				
Conditions and measures related	Recovery Methods	External treatment and disposal of waste should comply with applicable local and/or national regulations.				
to external recovery of waste	Recovery Methods	External recovery and recycling of waste should comply with applicable local and/or national regulations.				
2.2 Contributing scenario co PROC8b, PROC15	ntrolling worker exposu	re for: PROC1, PROC2, PROC3, PROC4,				
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.				
Product characteristics	Physical Form (at time of use)	liquid				
	Vapour pressure	0,5 - 10 kPa				
Frequency and duration of use	Covers daily exposures up to 8 hours					
Human factors not influenced by	Assumes activities are at ambient temperature.					
risk management	Assumes a good basic star	ndard of occupational hygiene is implemented.				
	General exposures (closed systems)	Handle substance within a closed system. Store substance within a closed system.(PROC1)				
	Batch process Continuous process With sample collection	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Ensure containment of the emission source Avoid carrying out operation for more than 15 minutes.(PROC2, PROC3)				
Technical conditions and measures to control dispersion						
measures to control dispersion	Batch process With sample collection	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 15 minutes.(PROC4)				
		less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 15				
measures to control dispersion	With sample collection	less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 15 minutes.(PROC4) Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 15				
measures to control dispersion	With sample collection Bulk transfers	less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 15 minutes.(PROC4) Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 15 minutes.(PROC8b) Provide a good standard of general ventilation (not				



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	Equipment cleaning and maintenance	Drain down system prior to equipment break-in or maintenance. Limit the substance content in the product to 5 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 15 minutes.(PROC8b)
	Disposal of wastes Equipment cleaning and maintenance	Limit the substance content in the product to 1 %. Drain down system prior to equipment break-in or maintenance. Avoid carrying out operation for more than 15 minutes. Ensure operation is undertaken outdoors.(PROC8b)
	Disposal of wastes	Limit the substance content in the product to 1 %. Ensure operation is undertaken outdoors.(PROC3, PROC4)
	Laboratory activities	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 1 hour.(PROC15)
	Batch process With sample collection	Wear protective gloves. Use suitable eye protection.(PROC4)
	Bulk transfers	Use suitable eye protection.(PROC8b)
Conditions and measures related to personal protection, hygiene and health evaluation	Product sampling	Avoid carrying out operation for more than 15 minutes. Use suitable eye protection. Wear chemically resistant gloves.(PROC8b)
	Drum and small package filling Semi-bulk packaging	Wear chemically resistant gloves. Use suitable eye protection.

3. Exposure estimation and reference to its source

Environment

ERC1: Environmental exposure estimation is based on Ecetoc TRA model v2.

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC1			Msafe	210241kg/day	

Workers

Worker exposure has been evaluated using ECETOC TRA V2.0. Advanced REACH Tool (ART model).

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

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Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-forindustries-libraries.html).

Health

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES



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1. Short title of Exposure Scenario 2: Use as an intermediate

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industria sites	
Sectors of end-use	nd-use SU8: Manufacture of bulk, large scale chemicals (including petroleum products) SU9: Manufacture of fine chemicals	
Process categories	PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC15: Use as laboratory reagent	
Environmental Release Categories	ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)	
Activity	Chemical synthesis.	

2.1 Contributing scenario controlling environmental exposure for: ERC6a

Substance is complex UVCB, Non-hydrophobic. , Readily biodegradable.

	Amounts used in the EU (tonnes/year)	5200
	Fraction of EU tonnage used in region:	1
Amount used	Regional use tonnage (tons/year):	5200
	Fraction of regional tonnage used locally:	1
	Maximum daily site tonnage (kg/day):	14247
	Annual site tonnage	5200
-	Flow rate of receiving surface water	18.000 m3/d
Environment factors not influenced by risk management	Dilution Factor (River)	10
Innuenceu by hak management	Dilution Factor (Coastal Areas)	100
Other given operational	Continuous release	
conditions affecting environmental exposure	Number of emission days per year	365
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	Emission or Release Factor: Air	0,05	
	initial release prior to RMM	,.	
	Emission or Release Factor: Water	0,02	
	initial release prior to RMM	, .	
	Emission or Release Factor: Soil	0,001	
	initial release prior to RMM, .		
	Emission or Release Factor: Air	0,05	
	based on initial default valu	ues with subsequent RMM, .	
	Emission or Release Factor: Water	1,92 .10-5	
	based on initial default valu	ues with subsequent RMM, .	
	Emission or Release Factor: Soil	1,0 .10-5	
	based on initial default values with subsequent RMM, .		
	Indoor use		
Technical conditions and measures at process level to prevent release	Prevent environmental discharge consistent with regulatory requirements. Common practices vary across sites thus conservative process release estimates used.		
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site			
	Type of Sewage Treatment Plant	Municipal sewage treatment plant	
	Flow rate of sewage treatment plant effluent	2.000 m3/d	
	Degradation efficiency	96,2 %	
Conditions and massures related	Percentage removed from waste water	96,2 %	
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Biological treatment	
	Degradation efficiency	76 %	
	Type of Sewage Treatment Plant	Biological treatment (Sludge Treatment ERC6a)	
	Degradation efficiency	60 % (Sludge Treatment ERC6a)	
	Sludge Treatment	Sludge treatment e.g. thermal sludge reduction (Sludge Treatment ERC6a)	
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	Waste treatment	Hazardous waste incineration (ERC6a)	
Conditions and measures related to external treatment of waste for	Disposal methods	(Efficiency: > 90 %) (ERC6a)	
disposal	Waste treatment	Hazardous waste incineration (ERC6a)	
•	Disposal methods	(Efficiency: > 99 %) (ERC6a)	
Conditions and measures related	Recovery Methods	External treatment and disposal of waste should comply with applicable local and/or national regulations.	
to external recovery of waste	Recovery Methods	External recovery and recycling of waste should comply with applicable local and/or national regulations.	
2.2 Contributing scenario co PROC8b, PROC15	ntrolling worker exposu	re for: PROC1, PROC2, PROC3, PROC4,	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	0,5 - 10 kPa	
Frequency and duration of use	Covers daily exposures up	to 8 hours	
Human factors not influenced by	Assumes activities are at ambient temperature.		
risk management	Assumes a good basic star	ndard of occupational hygiene is implemented.	
	General exposures (closed systems)	Handle substance within a closed system. Store substance within a closed system.(PROC1)	
	Batch process Continuous process With sample collection	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Ensure containment of the emission source Avoid carrying out operation for more than 15 minutes.(PROC2, PROC3)	
Technical conditions and	Batch process With sample collection	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 15 minutes.(PROC4)	
measures to control dispersion from source towards the worker	Bulk transfers	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 15 minutes.(PROC8b)	
	Product sampling	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC8b)	
	Equipment cleaning and maintenance	Drain down system prior to equipment break-in or maintenance. Limit the substance content in the product to 5 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 15	
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		minutes.(PROC8b)
	Disposal of wastes Equipment cleaning and maintenance	Limit the substance content in the product to 1 %. Drain down system prior to equipment break-in or maintenance. Avoid carrying out operation for more than 15 minutes. Ensure operation is undertaken outdoors.(PROC8b)
	Disposal of wastes	Limit the substance content in the product to 1 %. Ensure operation is undertaken outdoors.(PROC3, PROC4)
	Laboratory activities	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 1 hour.(PROC15)
	Batch process With sample collection	Wear protective gloves. Use suitable eye protection.(PROC4)
Conditions and measures related	Bulk transfers	Use suitable eye protection.(PROC8b)
to personal protection, hygiene and health evaluation	Product sampling	Avoid carrying out operation for more than 15 minutes. Use suitable eye protection. Wear chemically resistant gloves.(PROC8b)

3. Exposure estimation and reference to its source

Environment

ERC6a: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC6a			Msafe	88569kg/day	
ERC6a		Fresh water	exposure estimate	0,000606mg/L	0,0688
ERC6a		Fresh water sediment	exposure estimate	0,156mg/kg dry weight (d.w.)	0,0689
ERC6a		Marine water	exposure estimate	0,0000593mg/ L	0,0673
ERC6a		Marine sediment	exposure estimate	0,0153mg/kg dry weight (d.w.)	0,0674
ERC6a		Sewage treatment plant (STP)	exposure estimate	0,00523mg/L	0,000792
ERC6a		Indirect exposure to humans via the environment	exposure estimate		0,000708



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ERC6a	 Agricultural soil	exposure estimate	0,0294mg/kg dry weight (d.w.)	0,161
ERC6a	 Air	exposure estimate	0,198mg/m ³	

Workers

PROC2, PROC3, PROC4, PROC8b, PROC15: Advanced REACH Tool (ART model) (inhalative exposure) PROC1, PROC2, PROC3, PROC4, PROC8b, PROC15: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Worker - inhalative, long- term - systemic	0,01ppm	0,0947
PROC1, PROC3		Worker - dermal, short- term - local	0,0250mg/cm2	0,0215
PROC2, PROC3		Worker - inhalative, long- term	4,20ppm	0,702
PROC2		Worker - dermal, short- term - local	0,0999mg/cm2	0,0861
PROC4		Worker - inhalative, long- term	4,90ppm	0,819
PROC4		Worker - dermal, short- term - local	0,50mg/cm2	0,431
PROC8b		Worker - inhalative, long- term	0,7ppm	0,663
PROC8b		Worker - dermal, short- term - local	0,0999mg/cm2	0,621
PROC15		Worker - inhalative, long- term	2,80ppm	0,468
PROC15		Worker - dermal, short- term - local	0,025mg/cm2	0,155

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-forindustries-libraries.html).

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Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES



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1. Short title of Exposure Scenario 3: Distribution of substance

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15: Use as laboratory reagent
Environmental Release Categories	ERC2: Formulation of preparations
Activity	Transport and Distribution

2.1 Contributing scenario controlling environmental exposure for: ERC2

Substance is complex UVCB, Non-hydrophobic.

, Readily biodegradable.

	Amounts used in the EU (tonnes/year)	800
	Fraction of EU tonnage used in region:	1
Amount used	Regional use tonnage (tons/year):	800
	Fraction of regional tonnage used locally:	1
	Maximum daily site tonnage (kg/day):	2192
	Annual site tonnage	800
	Flow rate of receiving surface water	18.000 m3/d
Environment factors not influenced by risk management	Dilution Factor (River)	10
initiacheed by hok management	Dilution Factor (Coastal Areas)	100
Other given operational	Continuous release	
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conditions affecting environmental exposure	Number of emission days per year	365	
	Emission or Release Factor: Air	0,025	
	initial release prior to RMM	, ·	
	Emission or Release Factor: Water	0,02	
	initial release prior to RMM	,	
	Emission or Release Factor: Soil	0,0001	
	initial release prior to RMM	,	
	Emission or Release Factor: Air	0,025	
	based on initial default valu	ies with subsequent RMM, .	
	Emission or Release Factor: Water	1,92 .10-5	
	based on initial default valu	ies with subsequent RMM, .	
	Emission or Release Factor: Soil	1,0 .10-4	
	based on initial default values with subsequent RMM, .		
	Indoor use		
Technical conditions and measures at process level to prevent release Technical onsite conditions and	Prevent environmental discharge consistent with regulatory requirements. Common practices vary across sites thus conservative process release estimates used.		
measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site			
	Type of Sewage Treatment Plant	Municipal sewage treatment plant	
	Flow rate of sewage treatment plant effluent	2.000 m3/d	
	Degradation efficiency	96,2 %	
Conditions and measures related to sewage treatment plant	Percentage removed from waste water	96,2 %	
	Type of Sewage Treatment Plant	Biological treatment	
	Degradation efficiency	76 %	
	Type of Sewage Treatment Plant	Biological treatment (Sludge Treatment ERC2)	
	Degradation efficiency	60 % (Sludge Treatment ERC2)	
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		-			
	Sludge Treatment	Sludge treatment e.g. thermal sludge reduction (Sludge Treatment ERC2)			
	Waste treatment	Hazardous waste incineration (ERC2)			
Conditions and measures related to external treatment of waste for	Disposal methods	(Efficiency: > 90 %) (ERC2)			
disposal	Waste treatment	Hazardous waste incineration (ERC2)			
	Disposal methods	(Efficiency: > 99 %) (ERC2)			
Conditions and measures related	Recovery Methods	External treatment and disposal of waste should comply with applicable local and/or national regulations.			
to external recovery of waste	Recovery Methods	External recovery and recycling of waste should comply with applicable local and/or national regulations.			
2.2 Contributing scenario co PROC8a, PROC8b, PROC		re for: PROC1, PROC3, PROC4, PROC5,			
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.			
Product characteristics	Physical Form (at time of use)	liquid			
	Vapour pressure	0,5 - 10 kPa			
Frequency and duration of use	Covers daily exposures up to 8 hours				
Human factors not influenced by	Assumes activities are at ambient temperature.				
risk management	Assumes a good basic standard of occupational hygiene is implemented.				
	General exposures (closed systems)	Handle substance within a closed system. Store substance within a closed system. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC1)			
	Disposal of wastes	Limit the substance content in the product to 1 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC3, PROC4)			
Technical conditions and measures to control dispersion from source towards the worker	Process sampling	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 15 minutes.(PROC3, PROC8b)			
	Mixing operations (open systems)	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC5)			
	Transfer from/pouring from containers	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 15 minutes.(PROC8a)			
	Bulk transfers	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).			
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		Avoid carrying out operation for more than 1 hour.(PROC8b)
	Bulk transfers Closed systems	Clear transfer lines prior to de-coupling. Ensure operation is undertaken outdoors. Avoid carrying out operation for more than 1 hour.(PROC8b)
	Bulk transfers Open systems	Ensure operation is undertaken outdoors. Avoid carrying out operation for more than 4 hours.(PROC8b)
	Equipment cleaning and maintenance	Limit the substance content in the product to 5 %. Drain down system prior to equipment break-in or maintenance. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 1 hour.(PROC8b)
	Drum/batch transfers	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 1 hour.(PROC8b)
	Disposal of wastes	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 15 minutes. Limit the substance content in the product to 1 %.(PROC8b)
	Drum and small package filling	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC9)
	Laboratory activities	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 1 hour.(PROC15)
	Process sampling	Use suitable eye protection and gloves.(PROC3, PROC8b)
	Mixing operations (open systems)	Wear chemically resistant gloves. Use suitable eye protection.(PROC5)
Conditions and measures related	Transfer from/pouring from containers	Use suitable eye protection. Wear chemically resistant gloves.(PROC8a)
to personal protection, hygiene and health evaluation	Bulk transfers	Use suitable eye protection. Wear chemically resistant gloves.(PROC8b)
	Bulk transfers Closed systems	Wear chemically resistant gloves. Use suitable eye protection.(PROC8b)
	Bulk transfers Open systems	Wear chemically resistant gloves. Use suitable eye protection.(PROC8b)
	Equipment cleaning and	Wear chemically resistant gloves.

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maintenance	Use suitable eye protection.(PROC8b)
Drum/batch transfers	Wear chemically resistant gloves. Use suitable eye protection.(PROC8b)
Drum and small package filling	Wear chemically resistant gloves. Use suitable eye protection.(PROC9)

3. Exposure estimation and reference to its source

Environment

ERC2: ECETOC TRA model v2					
Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC2			Msafe	99958kg/day	
ERC2		Fresh water	exposure estimate	0,000165mg/L	0,0188
ERC2		Fresh water sediment	exposure estimate	0,0427mg/kg dry weight (d.w.)	0,0188
ERC2		Marine water	exposure estimate	0,0000152mg/ L	0,0173
ERC2		Marine sediment	exposure estimate	0,00393mg/kg dry weight (d.w.)	0,0173
ERC2		Sewage treatment plant (STP)	exposure estimate	0,000804mg/L	0,000122
ERC2		Indirect exposure to humans via the environment	exposure estimate		0,000708
ERC2		Agricultural soil	exposure estimate	0,00325mg/kg dry weight (d.w.)	0,0219
ERC2		Air	exposure estimate	0,0153	

Workers

PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC15: Advanced REACH Tool (ART model) (inhalative exposure)

PROC1, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC15: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Worker - inhalative, long- term - systemic	0,007ppm	0,00663
PROC1, PROC3		Worker - dermal, short-	0,0250mg/cm2	0,155
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	term - local		
PROC3, PROC4	 Worker - inhalative, long- term	4,20ppm	0,702
PROC4	 Worker - dermal, short- term - local	0,05mg/cm2	0,311
PROC5, PROC9	 Worker - inhalative, long- term	2,2ppm	0,368
PROC5, PROC8a, PROC8b, PROC9	 Worker - dermal, short- term - local	0,0999ppm	0,621
PROC15, PROC8a	 Worker - inhalative, long- term	2,8ppm	0,468
PROC15	 Worker - dermal, short- term - local 0,025mg/cm2		0,155
PROC8b	 Worker - inhalative, long- term	2,0ppm	0,334

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-forindustries-libraries.html).

Health

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES



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1. Short title of Exposure	Scenario 4: Formulation &	(re)packing of substances and mixtures			
Main User Groups	SU 3: Industrial uses: Use sites	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites			
Process categories	exposure or processes with PROC2: Use in closed, co PROC3: Manufacture or fo processes with occasional containment condition PROC4: Use in batch and exposure arises PROC5: Mixing or blendin and articles (multistage and PROC8b: Transfer of subs vessels/ large containers a	PROC4: Use in batch and other process (synthesis) where opportunity for			
Environmental Release Categories	ERC2: Formulation of prep	ERC2: Formulation of preparations			
Activity	continuous operations, incl compression, pelletisation,	Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.			
2.1 Contributing scenario	o controlling environmental	exposure for: ERC2			
Substance is complex UVC , Readily biodegradable.	CB, Non-hydrophobic.				
	Amounts used in the EU (tonnes/year)	800			
	Fraction of EU tonnage used in region:	1			
Amount used	Regional use tonnage (tons/year):	800			
	Fraction of regional tonnage used locally:	1			
	Maximum daily site tonnage (kg/day):	2192			
	Annual site tonnage	800			
F	Flow rate of receiving surface water	18.000 m3/d			
Environment factors not		1			

Environment factors not Dilution Factor (River) 10 influenced by risk management **Dilution Factor (Coastal** 100 Areas) Continuous release Other given operational P8886

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conditions affecting environmental exposure	Number of emission days per year	365			
	Emission or Release Factor: Air	0,025			
	initial release prior to RMM	, ·			
	Emission or Release Factor: Water	0,02			
	initial release prior to RMM, .				
	Emission or Release Factor: Soil	0,0001			
	initial release prior to RMM, .				
	Emission or Release Factor: Air	0,025			
	based on initial default valu	es with subsequent RMM, .			
	Emission or Release Factor: Water	1,92 .10-5			
	based on initial default valu	es with subsequent RMM, .			
	Emission or Release Factor: Soil	1,0 .10-4			
	based on initial default values with subsequent RMM, .				
	Indoor use				
Technical conditions and measures at process level to prevent release	Prevent environmental discharge consistent with regulatory requirements. Common practices vary across sites thus conservative process release estimates used.				
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site					
	Type of Sewage Treatment Plant	Municipal sewage treatment plant			
	Flow rate of sewage treatment plant effluent	2.000 m3/d			
	Degradation efficiency	96,2 %			
Conditions and measures related	Percentage removed from waste water	96,2 %			
to seware treatment plant					
to sewage treatment plant	Type of Sewage Treatment Plant	Biological treatment (Water ERC2)			
to sewage treatment plant	Type of Sewage	76 % (Water ERC2)			
to sewage treatment plant	Type of Sewage Treatment Plant				
to sewage treatment plant	Type of Sewage Treatment Plant Degradation efficiency Type of Sewage	76 % (Water ERC2) Biological treatment (Water, Sludge Treatment			
to sewage treatment plant	Type of Sewage Treatment Plant Degradation efficiency Type of Sewage Treatment Plant	76 % (Water ERC2) Biological treatment (Water, Sludge Treatment ERC2)			



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Sludge Treatment(Water, Sludge (Water, Sludge (Water, Sludge (Water, Sludge Waste treatmentConditions and measures related to external recovery of wasteDisposal methods(Efficiency: > Waste treatmentConditions and measures related to external recovery of wasteRecovery MethodsExternal treatm comply with ap regulations.2.2 Contributing scenario controlling worker exposure PROC5, PROC8b, PROC15Concentration of the Substance in Mixture/ArticleCovers percen 100 %.Product characteristicsConcentration of the Substance in Mixture/ArticleCovers percen 100 %.Covers percen 100 %.Frequency and duration of use Human factors not influenced by risk managementCovers daily exposures up to 8 hoursAssumes a good basic statard of occupat Store substance (closed systems)Handle substance for exposureTechnical conditions and measures to control dispersion from source towards the workerDisposal of wastesProvide a good less than 3 to 5 PROC4)Technical conditions and measures to control dispersion from source towards the workerBulk transfersProvide a good less than 3 to 5 PROC4)	nto a thormololudero roduction				
Conditions and measures related to external treatment of waste for disposalDisposal methods(Efficiency: > Waste treatmentWaste treatmentHazardous was Disposal methodsExternal treatmentConditions and measures related to external recovery of wasteRecovery MethodsExternal treatm comply with ap regulations.2.2 Contributing scenario co-trolling worker exposure for: PROC1 PROC5, PROC8b, PROC15Concentration of the Substance in Mixture/ArticleCovers percen 100 %.Product characteristicsConcentration of the Substance in Mixture/ArticleCovers percen 100 %.Frequency and duration of useCovers daily exposures up to 8 hoursHuman factors not influenced by risk managementAssumes activities are at ambient temperat Assumes a good basic standard of occupat (closed systems)Technical conditions and measures to control dispersion from source towards the workerBulk transfersProvide a good less than 3 to 5 PROC4)Provide a good less than 3 to 5 PROC4)	nt e.g. thermal sludge reduction Treatment ERC2)				
to external treatment of waste for disposalDisposal methods(Efficiency:> Waste treatmentWaste treatmentHazardous wasteDisposal methods(Efficiency:> Cefficiency:> 	te incineration (Air, Water ERC2)				
disposalWaste treatmentHazardous wasteDisposal methods(Efficiency: >Conditions and measures related to external recovery of wasteRecovery MethodsExternal treatm comply with ap regulations.2.2 Contributing scenario controlling worker exposure for: PROC1 PROC5, PROC8b, PROC15Concentration of the Substance in Mixture/ArticleCovers percen 100 %.Product characteristicsConcentration of the Substance in Mixture/ArticleCovers percen 100 %.Frequency and duration of useCovers daily exposures up to 8 hoursHuman factors not influenced by risk managementAssumes a good basic standard of occupat Store substance (closed systems)General exposures Disposal of wastesLimit the substance store substance Store substance Provide a good less than 3 to 5 PROC4)Technical conditions and measures to control dispersion from source towards the workerBulk transfersProvide a good less than 3 to 5 Avoid carrying minutes.(PROC	90 %) (Air, Water ERC2)				
Disposal methods(Efficiency: >Conditions and measures related to external recovery of wasteRecovery MethodsExternal treatmed comply with ap regulations.Recovery MethodsExternal recover comply with ap regulations.External recover comply with ap regulations.2.2 Contributing scenario controlling worker exposure PROC5, PROC8b, PROC15Concentration of the Substance in Mixture/ArticleExternal recover comply with ap regulations.Product characteristicsConcentration of the Substance in Mixture/ArticleCovers percen 100 %.Prequency and duration of use Human factors not influenced by risk managementCovers daily exposures up to 8 hoursGeneral exposures (closed systems)Handle substand Store substand (closed systems)Handle substand Store substand store substand sto 5 Provide a good less than 3 to 5 PROC4)Technical conditions and measures to control dispersion from source towards the workerBulk transfersProvide a good less than 3 to 5 Provide a good less than 3 to 5 Provide a good less than 3 to 5 PROC4)	te incineration (Soil ERC2)				
Conditions and measures related to external recovery of wasteRecovery Methodscomply with ap regulations.2.2 Contributing scenario controlling worker exposure PROC5, PROC8b, PROC15Concentration of the Substance in Mixture/ArticleCovers percen 100 %.Product characteristicsConcentration of the Substance in Mixture/ArticleCovers percen 100 %.Product characteristicsConcentration of the Substance in Mixture/ArticleCovers percen 100 %.Product characteristicsConcentration of the Substance in Mixture/ArticleCovers percen 100 %.Frequency and duration of use Human factors not influenced by risk managementCovers daily exposures up to 8 hoursAssumes a good basic staturd of occupat (closed systems)Handle substat Store substance (closed systems)Disposal of wastesLimit the substat Provide a good less than 3 to 5 PROC4)Technical conditions and measures to control dispersion from source towards the workerBulk transfersProvide a good less than 3 to 5 PROC4)Provide a good less than 3 to 5 PROC4)	99 %) (Soil ERC2)				
Recovery Methodscomply with ap regulations.2.2 Contributing scenario controlling worker exposure for: PROC1 PROC5, PROC8b, PROC15Product characteristicsProduct characteristicsConcentration of the Substance in Mixture/ArticleCovers percen 100 %.Product characteristicsPhysical Form (at time of use)liquidVapour pressure0,5 - 10 kPaFrequency and duration of useCovers daily exposures up to 8 hoursHuman factors not influenced by risk managementAssumes activities are at ambient temperat Assumes a good basic standard of occupat (closed systems)General exposures (closed systems)Handle substan Store substand Store substand Store substand Store substand Store substand to see PROC4)Technical conditions and measures to control dispersion from source towards the workerBulk transfersProvide a good less than 3 to 5 Avoid carrying minutes.(PROC	ent and disposal of waste should plicable local and/or national				
PROC5, PROC3b, PROC15 Product characteristics Concentration of the Substance in Mixture/Article Covers percen 100 %. Product characteristics Physical Form (at time of use) liquid Vapour pressure 0,5 - 10 kPa Frequency and duration of use Covers daily exposures up to 8 hours Human factors not influenced by risk management Assumes activities are at ambient temperate Assumes a good basic standard of occupate (closed systems) General exposures (closed systems) Limit the substance (closed systems) Disposal of wastes Disposal of wastes Provide a good less than 3 to 5 PROC4) Mixing operations (open systems) Technical conditions and measures to control dispersion from source towards the worker Bulk transfers	ery and recycling of waste should olicable local and/or national				
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Previous Frequency and duration of useCovers daily exposures up to 8 hoursFrequency and duration of useCovers daily exposures up to 8 hoursHuman factors not influenced by risk managementAssumes activities are at ambient temperat Assumes a good basic standard of occupat (closed systems)General exposures (closed systems)Handle substand Store substand Disposal of wastesDisposal of wastesLimit the substand Store substand Disposal of wastesTechnical conditions and measures to control dispersion from source towards the workerMixing operations (open systems)Provide a good less than 3 to 5 Avoid carrying minutes.(PROC	age substance in the product up to				
Frequency and duration of useCovers daily exposures up to 8 hoursHuman factors not influenced by risk managementAssumes activities are at ambient temperat Assumes a good basic standard of occupat General exposures (closed systems)General exposures (closed systems)Handle substand Store substand Disposal of wastesDisposal of wastesLimit the substand Provide a good less than 3 to 5 PROC4)Technical conditions and measures to control dispersion from source towards the workerBulk transfersProvide a good less than 3 to 5 Avoid carrying minutes.(PROC					
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General exposures (closed systems) Handle substance Store substance (closed systems) Disposal of wastes Limit the substance Store substance Provide a good less than 3 to 5 PROC4) Mixing operations (open systems) Provide a good less than 3 to 5 PROC4) Technical conditions and measures to control dispersion from source towards the worker Bulk transfers	Assumes activities are at ambient temperature.				
(closed systems)Store substanceDisposal of wastesLimit the substanceDisposal of wastesProvide a good less than 3 to 5 PROC4)Technical conditions and measures to control dispersion from source towards the workerMixing operations (open systems)Provide a good less than 3 to 5 Avoid carrying minutes.(PROC	Assumes a good basic standard of occupational hygiene is implemented.				
Disposal of wastesProvide a good less than 3 to 5 PROC4)Mixing operations (open systems)Provide a good less than 3 to 5 PROC4)Technical conditions and measures to control dispersion from source towards the workerBulk transfersProvide a good less than 3 to 5 Avoid carrying minutes.(PROC	nce within a closed system. e within a closed system.(PROC1)				
Systems)less than 3 to 5Technical conditions and measures to control dispersion from source towards the workerBulk transfersProvide a good less than 3 to 5 Avoid carrying minutes.(PROC	ance content in the product to 1 %. standard of general ventilation (not air changes per hour).(PROC3,				
measures to control dispersion from source towards the worker Bulk transfers Avoid carrying minutes.(PROC	standard of general ventilation (not air changes per hour).(PROC5)				
Drevide e rees	standard of general ventilation (not air changes per hour). out operation for more than 15 (8b)				
	standard of general ventilation (not air changes per hour).(PROC8b)				
Semi-bulk packaging	standard of general ventilation (not air changes per hour).(PROC8b)				
maintenance.	tem prior to equipment break-in or standard of general ventilation (not				
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		less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 15 minutes. Limit the substance content in the product to 1 %.(PROC8b)
	Disposal of wastes Equipment cleaning and maintenance	Limit the substance content in the product to 1 %. Drain down system prior to equipment break-in or maintenance. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 15 minutes.(PROC8b)
	Transfer from/pouring from containers With sample collection Non-dedicated facility	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 1 hour.(PROC8b)
	Laboratory activities	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 1 hour.(PROC15)
	Mixing operations (open systems)	Wear chemically resistant gloves. Use suitable eye protection.(PROC5)
	Bulk transfers	Use suitable eye protection. Wear chemically resistant gloves.(PROC8b)
Conditions and measures related to personal protection, hygiene and health evaluation	Product sampling	Use suitable eye protection. Wear chemically resistant gloves.(PROC8b)
	Drum and small package filling Semi-bulk packaging	Wear chemically resistant gloves. Use suitable eye protection.(PROC8b)
	Transfer from/pouring from containers With sample collection Non-dedicated facility	Use suitable eye protection and gloves.(PROC8b)

3. Exposure estimation and reference to its source

Environment

ERC2: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR	
ERC2			Msafe	99958kg/day		
ERC2		Fresh water	exposure estimate	0,000165mg/L	0,0188	
ERC2		Fresh water sediment	exposure estimate	0,0427mg/kg dry weight	0,0188	
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			(d.w.)	
ERC2	 Marine water	exposure estimate	0,0000152mg/ L	0,0173
ERC2	 Marine sediment	exposure estimate	0,00393mg/kg dry weight (d.w.)	0,0173
ERC2	 Sewage treatment plant (STP)	exposure estimate	0,000804mg/L	0,000122
ERC2	 Indirect exposure to humans via the environment	exposure estimate		0,000708
ERC2	 Agricultural soil	exposure estimate	0,00325mg/kg dry weight (d.w.)	0,0219
ERC2	 Air	exposure estimate	0,0153	

Workers

PROC2, PROC3, PROC4, PROC5, PROC8b, PROC15: Advanced REACH Tool (ART model) (inhalative exposure)

PROC1, PROC2, PROC3, PROC4, PROC5, PROC8b, PROC15: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Worker - inhalative, long- term - systemic	0,01ppm	0,0947
PROC1, PROC3		Worker - dermal, short- term - local	0,0250mg/cm2	0,155
PROC2, PROC3, PROC4		Worker - inhalative, long- term	4,20ppm	0,702
PROC2, PROC4, PROC5, PROC8b		Worker - dermal, short- term - local	0,0999mg/cm2	0,621
PROC5		Worker - inhalative, long- term	1,1ppm	0,184
PROC8b		Worker - inhalative, long- term	5,3ppm	0,886
PROC15		Worker - inhalative, long- term	2,8ppm	0,468
PROC15		Worker - dermal, short- term - local	0,025mg/cm2	0,155

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

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Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-forindustries-libraries.html).

Health

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES


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•	Scenario 5: Formulation of	•		
Main User Groups	SU 3: Industrial uses: Use sites	SU 3: Industrial uses: Uses of substances as such or in preparations at industria sites		
Sectors of end-use	SU 10: Formulation [mixing alloys)	g] of preparations and/ or re-packaging (excluding		
Process categories	exposure or processes with PROC2: Use in closed, co PROC3: Manufacture or fo processes with occasional containment condition PROC4: Use in batch and exposure arises PROC5: Mixing or blendin and articles (multistage and PROC8a: Transfer of subs vessels/ large containers a PROC8b: Transfer of subs vessels/ large containers a PROC9: Transfer of subst filling line, including weighing	 PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated facilities) 		
Environmental Release Categories		PROC15: Use as laboratory reagent ERC2: Formulation of preparations		
2.1 Contributing scenario	o controlling environmental	exposure for: ERC2		
, CEPE spERC 2.1b.v1 ha , CEPE spERC 2.2a. v1 ha	s been used to evaluate the e s been used to evaluate the e as been used to evaluate the e	exposure for the environment. exposure for the environment. exposure for the environment. hks sector, please visit the website:		
	Amounts used in the EU (tonnes/year)	780		
	Fraction of EU tonnage used in region:	1		
Amount used	Regional use tonnage (tons/year):	100 (CEPE 2.1a.v1, CEPE 2.1b.v1, CEPE 2.2a.v1)		
	Regional use tonnage (tons/year):	90 (CEPE 2.1b.v1, CEPE 2.2a.v1)		
	Fraction of regional	1 (CEPE 2.1a.v1, CEPE 2.1b.v1, CEPE 2.2a.v1)		
	tonnage used locally:			
	Maximum daily site	444 (CEPE 2.1a.v1, CEPE 2.1b.v1, CEPE 2.2a.v1)		



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	tonnage (kg/day):			
	Maximum daily site tonnage (kg/day):	400 (CEPE 2.1b.v1, CEPE 2.2a.v1)		
	Annual site tonnage	100 (CEPE 2.1a.v1, CEPE 2.1b.v1, CEPE 2.2a.v1)		
	Annual site tonnage	90 (CEPE 2.1b.v1, CEPE 2.2a.v1)		
Environment factors not	Flow rate of receiving surface water	18.000 m3/d		
influenced by risk management	Dilution Factor (River)	10		
	Dilution Factor (Coastal Areas)	100		
	Continuous release			
	Number of emission days per year	225		
	Emission or Release Factor: Air	0,006 (CEPE 2.1a.v1, CEPE 2.1b.v1, CEPE 2.2a.v1)		
	initial release prior to RMM	, . (CEPE 2.1a.v1, CEPE 2.1b.v1, CEPE 2.2a.v1)		
	Emission or Release Factor: Air	0,004 (CEPE 2.1b.v1)		
Other given operational	initial release prior to RMM, . (CEPE 2.1b.v1)			
conditions affecting environmental exposure	Emission or Release Factor: Air	0,00009 (CEPE 2.1b.v1, CEPE 2.2a.v1)		
	initial release prior to RMM	, . (CEPE 2.1b.v1, CEPE 2.2a.v1)		
	Emission or Release Factor: Air	0,005 (CEPE 2.1b.v1, CEPE 2.2a.v1)		
	initial release prior to RMM	, . (CEPE 2.1b.v1, CEPE 2.2a.v1)		
	Emission or Release Factor: Soil	0		
	initial release prior to RMM, .			
	Indoor use			
Technical conditions and measures at process level to prevent release Technical onsite conditions and		harge consistent with regulatory requirements. ross sites thus conservative process release		
measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site				
	Type of Sewage Treatment Plant	Municipal sewage treatment plant (CEPE 2.1a.v1, CEPE 2.1b.v1, CEPE 2.2a.v1)		
Conditions and measures related to sewage treatment plant	Flow rate of sewage treatment plant effluent	2.000 m3/d (CEPE 2.1a.v1, CEPE 2.1b.v1, CEPE 2.2a.v1)		
	Degradation efficiency	96,2 % (CEPE 2.1a.v1, CEPE 2.1b.v1, CEPE		
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		2.2a.v1)
	Percentage removed from waste water	98 % (CEPE 2.1a.v1, CEPE 2.1b.v1, CEPE 2.2a.v1)
	Type of Sewage Treatment Plant	Municipal sewage treatment plant (CEPE 2.1b.v1, CEPE 2.2a.v1)
	Flow rate of sewage treatment plant effluent	2.000 m3/d (CEPE 2.1b.v1, CEPE 2.2a.v1)
	Degradation efficiency	96,2 % (CEPE 2.1b.v1, CEPE 2.2a.v1)
	Percentage removed from waste water	95 % (CEPE 2.1b.v1, CEPE 2.2a.v1)
	Type of Sewage Treatment Plant	Municipal sewage treatment plant (CEPE 2.1b.v1, CEPE 2.2a.v1)
	Flow rate of sewage treatment plant effluent	2.000 m3/d (CEPE 2.1b.v1, CEPE 2.2a.v1)
	Degradation efficiency	96,2 % (CEPE 2.1b.v1, CEPE 2.2a.v1)
	Percentage removed from waste water	99 % (CEPE 2.1b.v1, CEPE 2.2a.v1)
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
		External recovery and recycling of waste should
Conditions and measures related to external recovery of waste	Recovery Methods	comply with applicable local and/or national regulations.
to external recovery of waste	ntrolling worker exposu	comply with applicable local and/or national
to external recovery of waste 2.2 Contributing scenario co PROC5, PROC8a, PROC8	ntrolling worker exposu	comply with applicable local and/or national regulations.
to external recovery of waste 2.2 Contributing scenario co PROC5, PROC8a, PROC8	ntrolling worker exposu b, PROC9, PROC15 Concentration of the Substance in	comply with applicable local and/or national regulations. re for: PROC1, PROC2, PROC3, PROC4, Covers percentage substance in the product up to
to external recovery of waste 2.2 Contributing scenario co PROC5, PROC8a, PROC8	ntrolling worker exposu b, PROC9, PROC15 Concentration of the Substance in Mixture/Article Physical Form (at time of	comply with applicable local and/or national regulations. re for: PROC1, PROC2, PROC3, PROC4, Covers percentage substance in the product up to 100 %.
to external recovery of waste 2.2 Contributing scenario co PROC5, PROC8a, PROC8 Product characteristics	ntrolling worker exposu b, PROC9, PROC15 Concentration of the Substance in Mixture/Article Physical Form (at time of use)	comply with applicable local and/or national regulations. re for: PROC1, PROC2, PROC3, PROC4, Covers percentage substance in the product up to 100 %. liquid 0,5 - 10 kPa
to external recovery of waste 2.2 Contributing scenario co PROC5, PROC8a, PROC8 Product characteristics Frequency and duration of use	ntrolling worker exposu b, PROC9, PROC15 Concentration of the Substance in Mixture/Article Physical Form (at time of use) Vapour pressure	comply with applicable local and/or national regulations. re for: PROC1, PROC2, PROC3, PROC4, Covers percentage substance in the product up to 100 %. liquid 0,5 - 10 kPa to 8 hours
to external recovery of waste 2.2 Contributing scenario co PROC5, PROC8a, PROC8 Product characteristics Frequency and duration of use Human factors not influenced by	ntrolling worker exposu b, PROC9, PROC15 Concentration of the Substance in Mixture/Article Physical Form (at time of use) Vapour pressure Covers daily exposures up Assumes activities are at a	comply with applicable local and/or national regulations. re for: PROC1, PROC2, PROC3, PROC4, Covers percentage substance in the product up to 100 %. liquid 0,5 - 10 kPa to 8 hours
to external recovery of waste 2.2 Contributing scenario co PROC5, PROC8a, PROC8 Product characteristics Frequency and duration of use Human factors not influenced by	ntrolling worker exposu b, PROC9, PROC15 Concentration of the Substance in Mixture/Article Physical Form (at time of use) Vapour pressure Covers daily exposures up Assumes activities are at a	comply with applicable local and/or national regulations. re for: PROC1, PROC2, PROC3, PROC4, Covers percentage substance in the product up to 100 %. liquid 0,5 - 10 kPa to 8 hours mbient temperature.
to external recovery of waste 2.2 Contributing scenario co PROC5, PROC8a, PROC8 Product characteristics Frequency and duration of use Human factors not influenced by risk management Technical conditions and measures to control dispersion	ntrolling worker exposu b, PROC9, PROC15 Concentration of the Substance in Mixture/Article Physical Form (at time of use) Vapour pressure Covers daily exposures up Assumes activities are at a Assumes a good basic stat General exposures	comply with applicable local and/or national regulations. re for: PROC1, PROC2, PROC3, PROC4, Covers percentage substance in the product up to 100 %. liquid 0,5 - 10 kPa to 8 hours mbient temperature. ndard of occupational hygiene is implemented. Handle substance within a closed system. Store substance within a closed system. Mathin a closed system. Store substance within a closed
to external recovery of waste 2.2 Contributing scenario co PROC5, PROC8a, PROC8 Product characteristics Frequency and duration of use	ntrolling worker exposu b, PROC9, PROC15 Concentration of the Substance in Mixture/Article Physical Form (at time of use) Vapour pressure Covers daily exposures up Assumes activities are at a Assumes a good basic star General exposures (closed systems) Continuous process	comply with applicable local and/or national regulations. re for: PROC1, PROC2, PROC3, PROC4, Covers percentage substance in the product up to 100 %. liquid 0,5 - 10 kPa to 8 hours mbient temperature. ndard of occupational hygiene is implemented. Handle substance within a closed system. Store substance within a closed system. Store substance within a closed system. Store substance within a closed system. Ensure material transfers are under containment or extract ventilation. Ensure samples are obtained under containment or



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		extract ventilation.(PROC3)
	Batch process With sample collection	Ensure material transfers are under containment or extract ventilation. Ensure samples are obtained under containment or extract ventilation.(PROC3)
	Mixing operations (open systems) Batch process With sample collection	Ensure material transfers are under containment or extract ventilation. Ensure samples are obtained under containment or extract ventilation.(PROC4, PROC5)
	Material transfers Non-dedicated facility	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Ensure material transfers are under containment or extract ventilation. Ensure samples are obtained under containment or extract ventilation.(PROC8a)
	Material transfers Dedicated facility	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Ensure material transfers are under containment or extract ventilation. Ensure samples are obtained under containment or extract ventilation.(PROC8b)
	Equipment cleaning and maintenance	Drain or remove substance from equipment prior to break-in or maintenance. Limit the substance content in the product to 5 %. Provide extract ventilation to material transfer points and other openings. Avoid carrying out operation for more than 15 minutes.(PROC8a)
	Disposal of wastes	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Limit the substance content in the product to 1 %. Avoid carrying out operation for more than 15 minutes.(PROC8a)
	Drum and small package filling	Ensure material transfers are under containment or extract ventilation. Ensure samples are obtained under containment or extract ventilation.(PROC9)
	Laboratory activities	Ensure material transfers are under containment or extract ventilation. Ensure samples are obtained under containment or extract ventilation.(PROC15)
Conditions and measures related o personal protection, hygiene	Material transfers Non-dedicated facility	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection.(PROC8a)
and health evaluation	Material transfers Dedicated facility	Wear chemically resistant gloves. Use suitable eye protection.(PROC8b)

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3. Exposure estimation and reference to its source

Environment

CEPE SPERC 2.1a.v1: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
CEPE SPERC 2.1a.v1			Msafe	44317kg/day	
CEPE SPERC 2.1a.v1		Fresh water	exposure estimate	0,0000881mg/ L	0,01
CEPE SPERC 2.1a.v1		Fresh water sediment	exposure estimate	0,0228mg/kg dry weight (d.w.)	0,01
CEPE SPERC 2.1a.v1		Marine water	exposure estimate	0,0000074mg/ L	0,00847
CEPE SPERC 2.1a.v1		Marine sediment	exposure estimate	0,00193mg/kg dry weight (d.w.)	0,00848
CEPE SPERC 2.1a.v1		Sewage treatment plant (STP)	exposure estimate	< 0,001mg/L	< 0,001
CEPE SPERC 2.1a.v1		Indirect exposure to humans via the environment	exposure estimate		0,000708
CEPE SPERC 2.1a.v1		Agricultural soil	exposure estimate	0,0000418mg/ kg dry weight (d.w.)	0,000093
CEPE SPERC 2.1a.v1		Air	exposure estimate	0,000525	

Workers

PROC1, PROC2, PROC3, PROC4, PROC8b, PROC9, PROC15: ECETOC TRA model v2 PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC15: Advanced REACH Tool (ART model)

(inhalative exp	oosure)			
Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Worker - inhalative, long- term - systemic	0,01ppm	0,0947
PROC1, PROC3		Worker - dermal, short- term - local	0,0250mg/cm2	0,155
PROC2, PROC3		Worker - inhalative, long- term	1,4ppm	0,234
PROC2		Worker - dermal, short-	0,00999mg/cm2	0,0621
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	term - local		
PROC4	 Worker - inhalative, long- term	2,8ppm	0,468
PROC4, PROC8b, PROC9	 Worker - dermal, short- term - local	0,05mg/cm2	0,311
PROC5, PROC9	 Worker - inhalative, long- term	3,3ppm	0,552
PROC8b, PROC8a	 Worker - inhalative, long- term	4,30ppm	0,719
PROC8b	 Worker - dermal, short- term - local	0,00999mg/cm2	0,0621
PROC15	 Worker - inhalative, long- term	1,0ppm	0,167
PROC15	 Worker - dermal, short- term - local	0,0025mg/cm2	0,0155

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-forindustries-libraries.html).

Health

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES



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Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites		
Process categories	PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC15: Use as laboratory reagent		
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles		

2.1 Contributing scenario controlling environmental exposure for: ERC4

Substance is complex UVCB, Non-hydrophobic.

, Readily biodegradable.

, CEPE SPERC 4.na.v1.

, CEPE SPERC 4.nb.v1.

, ESVOC spERC 4.3a.v1 has been used to evaluate the exposure for the environment.

, For more information on spERC from the Coatings & Inks sector, please visit the website:

www.cepe.org.

, For more information on ESVOC spERC from the Solvents sector, please visit the website: www.esig.org.

	Amounts used in the EU (tonnes/year)	300
	Fraction of EU tonnage used in region:	1
Amount used	Regional use tonnage (tons/year):	100 (CEPE 4.1a.v1, CEPE 4.1b.v1, ESVOC 4.3a.v1)
	Fraction of regional tonnage used locally:	1 (ESVOC 4.3a.v1, CEPE 4.1a.v1, CEPE 4.1b.v1)
	Maximum daily site tonnage (kg/day):	455 (CEPE 4.1a.v1, CEPE 4.1b.v1)
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	Maximum daily site	333 (ESVOC 4.3a.v1)	
	tonnage (kg/day):		
	Annual site tonnage	100 (CEPE 4.1a.v1, CEPE 4.1b.v1, ESVOC 4.3a.v1)	
	Flow rate of receiving surface water	18.000 m3/d	
Environment factors not influenced by risk management	Dilution Factor (River)	10	
initial of the second synthetic management	Dilution Factor (Coastal Areas)	100	
	Continuous release(CEPE	4.1a.v1, CEPE 4.1b.v1)	
	Number of emission days per year	220 (CEPE 4.1a.v1, CEPE 4.1b.v1)	
	Continuous release(ESVO	C 4.3a.v1)	
	Number of emission days per year	300 (ESVOC 4.3a.v1)	
	Emission or Release Factor: Air	0,8 (CEPE 4.1a.v1)	
	initial release prior to RMM	, . (CEPE 4.1a.v1)	
	Emission or Release Factor: Air	0,98 (CEPE 4.1b.v1)	
Other given operational	initial release prior to RMM	, . (CEPE 4.1b.v1)	
conditions affecting environmental exposure	Emission or Release Factor: Air	0,098 (ESVOC 4.3a.v1)	
	initial release prior to RMM	, . (ESVOC 4.3a.v1)	
	Emission or Release Factor: Water	0,002 (CEPE 4.1a.v1, CEPE 4.1b.v1)	
	initial release prior to RMM	, . (CEPE 4.1a.v1, CEPE 4.1b.v1)	
	Emission or Release Factor: Water	0,0007 (ESVOC 4.3a.v1)	
	initial release prior to RMM	, . (ESVOC 4.3a.v1)	
	Emission or Release Factor: Soil	0	
	initial release prior to RMM, .		
	Indoor use		
Technical conditions and measures at process level to prevent release		harge consistent with regulatory requirements. ross sites thus conservative process release	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil			_
Organizational measures to prevent/limit release from the site			
	I		



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	Type of Sewage Treatment Plant	Municipal sewage treatment plant	
	Flow rate of sewage treatment plant effluent	2.000 m3/d	
	Degradation efficiency	96,2 %	
	Percentage removed from waste water	96,2 %	
	Type of Sewage Treatment Plant	Municipal sewage treatment plant (only CEPE 4.1b.v1)	
Conditions and measures related	Flow rate of sewage treatment plant effluent	2.000 m3/d (only CEPE 4.1b.v1)	
to sewage treatment plant	Degradation efficiency	96,2 % (only CEPE 4.1b.v1)	
	Percentage removed from waste water	95 % (only CEPE 4.1b.v1)	
	Type of Sewage Treatment Plant	Municipal sewage treatment plant (only CEPE 4.1b.v1)	
	Flow rate of sewage treatment plant effluent	2.000 m3/d (only CEPE 4.1b.v1)	
	Degradation efficiency	96,2 % (only CEPE 4.1b.v1)	
	Percentage removed from waste water	99 % (only CEPE 4.1b.v1)	
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.	
Conditions and measures related to external recovery of waste	Recovery Methods	External recovery and recycling of waste should comply with applicable local and/or national regulations.	
2.2 Contributing scenario co PROC5, PROC7, PROC8a		re for: PROC1, PROC2, PROC3, PROC4, DC13, PROC15	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	0,5 - 10 kPa	
Frequency and duration of use	Covers daily exposures up	to 8 hours	
Human factors not influenced by	Assumes activities are at a	mbient temperature.	
risk management	Assumes a good basic standard of occupational hygiene is implemented.		
Technical conditions and measures to control dispersion from source towards the worker	Bulk transfers	Limit the substance content in the product to 10 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Ensure material transfers are under containment or extract ventilation.	
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	Ensure samples are obtained under containment extract ventilation.(PROC1)
Storage	Limit the substance content in the product to 10 % Provide a good standard of general ventilation (m less than 3 to 5 air changes per hour).(PROC1, PROC2)
Preparation of material for application	Limit the substance content in the product to 25 % Handle substance within a closed system. Store substance within a closed system. Provide extract ventilation to points where emissions occur.(PROC3)
Preparation of material for application	Ensure material transfers are under containment extract ventilation. Ensure samples are obtained under containment extract ventilation. Limit the substance content in the product to 10 %.(PROC5)
Bulk loading (including marine vessel/barge, rail/road car and IBC loading) of substance within closed or contained systems, including incidental exposures during its sampling, storage, unloading, maintenance and associated laboratory activities.	Limit the substance content in the product to 25 % Handle substance within a closed system. Store substance within a closed system. Provide extraction ventilation at points where emissions occur.(PROC2)
Bulk open loading Transfer from/pouring from containers	Limit the substance content in the product to 25 % Provide extract ventilation to material transfer poi and other openings.(PROC3)
Spraying (automatic/robotic)	Limit the substance content in the product to 25 % Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.(PROC7)
Roller, spreader, flow application	Limit the substance content in the product to 10 % Provide extract ventilation to points where emissions occur.(PROC10)
Equipment cleaning and maintenance	Limit the substance content in the product to 10 % Provide extract ventilation to points where emissions occur.(PROC8a)
Disposal of wastes Storage	Limit the substance content in the product to 10 % Provide a good standard of general ventilation (no less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 15



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	Laboratory activities	Limit the substance content in the product to 25 %. Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure.(PROC15)
	Film formation - air drying	Limit the substance content in the product to 10 %. Provide extract ventilation to points where emissions occur.(PROC2, PROC4)
	Bulk loading (including marine vessel/barge, rail/road car and IBC loading) of substance within closed or contained systems, including incidental exposures during its sampling, storage, unloading, maintenance and associated laboratory activities.	Limit the substance content in the product to 25 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Ensure material transfers are under containment or extract ventilation. Ensure samples are obtained under containment or extract ventilation.(PROC8b)
	Bulk transfers	Wear chemically resistant gloves. Use suitable eye protection.(PROC1)
	Preparation of material for application	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection.(PROC5)
	Spraying (automatic/robotic)	Wear chemically resistant gloves. Use suitable eye protection. Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC7)
Conditions and measures related to personal protection, hygiene	Equipment cleaning and maintenance	Wear chemically resistant gloves. Use suitable eye protection.(PROC8a)
and health evaluation	Bulk loading (including marine vessel/barge, rail/road car and IBC loading) of substance within closed or contained systems, including incidental exposures during its sampling, storage, unloading, maintenance and associated laboratory activities.	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection.(PROC8b)
3. Exposure estimation and	reference to its source	
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ESVOC SPERC 4.3a.v1: Environmental exposure estimation is based on Ecetoc TRA model v2. ESVOC SPERC 4.3a.v1: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ESVOC SPERC 4.3a.v1			Msafe	3107kg/day	
ESVOC SPERC 4.3a.v1		Fresh water	exposure estimate	0,000532mg/L	0,0605
ESVOC SPERC 4.3a.v1		Fresh water sediment	exposure estimate	0,137mg/kg dry weight (d.w.)	0,0605
ESVOC SPERC 4.3a.v1		Marine water	exposure estimate	0,0000519mg/ L	0,0589
ESVOC SPERC 4.3a.v1		Marine sediment	exposure estimate	0,0134mg/kg dry weight (d.w.)	0,059
ESVOC SPERC 4.3a.v1		Sewage treatment plant (STP)	exposure estimate	0,00446mg/L	0,000675
ESVOC SPERC 4.3a.v1		Indirect exposure to humans via the environment	exposure estimate		0,000708
ESVOC SPERC 4.3a.v1		Agricultural soil	exposure estimate	0,0116mg/kg dry weight (d.w.)	0,107
ESVOC SPERC 4.3a.v1		Air	exposure estimate	0,00753	

Workers

PROC2, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC10, PROC15: Advanced REACH Tool (ART model) (inhalative exposure)

PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC10, PROC15: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Exposure routes	Exposure routes Level of Exposure RC	
PROC1		Worker - inhalative, long- term - systemic	1,5ppm	0,251
PROC1, PROC2, PROC8a, PROC10		Worker - dermal, short- term - local	0,06mg/cm2	0,373
PROC2, PROC15		Worker - inhalative, long- term	0,6ppm	0,568
PROC3		Worker - dermal, short- term - local	0,0150mg/cm2	0,0932
PROC4		Worker - inhalative, long-	0,023ppm	0,00385
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	term		
PROC4	 Worker - dermal, short- term - local	0,03mg/cm2	0,186
PROC5, PROC7, PROC8a, PROC10	 Worker - inhalative, long- term	2,7ppm	0,452
PROC5	 Worker - dermal, short- term - local	0,12mg/cm2	0,745
PROC7	 Worker - dermal, short- term - local	0,0941mg/cm2	0,582
PROC8b	 Worker - inhalative, long- term	0,9ppm	0,853
PROC8b	 Worker - dermal, short- term - local	0,03mg/cm2	0,186
PROC15	 Worker - dermal, short- term - local	0,00150mg/cm2	0,00932

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-forindustries-libraries.html).

Health

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES



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	Scenario 7: Use in coating				
Main User Groups		Public domain (administration, education,			
Process categories	PROC1: Chemical produc exposure or processes with PROC2: Use in closed, co PROC3: Manufacture or fo processes with occasional containment condition PROC4: Use in batch and exposure arises PROC5: Mixing or blendin and articles (multistage and PROC8a: Transfer of subs vessels/ large containers a PROC8b: Transfer of subs vessels/ large containers a PROC8b: Transfer of subs vessels/ large containers a PROC10: Roller applicatio PROC11: Non industrial s PROC13: Treatment of art PROC15: Use as laborato	PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4: Use in batch and other process (synthesis) where opportunity for			
Environmental Release Categories		ndoor use of processing aids in open systems utdoor use of processing aids in open systems			
2.1 Contributing scenario	o controlling environmental	exposure for: ERC8a, ERC8d			
, For more information on a www.cepe.org. , ESVOC spERC 8.3b.v1 h	is been used to evaluate the e spERC from the Coatings & Ir has been used to evaluate the	exposure for the environment. hks sector, please visit the website: e exposure for the environment. ents sector, please visit the website:			
	Amounts used in the EU (tonnes/year)	110			
	Fraction of EU tonnage used in region:	0,1			
Amount used	Regional use tonnage (tons/year):	1 (CEPE 8a.n.v1)			
	Regional use tonnage (tons/year):	10 (ESVOC 8.3b.v1)			
	Fraction of regional tonnage used locally:	0,002 (CEPE 8a.n.v1)			
	torinage used locally.				



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	Degradation eniciency	30,2 /0 (L3VOC 0.30.VI)	
to sewage treatment plant	Flow rate of sewage treatment plant effluent Degradation efficiency	2.000 m3/d (ESVOC 8.3b.v1) 96,2 % (ESVOC 8.3b.v1)	
Conditions and measures related	Type of Sewage Treatment Plant	Municipal sewage treatment plant (ESVOC 8.3b.v1)	
measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	7		
Technical conditions and measures at process level to prevent release Technical onsite conditions and		harge consistent with regulatory requirements. ross sites thus conservative process release	
	Indoor or outdoor use		
	Factor: Soil initial release prior to RMM		
	Emission or Release	0,01 (ESVOC 8.3b.v1)	
	initial release prior to RMM		
environmental exposure	Emission or Release Factor: Water	0,01 (ESVOC 8.3b.v1)	
conditions affecting	Factor: Water initial release prior to RMM		
Other given operational	Emission or Release	0,02 (CEPE 8a.n.v1)	
		, . (CEPE 8a.n.v1, ESVOC 8.3b.v1)	
	Emission or Release Factor: Air	0,98 (CEPE 8a.n.v1, ESVOC 8.3b.v1)	
	Number of emission days per year	365	
	Areas) Wide dispersive use		
influenced by risk management	Dilution Factor (Coastal	100	
Environment factors not	Flow rate of receiving surface water Dilution Factor (River)	18.000 m3/d	
	Annual site tonnage	0,005 (ESVOC 8.3b.v1)	
	tonnage (kg/day): Annual site tonnage	0,002 (CEPE 8a.n.v1)	
	tonnage (kg/day): Maximum daily site	0,0137 (ESVOC 8.3b.v1)	
	tonnage used locally: Maximum daily site	0,0055 (CEPE 8a.n.v1)	
	Fraction of regional	0,0005 (ESVOC 8.3b.v1)	



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	Percentage removed from waste water	96,2 % (ESVOC 8.3b.v1)
	Type of Sewage Treatment Plant	Municipal sewage treatment plant (CEPE 8a.n.v1)
	Flow rate of sewage treatment plant effluent	2.000 m3/d (CEPE 8a.n.v1)
	Degradation efficiency	96,2 % (CEPE 8a.n.v1)
	Percentage removed from waste water	95 % (CEPE 8a.n.v1)
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	Recovery Methods	External recovery and recycling of waste should comply with applicable local and/or national regulations.
		re for: PROC1, PROC2, PROC3, PROC4, ROC13, PROC15, PROC19
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	0,5 - 10 kPa
Frequency and duration of use	Covers daily exposures up	to 8 hours
Human factors not influenced by	Assumes activities are at a	mbient temperature.
risk management	Assumes a good basic star	ndard of occupational hygiene is implemented.
	Bulk transfers	Limit the substance content in the product to 10 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Ensure material transfers are under containment or extract ventilation. Ensure samples are obtained under containment or extract ventilation.(PROC1)
Technical conditions and measures to control dispersion from source towards the worker	Storage	Limit the substance content in the product to 10 %. Provide extract ventilation to points where emissions occur.(PROC1, PROC2)
from source towards the worker	Preparation of material for application	Limit the substance content in the product to 25 %. Handle substance within a closed system. Store substance within a closed system.(PROC3)
	Preparation of material for application	Ensure material transfers are under containment or extract ventilation. Ensure samples are obtained under containment or extract ventilation. Limit the substance content in the product to 10
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Bulk loading (including marine vessel/barge,	
rail/road car and IBC loading) of substance within closed or contained systems, including incidental exposures during its sampling, storage, unloading, maintenance and associated laboratory activities.	Limit the substance content in the product to 25 % Handle substance within a closed system. Store substance within a closed system. Provide extraction ventilation at points where emissions occur.(PROC2)
Bulk open loading Transfer from/pouring from containers	Limit the substance content in the product to 25 % Provide extract ventilation to material transfer poi and other openings.(PROC3)
Ad hoc manual application via trigger sprays, dipping, etc.	Limit the substance content in the product to 10 % Provide extract ventilation to points where emissions occur. Avoid carrying out operation for more than 15 minutes. Ensure material transfers are under containment extract ventilation. Ensure samples are obtained under containment extract ventilation.(PROC13)
Roller, spreader, flow application	Limit the substance content in the product to 10 % Provide extract ventilation to points where emissions occur.(PROC10)
Equipment cleaning and maintenance	Limit the substance content in the product to 10 % Provide extract ventilation to points where emissions occur.(PROC8a)
Disposal of wastes Storage	Limit the substance content in the product to 10 % Provide a good standard of general ventilation (no less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 15 minutes.(PROC8a)
Laboratory activities	Limit the substance content in the product to 25 % Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure.(PROC15)
Film formation - air drying	Limit the substance content in the product to 10 % Provide extract ventilation to points where emissions occur.(PROC2, PROC4)
Bulk loading (including marine vessel/barge, rail/road car and IBC loading) of substance	Limit the substance content in the product to 25 % Provide a good standard of general ventilation (no less than 3 to 5 air changes per hour). Ensure material transfers are under containment
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	within closed or contained systems, including incidental exposures during its sampling, storage, unloading, maintenance and associated laboratory activities.	extract ventilation. Ensure samples are obtained under containment or extract ventilation.(PROC8b)
	Spraying/ fogging by manual application	Limit the substance content in the product to 10 %. Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.(PROC11)
	Hand application - fingerpaints, pastels, adhesives	Limit the substance content in the product to 10 %.(PROC19)
	Bulk transfers	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.(PROC1)
	Preparation of material for application	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection.(PROC5)
	Equipment cleaning and maintenance	Wear chemically resistant gloves. Use suitable eye protection.(PROC8a)
Conditions and measures related to personal protection, hygiene and health evaluation	Bulk loading (including marine vessel/barge, rail/road car and IBC loading) of substance within closed or contained systems, including incidental exposures during its sampling, storage, unloading, maintenance and associated laboratory activities.	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection.(PROC8b)
	Spraying/ fogging by manual application	Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC11)
	Hand application - fingerpaints, pastels, adhesives	Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls. Wear a respirator conforming to EN140 with Type A/P2 filter or better.

3. Exposure estimation and reference to its source

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Use suitable eye protection.(PROC19)



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Environment

ESVOC SPERC 8.3b.v1: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ESVOC SPERC 8.3b.v1			Msafe	1,35kg/day	
ESVOC SPERC 8.3b.v1		Fresh water	exposure estimate	0,0000892mg/ L	0,0101
ESVOC SPERC 8.3b.v1		Fresh water sediment	exposure estimate	0,0230mg/kg dry weight (d.w.)	0,0101
ESVOC SPERC 8.3b.v1		Marine water	exposure estimate	0,0000754mg/ L	0,00857
ESVOC SPERC 8.3b.v1		Marine sediment	exposure estimate	0,00195mg/kg dry weight (d.w.)	0,00858
ESVOC SPERC 8.3b.v1		Sewage treatment plant (STP)	exposure estimate	0,0000026mg/ L	< 0,001
ESVOC SPERC 8.3b.v1		Indirect exposure to humans via the environment	exposure estimate		0,000708
ESVOC SPERC 8.3b.v1		Agricultural soil	exposure estimate	0,0000104mg/ kg dry weight (d.w.)	0,000071
ESVOC SPERC 8.3b.v1		Air	exposure estimate	0,0000743	

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15, PROC19: Advanced REACH Tool (ART model) (inhalative exposure) PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15, PROC19: ECETOC TBA model v2

PROCI9: ECE	ETUC TRA model v2			
Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Worker - inhalative, long- term - systemic	0,006ppm	0,00568
PROC1, PROC3, PROC15		Worker - dermal, short- term - local	0,0150mg/cm2	0,0932
PROC2, PROC8a		Worker - inhalative, long- term	1,50ppm	0,251
PROC2, PROC5, PROC8a,		Worker - dermal, short- term - local	0,006mg/cm2	0,0373

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PROC10			
PROC3, PROC13	 Worker - inhalative, long- term	2,80ppm	0,468
PROC4, PROC8b, PROC13	 Worker - dermal, short- term - local	0,03mg/cm2	0,186
PROC4, PROC5, PROC10, PROC11	 Worker - inhalative, long- term	2,70ppm	0,0452
PROC8a, PROC10, PROC11, PROC15	 Worker - inhalative, long- term	0,7ppm	0,663
PROC8b	 Worker - inhalative, long- term	0,30ppm	0,284
PROC11	 Worker - dermal, short- term - local	0,0941mg/cm2	0,582
PROC15	 Worker - inhalative, long- term	1,0ppm	0,167
PROC19	 Worker - inhalative, long- term	1,20ppm	0,201
PROC19	 Worker - dermal, short- term - local	0,124mg/cm2	0,769

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Health

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES



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Main User Groups	SU 3: Industrial uses: Use sites	s of substances as such or in preparations at industria				
Sectors of end-use	SU 10: Formulation [mixing	SU 10: Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)				
Process categories	exposure or processes with PROC2: Use in closed, co PROC3: Manufacture or fo processes with occasional containment condition PROC4: Use in batch and exposure arises PROC5: Mixing or blendin and articles (multistage and PROC8b: Transfer of subst vessels/ large containers a PROC9: Transfer of subst filling line, including weighing	 PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation 				
Environmental Release Categories	ERC2: Formulation of prep	• •				
2.1 Contributing scenar	rio controlling environmental	exposure for: ERC2				
Substance is complex UV , Readily biodegradable. , FEICA spERC 2.1b.v1 h , FEICA spERC 2.1c.v1 h , FEICA spERC 2.2a.v1 h	VCB, Non-hydrophobic. has been used to evaluate the onas been used to evaluate the onas been used to evaluate the onas been used to evaluate the other states the other states and the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are state	exposure for the environment. exposure for the environment.				
Substance is complex UV , Readily biodegradable. , FEICA spERC 2.1b.v1 h , FEICA spERC 2.1c.v1 h , FEICA spERC 2.2a.v1 h , For more information or	VCB, Non-hydrophobic. has been used to evaluate the onas been used to evaluate the onas been used to evaluate the onas been used to evaluate the other states the other states and the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are states as been used to evaluate the other states are state	exposure for the environment. exposure for the environment. exposure for the environment.				
Substance is complex UV , Readily biodegradable. , FEICA spERC 2.1b.v1 h , FEICA spERC 2.1c.v1 h , FEICA spERC 2.2a.v1 h , For more information or	VCB, Non-hydrophobic. has been used to evaluate the on the second second second second to evaluate the one of the second	exposure for the environment. exposure for the environment. exposure for the environment. sives & Sealants sector, please visit the website:				
Substance is complex UV , Readily biodegradable. , FEICA spERC 2.1b.v1 k , FEICA spERC 2.1c.v1 k , FEICA spERC 2.2a.v1 k , For more information or www.feica.eu.	VCB, Non-hydrophobic. has been used to evaluate the end has been used to evaluate th	exposure for the environment. exposure for the environment. exposure for the environment. sives & Sealants sector, please visit the website:				
Substance is complex UV , Readily biodegradable. , FEICA spERC 2.1b.v1 k , FEICA spERC 2.1c.v1 k , FEICA spERC 2.2a.v1 k , For more information or www.feica.eu.	VCB, Non-hydrophobic. has been used to evaluate the end has been used to evaluate th	exposure for the environment. exposure for the environment. exposure for the environment. sives & Sealants sector, please visit the website: 600 1 200 (FEICA 2.1c.v1, FEICA 2.1b.v1, FEICA				
Substance is complex UV , Readily biodegradable. , FEICA spERC 2.1b.v1 h , FEICA spERC 2.1c.v1 h , FEICA spERC 2.2a.v1 h , For more information or	VCB, Non-hydrophobic. has been used to evaluate the one of the evaluate the evalua	exposure for the environment. exposure for the environment. exposure for the environment. sives & Sealants sector, please visit the website: 600 1 200 (FEICA 2.1c.v1, FEICA 2.1b.v1, FEICA 2.2a.v1)				



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	tonnage:	2.2a.v1)	
	Annual site tonnage	200 (FEICA 2.1c.v1, FEICA 2.1b.v1, FEICA 2.2a.v1)	
	Flow rate of receiving surface water	18.000 m3/d	
Environment factors not influenced by risk management	Dilution Factor (River)	10	
	Dilution Factor (Coastal Areas)	100	
	Continuous release		
	Number of emission days per year	220	
Other given operational	Emission or Release Factor: Air	0,006 (FEICA 2.1c.v1, FEICA 2.1b.v1)	
conditions affecting environmental exposure	initial release prior to RMM	, . (FEICA 2.1c.v1, FEICA 2.1b.v1)	
	Emission or Release Factor: Air	0,004 (FEICA 2.2a.v1)	
	initial release prior to RMM, . (FEICA 2.2a.v1)		
	Indoor use		
Technical conditions and measures at process level to prevent release Technical onsite conditions and		harge consistent with regulatory requirements. ross sites thus conservative process release	
measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site		Γ	
	Type of Sewage Treatment Plant	Municipal sewage treatment plant (FEICA 2.1b.v1)	
	Flow rate of sewage treatment plant effluent	2.000 m3/d (FEICA 2.1b.v1)	
	Degradation efficiency	96,2 % (FEICA 2.1b.v1)	
Conditions and measures related	Percentage removed from waste water	98 % (FEICA 2.1b.v1)	
to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant (FEICA 2.1c.v1, FEICA 2.2a.v1)	
	Flow rate of sewage treatment plant effluent	2.000 m3/d (FEICA 2.1c.v1, FEICA 2.2a.v1)	
	Degradation efficiency	96,2 % (FEICA 2.1c.v1, FEICA 2.2a.v1)	
	Percentage removed from waste water	95 % (FEICA 2.1c.v1, FEICA 2.2a.v1)	
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.	
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	or articles by tabletting, compression, extrusion or pelletisation	emissions occur. Limit the substance content in the product to 25 %.(PROC14)
	Laboratory activities	Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure.(PROC15)
	Disposal of wastes	Limit the substance content in the product to 1 %. Ensure operation is undertaken outdoors. Avoid carrying out operation for more than 15 minutes.(PROC3)
	Formulation Continuous process With sample collection	Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC2)
	Mixing operations Batch process With sample collection	Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC3)
	Formulation Batch process With sample collection	Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC3)
Conditions and measures related to personal protection, hygiene and health evaluation	Mixing operations (open systems) Batch process With sample collection	Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC4, PROC5)
	Bulk transfers Dedicated facility	Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC8b)
	Small package filling	Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC9)
	Production or preparation or articles by tabletting, compression, extrusion or pelletisation	Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC14)

3. Exposure estimation and reference to its source

Environment

FEICA SPERC 2.1b.v1: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
FEICA SPERC 2.1b.v1			Msafe	90647kg/day	
FEICA SPERC 2.1b.v1		Fresh water	exposure estimate	0,0000881mg/ L	0,01
FEICA SPERC 2.1b.v1		Fresh water sediment	exposure estimate	0,0228mg/kg dry weight (d.w.)	0,01
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FEICA SPERC 2.1b.v1	 Marine water	exposure estimate	0,0000074mg/ L	0,00847
FEICA SPERC 2.1b.v1	 Marine sediment	exposure estimate	0,00193mg/kg dry weight (d.w.)	0,00848
FEICA SPERC 2.1b.v1	 Sewage treatment plant (STP)	exposure estimate	< 0,001mg/L	< 0,001
FEICA SPERC 2.1b.v1	 Indirect exposure to humans via the environment	exposure estimate		0,000708
FEICA SPERC 2.1b.v1	 Agricultural soil	exposure estimate	0,0000799mg/ kg dry weight (d.w.)	0,000178
FEICA SPERC 2.1b.v1	 Air	exposure estimate	0,000982	

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC8b, PROC9, PROC15: ECETOC TRA model v2 PROC1, PROC2, PROC3, PROC4, PROC5, PROC8b, PROC9, PROC14, PROC15: Advanced REACH Tool (ART model) (inhalative exposure)

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1, PROC2		Worker - inhalative, long- term - systemic	0,01ppm	0,00947
PROC1, PROC3, PROC15		Worker - dermal, short- term - local	0,0250mg/cm2	0,155
PROC2		Worker - dermal, short- term - local	0,0999mg/cm2	0,621
PROC3		Worker - inhalative, long- term	0,250ppm	0,237
PROC4		Worker - inhalative, long- term	0,2ppm	0,189
PROC4, PROC8b		Worker - dermal, short- term - local	0,05mg/cm2	0,311
PROC5		Worker - inhalative, long- term	0,5ppm	0,474
PROC5		Worker - dermal, short- term - local	0,005mg/cm2	0,0311
PROC8b		Worker - inhalative, long- term	0,350ppm	0,332
PROC9, PROC14		Worker - inhalative, long- term	0,30ppm	0,284
PROC9		Worker - dermal, short-	0,03mg/cm2	0,186



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	term - local		
PROC14	 Worker - dermal, short- term - local	0,0150mg/cm2	0,0932
PROC15	 Worker - inhalative, long- term	1,50ppm	0,0251

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Health

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES



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1 Short title of Exposure				
. onore the of Exposure	e Scenario 9: Use in adhesiv	ves and sealants		
Main User Groups	SU 3: Industrial uses: Use sites	s of substances as such or in preparations at industria		
Process categories	 PROC1: Chemical production or refinery in closed process without likelihood exposure or processes with equivalent containment conditions PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparation: and articles (multistage and/ or significant contact) PROC7: Industrial spraying PROC8b: Transfer of substance or preparation (charging/ discharging) from/vessels/ large containers at dedicated facilities PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC15: Use as laboratory reagent 			
Environmental Release Categories	ERC5: Industrial use resul	ERC5: Industrial use resulting in inclusion into or onto a matrix		
2.1 Contributing scenario	o controlling environmental	exposure for: ERC5		
, FEICA spERC 5.1b.v1 ha		exposure for the environment. exposure for the environment.		
, FEICA spERC 5.2b.v1 ha	as been used to evaluate the as been used to evaluate the	exposure for the environment. exposure for the environment. sives & Sealants sector, please visit the website:		
, FEICA spERC 5.2b.v1 ha , For more information on	as been used to evaluate the as been used to evaluate the	exposure for the environment. exposure for the environment.		
, FEICA spERC 5.2b.v1 ha , For more information on	as been used to evaluate the as been used to evaluate the FEICA spERC from the Adhe Amounts used in the EU	exposure for the environment. exposure for the environment. sives & Sealants sector, please visit the website:		
, FEICA spERC 5.2b.v1 ha , For more information on	as been used to evaluate the as been used to evaluate the FEICA spERC from the Adhe Amounts used in the EU (tonnes/year) Fraction of EU tonnage	exposure for the environment. exposure for the environment. sives & Sealants sector, please visit the website:		
, FEICA spERC 5.2b.v1 ha , For more information on	Amounts used in the EU (tonnes/year) Fraction of EU tonnage used in region: Regional use tonnage	exposure for the environment. exposure for the environment. sives & Sealants sector, please visit the website: 800 1 200 (FEICA 5.1a.v1, FEICA 5.1b.v1, FEICA		
, FEICA spERC 5.2b.v1 ha , For more information on www.feica.eu.	Amounts used in the EU (tonnes/year) Fraction of EU tonnage used in region: Regional use tonnage (tons/year): Fraction of regional	exposure for the environment. exposure for the environment. sives & Sealants sector, please visit the website: 800 1 200 (FEICA 5.1a.v1, FEICA 5.1b.v1, FEICA 5.2a.v1, FEICA 5.2b.v1)		

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	tonnage used locally:		
	Maximum daily site tonnage (kg/day):	100 (FEICA 5.1a.v1)	
	Maximum daily site tonnage (kg/day):	800 (FEICA 5.1b.v1)	
	Maximum daily site tonnage (kg/day):	600 (FEICA 5.2a.v1)	
	Maximum daily site tonnage (kg/day):	909 (FEICA 5.2b.v1)	
	Annual site tonnage	22 (FEICA 5.1a.v1)	
	Annual site tonnage	176 (FEICA 5.1b.v1)	
	Annual site tonnage	132 (FEICA 5.2a.v1)	
	Annual site tonnage	200 (FEICA 5.2b.v1)	
	Flow rate of receiving surface water	18.000 m3/d	
Environment factors not influenced by risk management	Dilution Factor (River)	10	
initiation by hist management	Dilution Factor (Coastal Areas)	100	
	Continuous release		
	Number of emission days per year	220	
	Emission or Release Factor: Air	0,009 (FEICA 5.1b.v1)	
Other given operational	initial release prior to RMM, . (FEICA 5.1b.v1)		
conditions affecting environmental exposure	Emission or Release Factor: Air	0,017 (FEICA 5.1b.v1)	
	initial release prior to RMM	, . (FEICA 5.1b.v1)	
	Emission or Release Factor: Air	0,2 (FEICA 5.2a.v1, FEICA 5.2b.v1)	
	initial release prior to RMM	, . (FEICA 5.2a.v1, FEICA 5.2b.v1)	
	Indoor or outdoor use		
Technical conditions and measures at process level to prevent release		charge consistent with regulatory requirements. ross sites thus conservative process release	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site			
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant	
to sewaye treatment plant	Flow rate of sewage	2.000 m3/d	
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	treatment plant effluent	
	Degradation efficiency	96,2 %
	Percentage removed from waste water	96,2 %
	Type of Sewage Treatment Plant	Municipal sewage treatment plant (FEICA 5.2a.v1, FEICA 5.2b.v1)
	Flow rate of sewage treatment plant effluent	2.000 m3/d (FEICA 5.2a.v1, FEICA 5.2b.v1)
	Degradation efficiency	96,2 % (FEICA 5.2a.v1, FEICA 5.2b.v1)
	Percentage removed from waste water	80 % (FEICA 5.2a.v1, FEICA 5.2b.v1)
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	Recovery Methods	External recovery and recycling of waste should comply with applicable local and/or national regulations.
2.2 Contributing scenario co PROC5, PROC7, PROC8b		re for: PROC1, PROC2, PROC3, PROC4, DC15
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	0,5 - 10 kPa
Frequency and duration of use	Covers daily exposures up	to 8 hours
Human factors not influenced by	Assumes activities are at a	
risk management	Assumes a good basic star	ndard of occupational hygiene is implemented.
	General exposures Closed systems	Handle substance within a closed system. Store substance within a closed system. Limit the substance content in the product to 25 %.(PROC1)
Technical conditions and measures to control dispersion from source towards the worker	Continuous process Closed systems	Provide extract ventilation to points where emissions occur. Limit the substance content in the product to 25 %.(PROC2)
	Mixing operations Batch process	Provide extract ventilation to points where emissions occur. Limit the substance content in the product to 25 %.(PROC3)
	Batch process	Provide extract ventilation to points where emissions occur. Limit the substance content in the product to 25
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		%.(PROC3)
	Mixing operations (open systems) Batch process	Provide extract ventilation to points where emissions occur. Limit the substance content in the product to 25 %.(PROC4, PROC5)
	Spraying	Limit the substance content in the product to 25 %. Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.(PROC7)
	Material transfers Dedicated facility	Provide extract ventilation to material transfer points and other openings. Limit the substance content in the product to 25 %.(PROC8b)
	Equipment cleaning and maintenance	Drain down system prior to equipment break-in or maintenance. Limit the substance content in the product to 5 %. Provide extract ventilation to material transfer points and other openings. Avoid carrying out operation for more than 15 minutes.(PROC8b)
	Roller, spreader, flow application	Provide extract ventilation to points where emissions occur. Limit the substance content in the product to 25 %.(PROC10)
	Dipping, immersion and pouring	Limit the substance content in the product to 25 %. Provide extract ventilation to points where emissions occur.(PROC13)
	Laboratory activities	Limit the substance content in the product to 25 %. Handle in a fume cupboard or under extract ventilation.(PROC15)
	Disposal of wastes	Limit the substance content in the product to 1 %. Ensure operation is undertaken outdoors. Avoid carrying out operation for more than 15 minutes.(PROC3)
	Mixing operations Batch process	Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC3)
	Batch process	Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC3)
Conditions and measures related to personal protection, hygiene and health evaluation	Mixing operations (open systems) Batch process	Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC4, PROC5)
	Spraying	Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC7)
	Material transfers Dedicated facility	Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC8b)

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Roller, spreader, flow application	Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC10)
Dipping, immersion and pouring	Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC13)
Laboratory activities	Wear chemically resistant gloves. Use suitable eye protection.(PROC15)

3. Exposure estimation and reference to its source

Environment

FEICA SPERC 5.1a.v1: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
FEICA SPERC 5.1a.v1			Msafe	90647kg/day	
FEICA SPERC 5.1a.v1		Fresh water	exposure estimate	0,0000881mg/ L	0,01
FEICA SPERC 5.1a.v1		Fresh water sediment	exposure estimate	0,0228mg/kg dry weight (d.w.)	0,01
FEICA SPERC 5.1a.v1		Marine water	exposure estimate	0,0000074mg/ L	0,00847
FEICA SPERC 5.1a.v1		Marine sediment	exposure estimate	0,00193mg/kg dry weight (d.w.)	0,00848
FEICA SPERC 5.1a.v1		Sewage treatment plant (STP)	exposure estimate	< 0,001mg/L	< 0,001
FEICA SPERC 5.1a.v1		Indirect exposure to humans via the environment	exposure estimate		0,000708
FEICA SPERC 5.1a.v1		Agricultural soil	exposure estimate	0,000118mg/k g dry weight (d.w.)	0,000262
FEICA SPERC 5.1a.v1		Air	exposure estimate	0,00144	

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8b, PROC10, PROC13, PROC15: Advanced REACH Tool (ART model) (inhalative exposure)

PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8b, PROC10, PROC13, PROC15: ECETOC TRA model v2

Contributing Specific conditions Scenario	Exposure routes	Level of Exposure	RCR
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PROC1		Worker - inhalative, long- term - systemic		
PROC1		Worker - dermal, short- term - local	0,0150mg/cm2	0,0932
PROC2, PROC15		Worker - inhalative, long- term	0,6ppm	0,568
PROC2		Worker - dermal, short- term - local	0,006mg/cm2	0,0373
PROC4		Worker - inhalative, long- term	0,2ppm	0,189
PROC3		Worker - inhalative, long- term	0,150ppm	0,142
PROC3		Worker - dermal, short- term - local	0,00150mg/cm2	0,00932
PROC4		Worker - inhalative, long- term	0,120ppm	0,114
PROC4, PROC8b, PROC13		Worker - dermal, short- term - local	0,03mg/cm2	0,186
PROC5		Worker - inhalative, long- term	0,3ppm	0,284
PROC5		Worker - dermal, short- term - local	0,003mg/cm2	0,0186
PROC7		Worker - inhalative, long- term	0,750ppm	0,710
PROC7		Worker - dermal, short- term - local	0,0941mg/cm2	0,582
PROC8b		Worker - inhalative, long- term	0,09ppm	0,0853
PROC10, PROC13		Worker - inhalative, long- term	0,30ppm	0,284
PROC10		Worker - dermal, short- term - local	0,06mg/cm2 0,373	
PROC13		Worker - dermal, short- term - local	0,0150mg/cm2	0,0932
PROC15		Worker - dermal, short- term - local	0,0003mg/cm2	0,00186

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

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Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-forindustries-libraries.html).

Health

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES



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Main User Groups		SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)		
Process categories	exposure or processes with PROC2: Use in closed, co PROC3: Manufacture or fo processes with occasional containment condition PROC4: Use in batch and exposure arises PROC5: Mixing or blendin and articles (multistage and PROC8a: Transfer of subs vessels/ large containers a PROC8b: Transfer of subs vessels/ large containers a PROC10: Roller applicatio PROC11: Non industrial sp	stance or preparation (charging/ discharging) from/ to t non-dedicated facilities stance or preparation (charging/ discharging) from/ to t dedicated facilities on or brushing praying ticles by dipping and pouring		
Environmental Release Categories		ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix		
2.1 Contributing scenar	rio controlling environmental	exposure for: ERC8a, ERC8f		
, FEICA spERC 8c.1b.v1 , FEICA spERC 8c.2a.v1 , FEICA spERC 8c.2b.v1 , FEICA spERC 8f.1.v1 h , FEICA spERC 8f.2.v1 h	has been used to evaluate the has been used to evaluate the has been used to evaluate the has been used to evaluate the as been used to evaluate the as been used to evaluate the e			
	Amounts used in the EU (tonnes/year)	1200		
		1200 0,1		
Amount used	(tonnes/year) Fraction of EU tonnage			
Amount used	(tonnes/year) Fraction of EU tonnage used in region: Regional use tonnage	0,1 20 (FEICA 8c.2b.v1, FEICA 8f.1.v1, FEICA 8f.2.v1,		



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Maximum daily site tonnage (kg/day): 0.1096 (FEICA 8c.2b.v1, FEICA 8f.1.v1, FEICA 8f.2.v1, FEICA 8c.1b.v1, FEICA 8c.2a.v1) Annual site tonnage 0.04 (FEICA 8c.2b.v1, FEICA 8c.1b.v1, FEICA 8c.2a.v1) Environment factors not influenced by risk management Flow rate of receiving surface water 18.000 m3/d Dilution Factor (River) 10 Dilution Factor (Coastal Areas) 100 Wide dispersive use Number of emission days per year 365 Emission or Release Factor: Air 0.01 (FEICA 8c.2b.v1, FEICA 8f.2.v1, FEICA 8c. 2a.v1) FEICA 8c.2b.v1, FEICA 8f.2.v1, FEICA 8c. 2a.v1) Initial release prior to RMM, . (FEICA 8c.2b.v1, FEICA 8f.2.v1, FEICA 8c. 2a.v1) FEICA 8c. 2b.v1, FEICA 8c. 2b.v1, FEICA 8c. 2a.v1) FEICA 8c. 2b.v1, FEICA 8c. 2b.v			
Environment factors not influenced by risk management Flow rate of receiving surface water 18.000 m3/d Environment factors not influenced by risk management Flow rate of receiving surface water 18.000 m3/d Dilution Factor (River) 10 Dilution Factor (Coastal Areas) 100 Wide dispersive use 100 Number of emission days per year 365 Emission or Release environmental exposure 0.98 (FEICA 8c.2b.v1, FEICA 8f.2.v1, FEICA 8c. emission or Release Factor: Air 0.90 (FEICA 8c.2b.v1, FEICA 8f.2.v1, FEICA 8c. 2.v1) Technical conditions and measures to reduce or limit discharges, air emissions and releases to soil Prevent environmental discharge consistent with regulatory requirements Common practices vary across sites thus conservative process release estimates used. Technical conditions and measures to reduce or limit discharges, air emissions and releases to soil Prevent environmental discharge consistent with regulatory requirements Common practices vary across sites thus conservative process release estimates used. Conditions and measures to prevent/limit release from the site Type of Sewage Treatment Plant Municipal sewage treatment plant Flow rate of sewage treatment plant effluent 2.000 m3/d Organizational measures to prevent limit release from the site Flow rate of sewage Treatment Plant 2.000 m3/d			
Environment factors not influenced by risk management surface water 18.000 m3/d Dilution Factor (River) 10 Dilution Factor (Coastal Areas) 100 Wide dispersive use 100 Number of emission days per year 365 Emission or Release environmental exposure 0.98 (FEICA 8c.2b.v1, FEICA 8f.2.v1, FEICA 8f.2.v1, FEICA 8c.2b.v1, FEICA 8f.2.v1, FEICA 8c.2a.v1) Initial release prior to RMM, . (FEICA 8c.1b.v1, FEICA 8f.2.v1, FEICA 8c.2a.v1) initial release prior to RMM, . (FEICA 8c.1b.v1, FEICA 8f.2.v1, FEICA 8c.2a.v1) Initial release prior to RMM, . (FEICA 8c.1b.v1, FEICA 8f.2.v1, FEICA 8c.2a.v1) initial release prior to RMM, . (FEICA 8f.1.v1, FEICA 8f.2.v1, FEICA 8c.2a.v1) Initial release prior to RIMM, . (FEICA 8f.1.v1, FEICA 8f.2.v1, FEICA 8c.2a.v1) initial release prior to RMM, . (FEICA 8f.1.v1, FEICA 8f.2.v1, FEICA 8c.2a.v1) Indoor or outdoor use Prevent environmental discharge consistent with regulatory requirements Common practices vary across sites thus conservative process release estimates used. Organizational measures to prevent/limit release from the site Type of Sewage Treatment Plant Municipal sewage treatment plant Flow rate of sewage treatment plant effluent 2.000 m3/d 2.000 m3/d			
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Other given operational conditions affecting environmental exposure Factor: Air 8c.2a.v1) initial release prior to RMM, . (FEICA 8c.2b.v1, FEICA 8f.2.v1, FEICA 8c.2a.v1) Emission or Release Factor: Water 0,01 (FEICA 8f.1.v1, FEICA 8f.2.v1, FEICA 8c.2a.v1) initial release prior to RMM, . (FEICA 8f.1.v1, FEICA 8f.2.v1, FEICA 8c.2a.v1) initial release prior to RMM, . (FEICA 8f.1.v1, FEICA 8f.2.v1, FEICA 8c.2a.v1) Indoor or outdoor use Prevent environmental discharge consistent with regulatory requirements Common practices vary across sites thus conservative process release estimates used. Technical conditions and measures to prevent release to soil Prevent environmental discharge consistent with regulatory requirements Common practices vary across sites thus conservative process release estimates used. Conditions and measures to prevent/limit release from the site Type of Sewage Treatment Plant Municipal sewage treatment plant Flow rate of sewage treatment plant Flow rate of sewage treatment plant effluent 2.000 m3/d Degradation efficiency 96,2 %			
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itom waste water			
Conditions and measures related to external treatment of waste for disposal Waste treatment waste for disposal Waste treatment waste for disposal waste treatment waste treatment waste treatment waste for disposal waste treatment with applicable local and/or national regulations.	buld		
Conditions and measures related to external recovery of waste Recovery Methods Recovery Methods External recovery and recycling of waste show comply with applicable local and/or national regulations.	ould		



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	Concentration of the Substance in	Covers percentage substance in the product up to 100 %.	
Product characteristics	Mixture/Article Physical Form (at time of use)	liquid	
	Vapour pressure	0,5 - 10 kPa	
Frequency and duration of use	Covers daily exposures up to 8 hours		
Human factors not influenced by	Assumes activities are at ambient temperature.		
risk management	Assumes a good basic stat	ndard of occupational hygiene is implemented.	
Technical conditions and measures to control dispersion from source towards the worker	General exposures Closed systems	Handle substance within a closed system. Store substance within a closed system. Limit the substance content in the product to 25 %.(PROC1)	
	Continuous process Closed systems	Limit the substance content in the product to 25 %. Handle in a fume cupboard or under extract ventilation.(PROC2)	
	Mixing operations Batch process	Limit the substance content in the product to 25 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC3)	
	Batch process	Limit the substance content in the product to 25 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC3)	
	Mixing operations (open systems) Batch process	Limit the substance content in the product to 25 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC4, PROC5)	
	Spraying	Limit the substance content in the product to 25 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC11)	
	Material transfers Dedicated facility	Limit the substance content in the product to 25 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC8b)	
	Equipment cleaning and maintenance	Provide extract ventilation to material transfer point and other openings. Avoid carrying out operation for more than 15 minutes. Limit the substance content in the product to 25 %.(PROC8b)	
	Roller, spreader, flow application	Limit the substance content in the product to 25 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC10)	
	Dipping, immersion and	Limit the substance content in the product to 25 %.	


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	pouring	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC13)
	Laboratory activities	Limit the substance content in the product to 25 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC15)
	Material transfers Non-dedicated facility	Limit the substance content in the product to 25 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC8a)
	Equipment cleaning and maintenance Non-dedicated facility	Limit the substance content in the product to 25 %. Ensure operation is undertaken outdoors. Avoid carrying out operation for more than 15 minutes.(PROC8a)
	Batch process	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection.(PROC3)
	Mixing operations (open systems) Batch process	Wear chemically resistant gloves. Use suitable eye protection.(PROC4, PROC5)
	Spraying	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection. Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC11)
	Material transfers Dedicated facility	Wear chemically resistant gloves. Use suitable eye protection.(PROC8b)
Conditions and measures related to personal protection, hygiene and health evaluation	Equipment cleaning and maintenance	Wear chemically resistant gloves. Use suitable eye protection.(PROC8b)
	Roller, spreader, flow application	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection.(PROC10)
	Dipping, immersion and pouring	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection.(PROC13)
	Material transfers Non-dedicated facility	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection.(PROC8a)
	Equipment cleaning and maintenance Non-dedicated facility	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection. Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC8a)
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3. Exposure estimation and reference to its source

Environment

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FEICA SPERC 8f.1.v1: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
FEICA SPERC 8f.1.v1			Msafe	10,55kg/day	
FEICA SPERC 8f.1.v1		Fresh water	exposure estimate	0,0000913mg/ L	0,0104
FEICA SPERC 8f.1.v1		Fresh water sediment	exposure estimate	0,0236mg/kg dry weight (d.w.)	0,0104
FEICA SPERC 8f.1.v1		Marine water	exposure estimate	0,0000078mg/ L	0,00883
FEICA SPERC 8f.1.v1		Marine sediment	exposure estimate	0,00201mg/kg dry weight (d.w.)	0,00884
FEICA SPERC 8f.1.v1		Sewage treatment plant (STP)	exposure estimate	0,0000314mg/ L	0,000005
FEICA SPERC 8f.1.v1		Indirect exposure to humans via the environment	exposure estimate		0,000708
FEICA SPERC 8f.1.v1		Agricultural soil	exposure estimate	0,0000810mg/ kg dry weight (d.w.)	0,000755
FEICA SPERC 8f.1.v1		Air	exposure estimate	0,0000722	

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15: Advanced REACH Tool (ART model) (inhalative exposure) PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Worker - inhalative, long- term	0,006ppm	0,00568
PROC1, PROC3		Worker - dermal, short- term - local	0,0150mg/cm2	0,0932
PROC2, PROC3		Worker - inhalative, long- term	0,110ppm	0,0184
PROC2, PROC5, PROC8a, PROC8b, PROC10, PROC13		Worker - dermal, short- term - local	0,06mg/cm2	0,373
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PROC4	 Worker - inhalative, long- term	0,210ppm	0,0351
PROC4	 Worker - dermal, short- term - local	0,03mg/cm2	0,186
PROC5	 Worker - inhalative, long- term	0,760mg/cm2	0,127
PROC8a, PROC8b	 Worker - inhalative, long- term	2,20ppm	0,368
PROC10	 Worker - inhalative, long- term	0,910mg/cm2	0,152
PROC11	 Worker - inhalative, long- term 0,210ppm 0		0,351
PROC11	 Worker - dermal, short- term - local	0,0941mg/cm2	0,582
PROC13	 Worker - inhalative, long- term	0,650ppm	0,109
PROC15	 Worker - inhalative, long- term 1,0mg/cm2 0,167		0,167
PROC15	 Worker - dermal, short- term - local	0,0150mg/cm2	0,0932

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-forindustries-libraries.html).

Health

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES



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1. Short title of Exposure Scenario 11: Use in coatings Main User Groups SU 21: Consumer uses: Private households (= general public = consumers) PC9a: Coatings and paints, thinners, paint removers PC9b: Fillers, putties, plasters, modelling clay Chemical product category PC9c: Finger paints PC18: Ink and toners **Environmental Release** ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems Categories Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk Activity and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities. 2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d Substance is complex UVCB, Non-hydrophobic. , Readily biodegradable. , ESVOC spERC 8.3c.v1 has been used to evaluate the exposure for the environment. , For more information on ESVOC spERC from the Solvents sector, please visit the website: www.esig.org. Concentration of the Covers percentage substance in the product up to Product characteristics Substance in 20 %. Mixture/Article Amounts used in the EU 100 (tonnes/year) Fraction of EU tonnage 0.1 used in region: Regional use tonnage 10 (tons/year): Amount used Fraction of regional 0.0005 tonnage used locally: Maximum daily site 0,0137 tonnage (kg/day): Annual site tonnage 0,005 Flow rate of receiving 18.000 m3/d surface water Environment factors not **Dilution Factor (River)** 10 influenced by risk management **Dilution Factor (Coastal** 100 Areas) Wide dispersive use Other given operational conditions affecting Number of emission days 365 environmental exposure per year ΕN P8886 65/150



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requency and duration of use	Frequency of use	6 days/year
	F	6 daya/yaar
Frequency and duration of use	Frequency of use	1 Times per day
Amount used	Amount used per event	744 g
	Vapour pressure	519 Pa
Product characteristics	Physical Form (at time of use)	liquid
	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 0% - 0,25%
2.2 Contributing scenario co water borne paint	ntrolling consumer expo	osure for: PC9a: Solvent rich, high solid,
Conditions and measures related to external recovery of waste	Recovery Methods	External recovery and recycling of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
	Percentage removed from waste water	96,2 %
to sewage treatment plant	Degradation efficiency	96,2 %
Conditions and measures related	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Type of Sewage Treatment Plant	Municipal sewage treatment plant
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site		
Technical conditions and measures at process level to prevent release		charge consistent with regulatory requirements. ross sites thus conservative process release
	Indoor or outdoor use	y •
	Emission or Release Factor: Soil initial release prior to RMM	0,005
	initial release prior to RMM	,. I
	Emission or Release Factor: Water	0,01
	initial release prior to RMM	, .
	Emission or Release Factor: Air	0,985



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	Exposure duration per event	2,20 h		
Human factors not influenced by risk management	Exposed skin area	Covers skin contact area up to 428,75 cm ²		
Other given operational conditions affecting consumers exposure	Room size	20 m3		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal	No specific risk manageme conditions stated.	ent measure identified beyond those operational		
protection and hygiene)				
2.3 Contributing scenario co		osure for: PC9a: Aerosol spray can		
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	519 Pa		
Amount used	Amount used per event	215 g		
	Frequency of use	1 Times per day		
Frequency and duration of use	Frequency of use	2 days/year		
	Exposure duration per event	0,3 h		
Other given operational conditions affecting consumers exposure	Covers use in a one car ga	rage (34 m3) under typical ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal	No specific risk management measure identified beyond those operational conditions stated.			
protection and hygiene)				
2.4 Contributing scenario co paper-, sealant-remover)	ntrolling consumer expo	osure for: PC9a: Removers (paint-, glue-, wal		
, , ,	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 0% - 0,25%		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	519 Pa		
Amount used	Amount used per event	491 g		
	Frequency of use	1 Times per day		
Frequency and duration of use	Frequency of use	3 days/year		
	Exposure duration per event	2,0 h		
	event			



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Human factors not influenced by risk management	Exposed skin area	Covers skin contact area up to 857,50 cm ²		
Other given operational	Room size	20 m3		
conditions affecting consumers				
exposure Conditions and measures related	No oposifio riek monogomo	ant managura identified beyond these appretional		
to protection of consumer (e.g.	conditions stated.	ent measure identified beyond those operational		
behavioural advice, personal				
protection and hygiene)		eaver for DOOL Fillers and mutter		
2.5 Contributing scenario co		osure for: PC9b: Fillers and putty		
	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 0% - 0,25%		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	519 Pa		
Amount used	Amount used per event	85 g		
	Frequency of use	1 Times per day		
Frequency and duration of use	Frequency of use	12 days/year		
	Exposure duration per event	4,0 h		
Human factors not influenced by risk management	Exposed skin area	Covers skin contact area up to 35,70 cm ²		
Other given operational	Room size	20 m3		
conditions affecting consumers exposure				
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal	No specific risk management measure identified beyond those operational conditions stated.			
protection and hygiene)				
2.6 Contributing scenario co		osure for: PC9b: Plasters and floor equalizers		
	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 0% - 0,1%		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	519 Pa		
Amount used	Amount used per event	13800 g		
	Frequency of use	1 Times per day		
Frequency and duration of use	Frequency of use	12 days/year		
	Exposure duration per event	2,0 h		
Human factors not influenced by	Exposed skin area	Covers skin contact area up to 857,50 cm ²		
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Other given operational	Room size 20 m3		
conditions affecting consumers	Room size	20113	
exposure			
Conditions and measures related		ent measure identified beyond those operational	
to protection of consumer (e.g. behavioural advice, personal	conditions stated.		
protection and hygiene)			
2.7 Contributing scenario co	ntrolling consumer expo	osure for: PC9b: Modelling clay	
	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 0% - 0,25%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	519 Pa	
Amount used	Amount used per event	1 g	
Francisco en el el la	Frequency of use	1 Times per day	
Frequency and duration of use	Frequency of use	365 days/year	
Human factors not influenced by risk management	Exposed skin area	Covers skin contact area up to 254,40 cm ²	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal	No specific risk management measure identified beyond those operational conditions stated.		
protection and hygiene)			
2.8 Contributing scenario co	ntrolling consumer expo	osure for: PC9c: Finger paints	
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 0,2%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	519 Pa	
Amount used	Amount used per event	1,35 g	
	Frequency of use	1 Times per day	
Frequency and duration of use	Frequency of use	365 days/year	
Human factors not influenced by risk management	Exposed skin area Covers skin contact area up to 254,40 cm ²		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal	No specific risk management measure identified beyond those operational conditions stated.		
protection and hygiene)			
2.9 Contributing scenario co	ntrolling consumer expo	osure for: PC18	
Product characteristics	Concentration of the Substance in	Concentration of substance in product: 0% - 0,25%	
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	Mixture/Article			
	Physical Form (at time of use)	liquid		
	Vapour pressure	519 Pa		
Amount used	Amount used per event	40 g		
	Frequency of use	1 Times per day		
Frequency and duration of use	Frequency of use	365 days/year		
	Exposure duration per event	2,20 h		
Human factors not influenced by risk management	Exposed skin area	Covers skin contact area up to 71,40 cm ²		
Other given operational	Room size	20 m3		
conditions affecting consumers exposure				
Conditions and measures related to protection of consumer (e.g.	d No specific risk management measure identified beyond those operational conditions stated.			
behavioural advice, personal protection and hygiene)				

3. Exposure estimation and reference to its source

Environment

ESVOC SPERC 8.3c.v1: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ESVOC SPERC 8.3c.v1		Fresh water	exposure estimate	0,0000892mg/ L	0,0101
ESVOC SPERC 8.3c.v1		Fresh water sediment	exposure estimate	0,0230mg/kg dry weight (d.w.)	0,0101
ESVOC SPERC 8.3c.v1		Marine water	exposure estimate	0,0000075mg/ L	0,00857
ESVOC SPERC 8.3c.v1		Marine sediment	exposure estimate	0,00195mg/kg dry weight (d.w.)	0,00858
ESVOC SPERC 8.3c.v1		Sewage treatment plant (STP)	exposure estimate	< 0,0001mg/L	< 0,0001
ESVOC SPERC 8.3c.v1		Indirect exposure to humans via the environment	exposure estimate		0,000708
ESVOC SPERC 8.3c.v1		Agricultural soil	exposure estimate	0,0000104mg/ kg dry weight (d.w.)	0,000071

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SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006 Turpentine Version 2.0 Print Date 06.11.2018 Revision date / valid from 06.11.2018 ESVOC SPERC asc v1 Air exposure setimate 0.0000743 Consumers ECETIC TRA consumer v3. 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario Environment Environment v3. 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario Environment Geline appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Forture removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Forture removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Forture removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Forture removal efficiency for air can be achieved using onsite fof tactol					BRENNT	AG
Version 2.0 Print Date 06.11.2018 Revision date / valid from 06.11.2018 Print Date 06.11.2018 ESVOC SPERC 8.3c.v1 Air exposure estimate 0,0000743 Consumers ECETOC TRA consumer v3. 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario Environment Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for- industries-libraries.html). Health Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. For further information on the assessment method, see: http://www.ecetoc.org/tra Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are	SAFETY D	ATA SHEET acco	ording to Regu	lation (EC)	No. 1907/2	006
Revision date / valid from 06.11.2018 ESVOC SPERC Air exposure estimate 0,0000743 Consumers ECETOC TRA consumer v3. 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario Environment Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html). Health Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. For further information on the assessment method, see: http://www.ecetoc.org/tra Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are	Turpentine)				
ESVOC SPERC Air exposure estimate 0,0000743 S.3c.v1 estimate 0,0000743 Consumers ECETOC TRA consumer v3. 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario Environment Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for- industries-libraries.html). Health Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. For further information on the assessment method, see: http://www.ecetoc.org/tra Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are	Version 2.0				Print Da	te 06.11.2018
8.3c.v1 Air estimate 0,0000743 Consumers ECETOC TRA consumer v3. 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario Environment Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using on-site technologies, either alone or in combination. Ruther details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html). Health Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. For further information on the assessment method, see: http://www.ecetoc.org/tra Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are	Revision date	/ valid from 06.11.20	18			
8.3c.v1 All estimate 0,0000743 Consumers ECETOC TRA consumer v3. 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario Environment Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html). Health Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. For further information on the assessment method, see: http://www.ecetoc.org/tra Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are	ESVOC SPERC			exposure	0.0000740	
 ECETOC TRA consumer v3. 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario Environment Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html). Health Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. For further information on the assessment method, see: http://www.ecetoc.org/tra Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are 			Air		0,0000743	
4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario Environment Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html). Health Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. For further information on the assessment method, see: http://www.ecetoc.org/tra Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are						
 Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html). Health Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. For further information on the assessment method, see: http://www.ecetoc.org/tra Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are 	4. Guidance t	o Downstream User to	o evaluate whethe	r he works insi	de the boundar	ies set by the
P8886 71/150 EN	Guidance is ba be necessary to Required remo combination. Required remo Further details industries-librat Health Where other ris are managed to For further info Only properly to within the boun	o define appropriate site-s val efficiency for wastewa val efficiency for air can b on scaling and control teo ries.html). sk management measures o at least equivalent levels rmation on the assessmen rained persons shall make	specific risk managem ter can be achieved u e achieved using on-s chnologies are provide s/operational condition s. Int method, see: http:// e use of scaling metho	ent measures. using onsite/offsite site technologies, ed in SpERC facts ns are adopted, th www.ecetoc.org/t	e technologies, eith either alone or in o heet (http://cefic.o en users should e ra	her alone or in combination. arg/en/reach-for- nsure that risks and RMM are



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	enario 12: Use in adhesi			
Main User Groups		ivate households (= general public = consumers)		
Chemical product category	PC1: Adhesives, sealants	dear use resulting in inclusion into ar anto a matrix		
Environmental Release Categories	ERC8f: Wide dispersive ou	door use resulting in inclusion into or onto a matrix tdoor use resulting in inclusion into or onto a matrix		
Activity	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.			
2.1 Contributing scenario co	ontrolling environmental	exposure for: ERC8c, ERC8f		
, FEICA spERC 8c.1b.v1 has , FEICA spERC 8c.2a.v1 has , FEICA spERC 8c.2b.v1 has , FEICA spERC 8f.1.v1 has be , FEICA spERC 8f.2.v1 has be	been used to evaluate the been used to evaluate the been used to evaluate the een used to evaluate the e een used to evaluate the e			
	Amounts used in the EU (tonnes/year)	1200		
	Fraction of EU tonnage used in region:	0,1		
Amount used	Regional use tonnage (tons/year):	20 (FEICA 8f.1.v1, FEICA 8f.2.v1, FEICA 8c.1a.v1, FEICA 8c.1b.v1, FEICA 8c.2a.v1)		
Amount used	Fraction of regional tonnage used locally:	0,002 (FEICA 8f.1.v1, FEICA 8f.2.v1, FEICA 8c.1a.v1, FEICA 8c.1b.v1, FEICA 8c.2a.v1)		
	Maximum daily site tonnage (kg/day):	0,1096 (FEICA 8f.1.v1, FEICA 8f.2.v1, FEICA 8c.1a.v1, FEICA 8c.1b.v1, FEICA 8c.2a.v1)		
	Annual site tonnage	0,04 (FEICA 8f.1.v1, FEICA 8f.2.v1, FEICA 8c.1a.v1, FEICA 8c.1b.v1, FEICA 8c.2a.v1)		
	Flow rate of receiving surface water	18.000 m3/d		
Environment factors not influenced by risk management	Dilution Factor (River)	10		
macheed by nor management	Dilution Factor (Coastal Areas)	100		
	Wide dispersive use			
Other given operational				
Other given operational conditions affecting environmental exposure	Number of emission days per year	365		



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	[
	Emission or Release Factor: Air	0,98 (FEICA 8c.2b.v1, FEICA 8f.2.v1, FEICA 8c.2a.v1)
	initial release prior to RMM	, . (FEICA 8c.2b.v1, FEICA 8f.2.v1, FEICA 8c.2a.v1)
	Emission or Release Factor: Water	0,01 (FEICA 8f.1.v1, FEICA 8f.2.v1, FEICA 8c.1a.v1, FEICA 8c.1b.v1, FEICA 8c.2a.v1)
	initial release prior to RMM FEICA 8c.1b.v1, FEICA 8c	, . (FEICA 8f.1.v1, FEICA 8f.2.v1, FEICA 8c.1a.v1, .2a.v1)
	Emission or Release Factor: Soil	0
	initial release prior to RMM	, .
	Indoor or outdoor use	
Technical conditions and measures at process level to prevent release		charge consistent with regulatory requirements. ross sites thus conservative process release
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site		
	Type of Sewage Treatment Plant	Municipal sewage treatment plant
Conditions and measures related	Flow rate of sewage treatment plant effluent	2.000 m3/d
to sewage treatment plant	Degradation efficiency	96,2 %
	Percentage removed from waste water	96,2 %
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	Recovery Methods	External recovery and recycling of waste should comply with applicable local and/or national regulations.
2.2 Contributing scenario co	ntrolling consumer expo	osure for: PC1
	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 0% - 0,25%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	519 Pa
Amount used	Amount used per event	15000 g
Fraguanay and duration of use	Frequency of use	1 Times per day
Frequency and duration of use	Frequency of use	1 days/year



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	Exposure duration per event	6,0 h	
Human factors not influenced by risk management	Exposed skin area	Covers skin contact area up to 428,80 cm ²	
Other given operational conditions affecting consumers	Room size	20 m3	
exposure			
Conditions and measures related to protection of consumer (e.g.	No specific risk management measure identified beyond those operational conditions stated.		
behavioural advice, personal protection and hygiene)			

3. Exposure estimation and reference to its source

Environment

FEICA SPERC 8c.1a.v1: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
FEICA SPERC 8c.1a.v1		Fresh water	exposure estimate	0,000913mg/L	0,0104
FEICA SPERC 8c.1a.v1		Fresh water sediment	exposure estimate	0,0236mg/kg dry weight (d.w.)	0,0104
FEICA SPERC 8c.1a.v1		Marine water	exposure estimate	0,0000075mg/ L	0,00854
FEICA SPERC 8c.1a.v1		Marine sediment	exposure estimate	0,0201mg/kg dry weight (d.w.)	0,00883
FEICA SPERC 8c.1a.v1		Sewage treatment plant (STP)	exposure estimate	0,0000314mg/ L	0,000005
FEICA SPERC 8c.1a.v1		Indirect exposure to humans via the environment	exposure estimate		0,000708
FEICA SPERC 8c.1a.v1		Agricultural soil	exposure estimate	0,0000810mg/ kg dry weight (d.w.)	0,000755
FEICA SPERC 8c.1a.v1		Air	exposure estimate	0,0000722	

Consumers

PC1: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR	
PC1		Consumer - inhalative,	0,291ppm	0,411	
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	long-term - systemic	
4. Guidance to Downstream User Exposure Scenario	to evaluate whether he we	orks inside the boundaries set by the
be necessary to define appropriate site. Required removal efficiency for wastew combination. Required removal efficiency for air can Further details on scaling and control te industries-libraries.html). Health Where other risk management measure are managed to at least equivalent leve For further information on the assessme Only properly trained persons shall mal within the boundaries set by the ES	-specific risk management meavater can be achieved using on be achieved using on-site tech echnologies are provided in Sp es/operational conditions are a els. ent method, see: http://www.eck ke use of scaling methods whil	nsite/offsite technologies, either alone or in hnologies, either alone or in combination. DERC factsheet (http://cefic.org/en/reach-for- adopted, then users should ensure that risks cetoc.org/tra le checking whether the OC and RMM are
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1. Short title of Exposure	Scenario 13: Formulation of solvents
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU 10: Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)
Process categories	 PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent
Environmental Release Categories	ERC2: Formulation of preparations
Activity	Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

2.1 Contributing scenario controlling environmental exposure for: ERC2

Substance is complex UVCB, Non-hydrophobic.

, Readily biodegradable.

, ESVOC spERC 2.2.v1 has been used to evaluate the exposure for the environment.

, ESVOC spERC 4.3a.v1 has been used to evaluate the exposure for the environment.

, For more information on ESVOC spERC from the Solvents sector, please visit the website: www.esig.org.

Amount used	Amounts used in the EU (tonnes/year)	200
	Fraction of EU tonnage used in region:	1
	Regional use tonnage (tons/year):	200

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	Fraction of regional tonnage used locally:	1
	Maximum daily site tonnage (kg/day):	667
	Annual site tonnage	200
	Flow rate of receiving surface water	18.000 m3/d
Environment factors not influenced by risk management	Dilution Factor (River)	10
micensed by normanagement	Dilution Factor (Coastal Areas)	100
	Continuous release	
	Number of emission days per year	300
	Emission or Release Factor: Air	0,01
Other given operational	initial release prior to RMM	,.
conditions affecting environmental exposure	Emission or Release Factor: Water	0,0002
	initial release prior to RMM	,
	Emission or Release Factor: Soil	0,0001
	initial release prior to RMM	, ·
	Indoor use	
Technical conditions and measures at process level to prevent release Technical onsite conditions and		charge consistent with regulatory requirements. ross sites thus conservative process release
measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site		
	Type of Sewage Treatment Plant	Municipal sewage treatment plant
Conditions and measures related	Flow rate of sewage treatment plant effluent	2.000 m3/d
to sewage treatment plant	Degradation efficiency	96,2 %
	Percentage removed from waste water	96,2 %
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related	Recovery Methods	External recovery and recycling of waste should comply with applicable local and/or national
to external recovery of waste		comply with applicable local and/or hational



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		regulations.
2.2 Contributing scenario co PROC5, PROC8a, PROC8		re for: PROC1, PROC2, PROC3, PROC4, DC15
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	0,5 - 10 kPa
Frequency and duration of use	Covers daily exposures up	to 8 hours
Human factors not influenced by	Assumes activities are at a	mbient temperature.
risk management	Assumes a good basic star	ndard of occupational hygiene is implemented.
	General exposures Closed systems	Handle substance within a closed system. Store substance within a closed system.(PROC1)
	Formulation Continuous process With sample collection	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC2)
Technical conditions and	Mixing operations Batch process With sample collection	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC3)
	Mixing operations Batch processes at elevated temperatures With sample collection	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC3)
	Mixing operations (open systems) Batch process With sample collection	Provide extract ventilation to points where emissions occur.(PROC4)
measures to control dispersion from source towards the worker	Bulk transfers Non-dedicated facility	Provide extract ventilation to material transfer points and other openings. Avoid carrying out operation for more than 1 hour.(PROC8a)
	Bulk transfers Dedicated facility	Provide extract ventilation to material transfer points and other openings. Avoid carrying out operation for more than 1 hour.(PROC8b)
	Equipment cleaning and maintenance	Drain down system prior to equipment break-in or maintenance. Limit the substance content in the product to 5 %. Provide extract ventilation to material transfer points and other openings. Avoid carrying out operation for more than 15 minutes.(PROC8b)
	Disposal of wastes	Limit the substance content in the product to 1 %.



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		Ensure operation is undertaken outdoors. Avoid carrying out operation for more than 15 minutes.(PROC8a)
	Small package filling	Fill containers/cans at dedicated filling points supplied with local extract ventilation.(PROC9)
	Production or preparation or articles by tabletting, compression, extrusion or pelletisation	Provide extract ventilation to points where emissions occur.(PROC14)
	Laboratory activities	Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure.(PROC15)
	Bulk transfers Non-dedicated facility	Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC8a)
Conditions and measures related to personal protection, hygiene and health evaluation	Equipment cleaning and maintenance	Wear chemically resistant gloves. Use suitable eye protection.(PROC8b)
	Production or preparation or articles by tabletting, compression, extrusion or pelletisation	Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC14)

3. Exposure estimation and reference to its source

Environment

ESVOC SPERC 2.2.v1: ECETOC TRA model v2

ERC2: Environmental exposure estimation is based on Ecetoc TRA model v2.

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR	
ERC2			Msafe	10966kg/day		
ESVOC SPERC 2.2.v1		Fresh water	exposure estimate	0,000342mg/L	0,0389	
ESVOC SPERC 2.2.v1		Fresh water sediment	exposure estimate	0,0883mg/kg dry weight (d.w.)	0,0389	
ESVOC SPERC 2.2.v1		Marine water	exposure estimate	0,0000328mg/ L	0,0373	
ESVOC SPERC 2.2.v1		Marine sediment	exposure estimate	0,00848mg/kg dry weight (d.w.)	0,0374	
ESVOC SPERC 2.2.v1		Sewage treatment plant (STP)	exposure estimate	0,00255mg/L	0,000386	
ESVOC SPERC 2.2.v1		Indirect exposure to humans via the environment	exposure estimate		0,000708	
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ESVOC SPERC 2.2.v1	 Agricultural soil	exposure estimate	0,00638mg/kg dry weight (d.w.)	0,0608
ESVOC SPERC 2.2.v1	 Air	exposure estimate	0,00159	

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15: Advanced REACH Tool (ART model) (inhalative exposure)

PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15: ECETOC T	RA
model v2	

Contributing Scenario	Specific conditions	Exposure routes Level of Expos		RCR
PROC1		Worker - inhalative, long- term - systemic	0,01ppm	0,00947
PROC1		Worker - dermal, short- term - local	250mg/cm2	0,155
PROC2		Worker - inhalative, long- term	1,10ppm	0,284
PROC2, PROC8b		Worker - dermal, short- term - local	0,0999mg/cm2	0,621
PROC3		Worker - inhalative, long- term	5,20ppm	0,860
PROC3, PROC14		Worker - dermal, short- term - local	0,025mg/cm2	0,155
PROC4, PROC5		Worker - inhalative, long- term	2,50ppm	0,418
PROC4, PROC5, PROC9		Worker - dermal, short- term - local	0,05mg/cm2	0,311
PROC8a		Worker - inhalative, long- term	4,4ppm	0,740
PROC8a		Worker - dermal, short- term - local	0,00999mg/cm2	0,0621
PROC8b		Worker - inhalative, long- term	0,70ppm	0,663
PROC9		Worker - inhalative, long- term	1,10ppm	0,719
PROC14		Worker - inhalative, long- term	0,5ppm	0,474
PROC15		Worker - inhalative, long- term	4,60ppm	0,0686
PROC15		Worker - dermal, short- term - local	0,00250mg/cm2	0,0155
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4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Health

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

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1. Short title of Exposure Sce	enario 14: Use as a solve	ent
Main User Groups	SU 3: Industrial uses: Uses sites	of substances as such or in preparations at industrial
Process categories	exposure or processes with PROC2: Use in closed, cor PROC3: Manufacture or fo processes with occasional of containment condition PROC4: Use in batch and exposure arises PROC5: Mixing or blending and articles (multistage and PROC7: Industrial spraying	ance or preparation (charging/ discharging) from/ to dedicated facilities or brushing cles by dipping and pouring
Environmental Release Categories	ERC4: Industrial use of pro part of articles ERC7: Industrial use of sub	cessing aids in processes and products, not becoming ostances in closed systems
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC4, ERC7
, ESVOC spERC 4.6a.v1 has b , ESVOC spERC 4.19a.v1 has , ESVOC spERC 4.20a.v1 has , ESVOC spERC 4.21a.v1 has , ESVOC spERC 4.23.v1 has , ESVOC spERC 7.12a.v1 has , ESVOC spERC 7.13a.v1 has	been used to evaluate the been used to evaluate the	exposure for the environment. exposure for the environment. exposure for the environment. xposure for the environment. e exposure for the environment.
Amount used	Amounts used in the EU (tonnes/year) Fraction of EU tonnage	2208,7
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	used in region:	
	Regional use tonnage (tons/year):	200 (ESVOC 4.4a.v1, ESVOC 4.3a.v1, ESVOC 4.6a.v1, ESVOC 4.7a.v1, ESVOC 4.9.v1, ESVOC 4.10a.v1, ESVOC 7.12a.v1, ESVOC 7.13a.v1, ESVOC 4.19.v1, ESVOC 4.20.v1, ESVOC 4.21a.v1)
	Regional use tonnage (tons/year):	8 (ESVOC 4.5a.v1)
	Regional use tonnage (tons/year):	0,7 (ESVOC 4.23.v1)
	Fraction of regional tonnage used locally:	1 (ESVOC 4.3a.v1, ESVOC 4.5a.v1, ESVOC 4.9.v1, ESVOC 4.10a.v1, ESVOC 7.12a.v1, ESVOC 4.19.v1, ESVOC 4.20.v1, ESVOC 4.21a.v1)
	Fraction of regional tonnage used locally:	0,5 (ESVOC 4.4a.v1, ESVOC 4.6a.v1, ESVOC 4.7a.v1)
	Fraction of regional tonnage used locally:	0,09 (ESVOC 4.23.v1)
	Fraction of regional tonnage used locally:	0,005 (ESVOC 7.13a.v1)
	Maximum daily site tonnage (kg/day):	666,7 (ESVOC 4.3a.v1, ESVOC 4.9.v1, ESVOC 7.12a.v1, ESVOC 4.19.v1, ESVOC 4.20.v1, ESVOC 4.21a.v1)
	Maximum daily site tonnage (kg/day):	5000 (ESVOC 4.4a.v1, ESVOC 4.6a.v1, ESVOC 4.7a.v1)
	Maximum daily site tonnage (kg/day):	2000 (ESVOC 4.10a.v1)
	Maximum daily site tonnage (kg/day):	4 (ESVOC 4.23.v1)
	Maximum daily site tonnage (kg/day):	50 (ESVOC 7.13a.v1)
	Annual site tonnage	200 (ESVOC 4.3a.v1, ESVOC 4.9.v1, ESVOC 4.10a.v1, ESVOC 7.12a.v1, ESVOC 4.19.v1, ESVOC 4.20.v1, ESVOC 4.21a.v1)
	Annual site tonnage	100 (ESVOC 4.4a.v1, ESVOC 4.6a.v1, ESVOC 4.7a.v1)
	Annual site tonnage	8 (ESVOC 4.5a.v1)
	Annual site tonnage	1 (ESVOC 7.13a.v1)
	Annual site tonnage	0,1 (ESVOC 4.23.v1)
	Flow rate of receiving surface water	18.000 m3/d
Environment factors not influenced by risk management	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
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	Continuous release(ESVO	C 4.3a.v1, ESVOC 4.9.v1, ESVOC 7.12a.v1, ESVOC
	4.19.v1, ESVOC 4.20.v1, E	
	Number of emission days per year	300 (ESVOC 4.3a.v1, ESVOC 4.9.v1, ESVOC 7.12a.v1, ESVOC 4.19.v1, ESVOC 4.20.v1, ESVOC 4.21a.v1)
	Continuous release(ESVO 7.13a.v1, ESVOC 4.23.v1)	C 4.4a.v1, ESVOC 4.6a.v1, ESVOC 4.7a.v1, ESVOC
	Number of emission days per year	20 (ESVOC 4.4a.v1, ESVOC 4.6a.v1, ESVOC 4.7a.v1, ESVOC 7.13a.v1, ESVOC 4.23.v1)
	Continuous release(ESVO	C 4.10a.v1)
	Number of emission days per year	100 (ESVOC 4.10a.v1)
	Continuous release(ESVO	C 4.5a.v1)
	Number of emission days per year	30 (ESVOC 4.5a.v1)
	Emission or Release Factor: Air	0,098 (ESVOC 4.3a.v1)
	initial release prior to RMM	, . (ESVOC 4.3a.v1)
	Emission or Release Factor: Air	0,3 (ESVOC 4.4a.v1)
Other given operational	initial release prior to RMM	, . (ESVOC 4.4a.v1)
conditions affecting environmental exposure	Emission or Release Factor: Air	0,005 (ESVOC 4.5a.v1)
	initial release prior to RMM	, . (ESVOC 4.5a.v1)
	Emission or Release Factor: Air	0,0015 (ESVOC 4.6a.v1)
	initial release prior to RMM	, . (ESVOC 4.6a.v1)
	Emission or Release Factor: Air	0,006 (ESVOC 4.7a.v1)
	initial release prior to RMM	, . (ESVOC 4.7a.v1)
	Emission or Release Factor: Air	1 (ESVOC 4.9.v1)
	initial release prior to RMM	, . (ESVOC 4.9.v1)
	Emission or Release Factor: Air	0,2 (ESVOC 4.10a.v1)
	initial release prior to RMM	, . (ESVOC 4.10a.v1)
	Emission or Release Factor: Air	0,01 (ESVOC 4.19.v1)
	initial release prior to RMM	, . (ESVOC 4.19.v1)
	Emission or Release Factor: Air	0,002 (ESVOC 4.20.v1)
	initial release prior to RMM	, . (ESVOC 4.20.v1)
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Factor: Air	0,05 (ESVOC 4.21a.v1, ESVOC 4.23.v1)
initial release prior to RMM	, . (ESVOC 4.21a.v1, ESVOC 4.23.v1)
Emission or Release Factor: Air	0,00025 (ESVOC 7.12a.v1)
initial release prior to RMM	, . (ESVOC 7.12a.v1)
Emission or Release Factor: Air	0,005 (ESVOC 7.13a.v1)
initial release prior to RMM	, . (ESVOC 7.13a.v1)
Emission or Release Factor: Water	0,0007 (ESVOC 4.3a.v1)
initial release prior to RMM	, . (ESVOC 4.3a.v1)
Emission or Release Factor: Water	0,3 .10-4 (ESVOC 4.4a.v1, ESVOC 4.10a.v1, ESVOC 7.13a.v1)
initial release prior to RMM 7.13a.v1)	, . (ESVOC 4.4a.v1, ESVOC 4.10a.v1, ESVOC
Emission or Release Factor: Water	0,00003 (ESVOC 4.6a.v1, ESVOC 4.7a.v1, ESVOC 4.9.v1)
initial release prior to RMM	, . (ESVOC 4.6a.v1, ESVOC 4.7a.v1, ESVOC 4.9.v1)
Emission or Release Factor: Water	0,0003 (ESVOC 4.19.v1, ESVOC 4.20.v1)
initial release prior to RMM	, . (ESVOC 4.19.v1, ESVOC 4.20.v1)
Emission or Release Factor: Water	0,07 (ESVOC 4.5a.v1)
initial release prior to RMM	, . (ESVOC 4.5a.v1)
Emission or Release Factor: Water	0,05 (ESVOC 4.23.v1)
initial release prior to RMM	, . (ESVOC 4.23.v1)
Emission or Release Factor: Water	0,00001 (ESVOC 9.12b.v1)
initial release prior to RMM	, . (ESVOC 9.12b.v1)
Emission or Release Factor: Water	0,001 (ESVOC 4.6a.v1, ESVOC 7.13a.v1)
initial release prior to RMM	, . (ESVOC 4.6a.v1, ESVOC 7.13a.v1)
Emission or Release Factor: Water	0,05 (ESVOC 4.23.v1)
initial release prior to RMM	, . (ESVOC 4.23.v1)
Emission or Release Factor: Water	0,00001 (ESVOC 4.21a.v1)
initial release prior to RMM	, . (ESVOC 4.21a.v1)
Emission or Release Factor: Water	0,0001 (ESVOC 4.19.v1, ESVOC 4.20.v1)

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	initial release prior to RMM	, . (ESVOC 4.19.v1, ESVOC 4.20.v1)		
	Indoor use			
Technical conditions and measures at process level to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and		charge consistent with regulatory requirements. ross sites thus conservative process release		
releases to soil Organizational measures to prevent/limit release from the site				
	Type of Sewage Treatment Plant	Municipal sewage treatment plant		
Conditions and measures related to sewage treatment plant	Flow rate of sewage treatment plant effluent	2.000 m3/d		
to sewage treatment plant	Degradation efficiency	96,2 %		
	Percentage removed from waste water	96,2 %		
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.		
Conditions and measures related to external recovery of waste	Recovery Methods	External recovery and recycling of waste should comply with applicable local and/or national regulations.		
2.2 Contributing scenario co PROC5, PROC7, PROC8b		re for: PROC1, PROC2, PROC3, PROC4, DC15		
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	0,5 - 10 kPa		
Frequency and duration of use	Covers daily exposures up	to 8 hours		
Human factors not influenced by	Assumes activities are at a	mbient temperature.		
risk management	Assumes a good basic star	ndard of occupational hygiene is implemented.		
	General exposures Closed systems	Handle substance within a closed system. Store substance within a closed system.(PROC1)		
Technical conditions and measures to control dispersion from source towards the worker	General exposures (closed systems) Continuous process	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC2)		
	Mixing operations Batch process	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC3)		
	Batch process	Provide extract ventilation to points where		
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		emissions occur.(PROC4)
	Mixing operations (open systems) Batch process	Provide extract ventilation to points where emissions occur.(PROC4, PROC5)
	Spraying	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.(PROC7)
	Material transfers Dedicated facility	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC8b)
	Equipment cleaning and maintenance	Drain down system prior to equipment break-in or maintenance. Limit the substance content in the product to 5 %. Provide extract ventilation to material transfer points and other openings. Avoid carrying out operation for more than 15 minutes.(PROC8b)
	Roller, spreader, flow application	Provide extract ventilation to material transfer points and other openings.(PROC10)
	Dipping, immersion and pouring	Provide extract ventilation to points where emissions occur.(PROC13)
	Laboratory activities	Handle in a fume cupboard or under extract ventilation.(PROC15)
	Spraying	Wear a respirator conforming to EN140 with Type A/P2 filter or better. Wear chemically resistant gloves. Use suitable eye protection.(PROC7)
Conditions and measures related to personal protection, hygiene and health evaluation	Material transfers Dedicated facility	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Wear a respirator conforming to EN140 with Type A/P2 filter or better. Use suitable eye protection.(PROC8b)
	Roller, spreader, flow application	Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC10)

3. Exposure estimation and reference to its source

Environment

ESVOC SPERC 4.4a.v1: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ESVOC SPERC 4.4a.v1			Msafe	376588kg/day	
ESVOC SPERC 4.4a.v1		Fresh water	exposure estimate	0,000117mg/L	0,0133

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ESVOC SPERC 4.4a.v1	 Fresh water sediment	exposure estimate	0,0301mg/kg dry weight (d.w.)	0,0133
ESVOC SPERC 4.4a.v1	 Marine water	exposure estimate	0,0000103mg/ L	0,0117
ESVOC SPERC 4.4a.v1	 Marine sediment	exposure estimate	0,00266mg/kg dry weight (d.w.)	0,0117
ESVOC SPERC 4.4a.v1	 Sewage treatment plant (STP)	exposure estimate	0,000287mg/L	0,000043
ESVOC SPERC 4.4a.v1	 Indirect exposure to humans via the environment	exposure estimate		0,000708
ESVOC SPERC 4.4a.v1	 Agricultural soil	exposure estimate	0,00261mg/kg dry weight (d.w.)	0,0111
ESVOC SPERC 4.4a.v1	 Air	exposure estimate	0,00229	

Workers

PROC1, PROC2, PROC3, PROC4, PROC7, PROC8b, PROC10, PROC13, PROC15: Advanced REACH Tool (ART model) (inhalative exposure)

PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8b, PROC10, PROC13, PROC15: ECETOC TRA	
model v2	

model vz				
Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Worker - inhalative, long- term - systemic	0,01ppm	0,00947
PROC1, PROC3, PROC15		Worker - dermal, short- term - local	0,0250mg/cm2	0,155
PROC2		Worker - inhalative, long- term	1,70ppm	0,284
PROC2		Worker - dermal, short- term - local	0,0999mg/cm2	0,621
PROC3, PROC7		Worker - inhalative, long- term	5,20ppm	0,860
PROC4		Worker - inhalative, long- term	2,50ppm	0,418
PROC4, PROC8b		Worker - dermal, short- term - local	0,05mg/cm2	0,311
PROC5, PROC13		Worker - dermal, short- term - local	0,005mg/cm2	0,0311
PROC7		Worker - dermal, short- term - local	0,0313ppm	0,194
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PROC8b	 Worker - inhalative, long- term 0,350ppm		0,332
PROC10	 Worker - inhalative, long- term 0,56ppm (0,0936
PROC10	 Worker - dermal, short- term - local	9,99mg/cm2	0,621
PROC13	 Worker - inhalative, long- term	0,290ppm	0,0485
PROC15	 Worker - inhalative, long- term	4,60ppm	0,0686

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-forindustries-libraries.html).

Health

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

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1. Short the of Exposure ocenano 15. Ose as a solvent	1. Short title of Exposure Scenario 15: Use as a solvent	
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Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)			
Main User Groups Process categories	PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring PROC15: Use as laboratory reagent			
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC9a: Wide dispersive indoor use of substances in closed systems ERC9b: Wide dispersive outdoor use of substances in closed systems			

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d, ERC9a, ERC9b

Substance is complex UVCB, Non-hydrophobic.

, Readily biodegradable.

, ESVOC spERC 8.17.v1 has been used to evaluate the exposure for the environment.

, ESVOC spERC 8.21b.v1 has been used to evaluate the exposure for the environment.

, ESVOC spERC 8.3b.v1 has been used to evaluate the exposure for the environment.

, ESVOC spERC 8.4b.v1 has been used to evaluate the exposure for the environment.

, ESVOC spERC 8.6c.v1 has been used to evaluate the exposure for the environment.

, ESVOC spERC 8.7c.v1 has been used to evaluate the exposure for the environment.

, ESVOC SpERC 8.23a.v1.

, ESVOC SPERC 9.7b.v1.

, ESVOC SPERC 9.24a.v1.

, ESVOC SPERC 9.24b.v1.

, ESVOC spERC 8.10b.v1 has been used to evaluate the exposure for the environment.

, ESVOC spERC 8.11a.v1 has been used to evaluate the exposure for the environment.

, ESVOC spERC 9.6b.v1 has been used to evaluate the exposure for the environment.

, ESVOC spERC 9.12b.v1 has been used to evaluate the exposure for the environment.

, ESVOC spERC 9.13b.v1 has been used to evaluate the exposure for the environment.

, For more information on ESVOC spERC from the Solvents sector, please visit the website: www.esig.org.

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	(tonnes/year) Fraction of EU tonnage	0,1
	used in region:	0,1
	Regional use tonnage (tons/year):	20 (ESVOC 8.3b.v1, ESVOC 8.4b.v1, ESVOC 9.6b.v1, ESVOC 8.6c.v1, ESVOC 9.7b.v1, ESVOC 8.7c.v1, ESVOC 8.23a.v1, ESVOC 8.10b.v1, ESVOC 8.11a.v1, ESVOC 9.12b.v1, ESVOC 9.13b.v1, ESVOC 8.17.v1, ESVOC 8.21b.v1, ESVOC 9.24a.v1, ESVOC 9.24b.v1)
	Fraction of regional tonnage used locally:	0,0005 (ESVOC 8.3b.v1, ESVOC 8.4b.v1, ESVOC 9.6b.v1, ESVOC 8.6c.v1, ESVOC 9.7b.v1, ESVOC 8.7c.v1, ESVOC 8.23a.v1, ESVOC 8.10b.v1, ESVOC 9.12b.v1, ESVOC 9.13b.v1, ESVOC 8.17.v1, ESVOC 8.21b.v1, ESVOC 9.24b.v1)
	Fraction of regional tonnage used locally:	0,002 (ESVOC 8.11a.v1)
Amount used	Fraction of regional tonnage used locally:	1 (ESVOC 9.24a.v1)
	Maximum daily site tonnage (kg/day):	0,0274 (ESVOC 8.23a.v1, ESVOC 8.3b.v1, ESVOC 8.4b.v1, ESVOC 9.6b.v1, ESVOC 8.6c.v1, ESVOC 9.7b.v1, ESVOC 8.7c.v1, ESVOC 8.10b.v1, ESVOC 9.12b.v1, ESVOC 9.13b.v1, ESVOC 8.17.v1, ESVOC 8.21b.v1, ESVOC 9.24b.v1)
	Maximum daily site tonnage (kg/day):	0,1096 (ESVOC 8.11a.v1)
	Maximum daily site tonnage (kg/day):	66,67 (ESVOC 9.24a.v1)
	Annual site tonnage	0,01 (ESVOC 8.3b.v1, ESVOC 8.4b.v1, ESVOC 9.6b.v1, ESVOC 8.6c.v1, ESVOC 9.7b.v1, ESVOC 8.7c.v1, ESVOC 8.23a.v1, ESVOC 8.10b.v1, ESVOC 9.12b.v1, ESVOC 9.13b.v1, ESVOC 8.17.v1, ESVOC 8.21b.v1, ESVOC 9.24b.v1)
	Annual site tonnage	0,04 (ESVOC 8.11a.v1)
	Annual site tonnage	20 (ESVOC 9.24a.v1)
Environment feators not	Flow rate of receiving surface water	18.000 m3/d
Environment factors not influenced by risk management	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Other given operational	Wide dispersive use	
conditions affecting environmental exposure Number of emission days		365
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per year	
Wide dispersive use(ESVO	C 9.24a.v1)
Number of emission days per year	300 (ESVOC 9.24a.v1)
Emission or Release Factor: Air	0,5 (ESVOC 8.17.v1)
initial release prior to RMM,	. (ESVOC 8.17.v1)
Emission or Release Factor: Air	0,02 (ESVOC 8.4b.v1)
initial release prior to RMM,	. (ESVOC 8.4b.v1)
Emission or Release Factor: Air	0,98 (ESVOC 8.3b.v1, ESVOC 8.21b.v1)
initial release prior to RMM,	. (ESVOC 8.3b.v1, ESVOC 8.21b.v1)
Emission or Release Factor: Air	0,15 (ESVOC 8.6c.v1, ESVOC 8.7c.v1)
Emission or Release Factor: Air	1 (ESVOC 8.23a.v1)
Emission or Release Factor: Air	0,95 (ESVOC 8.10b.v1)
Emission or Release Factor: Air	0,9 (ESVOC 8.11a.v1)
Emission or Release Factor: Air	0,01 (ESVOC 9.6b.v1)
Emission or Release Factor: Air	0,05 (ESVOC 9.7b.v1)
Emission or Release Factor: Air	0,001 (ESVOC 9.12b.v1, ESVOC 9.24a.v1)
Emission or Release Factor: Air	0,05 (ESVOC 9.13b.v1)
Emission or Release Factor: Air	0,005 (ESVOC 9.24b.v1)
Emission or Release Factor: Water	0,5 (ESVOC 8.17.v1)
Emission or Release Factor: Water	0,01 (ESVOC 8.3b.v1, ESVOC 9.6b.v1, ESVOC 8.11a.v1, ESVOC 8.21b.v1)
Emission or Release Factor: Water	0,05 (ESVOC 8.6c.v1, ESVOC 8.7c.v1)
Emission or Release Factor: Water	0,025 (ESVOC 9.7b.v1, ESVOC 8.23a.v1, ESVOC 8.10b.v1)
Emission or Release Factor: Water	0,00001 (ESVOC 9.12b.v1)
Emission or Release Factor: Soil	0,01 (ESVOC 8.3b.v1, ESVOC 9.6b.v1, ESVOC 8.21b.v1)



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	-			
	Emission or Release Factor: Soil	0,05 (ESVOC 8.6c.v1, ESVOC 8.7c.v1)		
	Emission or Release Factor: Soil	0,09 (ESVOC 8.11a.v1)		
	Emission or Release Factor: Soil	0,025 (ESVOC 9.13b.v1, ESVOC 8.10b.v1)		
	Emission or Release Factor: Soil	0,00001 (ESVOC 9.12b.v1)		
	Indoor or outdoor use			
Technical conditions and measures at process level to prevent release Technical onsite conditions and		harge consistent with regulatory requirements. ross sites thus conservative process release		
neasures to reduce or limit discharges, air emissions and eleases to soil Drganizational measures to prevent/limit release from the site				
	Type of Sewage Treatment Plant	Municipal sewage treatment plant		
Conditions and measures related	Flow rate of sewage treatment plant effluent	2.000 m3/d		
o sewage treatment plant	Degradation efficiency	96,2 %		
	Percentage removed from waste water	96,2 %		
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.		
Conditions and measures related o external recovery of waste	Recovery Methods	External recovery and recycling of waste should comply with applicable local and/or national regulations.		
2.2 Contributing scenario co PROC5, PROC8a, PROC8		re for: PROC1, PROC2, PROC3, PROC4, OC13, PROC15		
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	0,5 - 10 kPa		
Frequency and duration of use	Covers daily exposures up	to 8 hours		
luman factors not influenced by	Assumes activities are at a	mbient temperature.		
	Assumes a good basic standard of occupational hygiene is implemented.			
-	Assumes a good basic star	idaid of occupational nygiene is implemented.		
risk management Technical conditions and measures to control dispersion	Assumes a good basic star General exposures	Handle substance within a closed system.		



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from source towards the worker Closed systems Store substance within a closed system.(PROC1) General exposures Provide a good standard of general ventilation (not (closed systems) less than 3 to 5 air changes per hour).(PROC2) Continuous process Provide a good standard of general ventilation (not Mixing operations Batch process less than 3 to 5 air changes per hour).(PROC3) Provide extract ventilation to points where Batch process emissions occur.(PROC4) Mixing operations (open Provide extract ventilation to points where systems) emissions occur.(PROC4, PROC5) Batch process Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. Spraying Limit the substance content in the product to 10 %.(PROC11) Provide a good standard of general ventilation (not Material transfers less than 3 to 5 air changes per hour).(PROC8b) Dedicated facility Drain down system prior to equipment break-in or maintenance. Limit the substance content in the product to 5 %. Equipment cleaning and Provide extract ventilation to material transfer points maintenance and other openings. Avoid carrying out operation for more than 15 minutes.(PROC8b) Provide extract ventilation to points where Roller, spreader, flow emissions occur. application Ensure operation is undertaken outdoors.(PROC10) Provide extract ventilation to points where Dipping, immersion and emissions occur. pouring Ensure operation is undertaken outdoors.(PROC13) Handle in a fume cupboard or under extract Laboratory activities ventilation.(PROC15) Material transfers Provide extract ventilation to material transfer points Non-dedicated facility and other openings.(PROC8a) Drain or remove substance from equipment prior to break-in or maintenance. Limit the substance content in the product to 5 %. Equipment cleaning and Provide a good standard of general ventilation (not maintenance less than 3 to 5 air changes per hour). Non-dedicated facility Avoid carrying out operation for more than 15 minutes. Ensure operation is undertaken outdoors.(PROC8a) Wear a respirator conforming to EN140 with Type Conditions and measures related to personal protection, hygiene A/P2 filter or better. Spraying and health evaluation Use suitable eye protection. P8886 94/150 ΕN



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	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.(PROC11)
Material transfers Dedicated facility	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Wear a respirator conforming to EN140 with Type A/P2 filter or better. Use suitable eye protection.(PROC8b)
Roller, spreader, flov application	Wear a respirator conforming to EN140 with Type A/P2 filter or better. Use suitable eye protection. Wear chemically resistant gloves.(PROC10)
Dipping, immersion a pouring	and Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection.(PROC13)
Material transfers Non-dedicated facilit	y Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection.(PROC8a)
Equipment cleaning maintenance Non-dedicated facilit	Use suitable eye protection. Wear a respirator conforming to EN140 with Type

3. Exposure estimation and reference to its source

Environment

ESVOC SPERC 9.24a.v1: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ESVOC SPERC 9.24a.v1			Msafe	6638kg/day	
ESVOC SPERC 9.24a.v1		Fresh water	exposure estimate	0,0000883mg/ L	0,01
ESVOC SPERC 9.24a.v1		Fresh water sediment	exposure estimate	0,0228mg/kg dry weight (d.w.)	0,01
ESVOC SPERC 9.24a.v1		Marine water	exposure estimate	0,0000746mg/ L	0,00848
ESVOC SPERC 9.24a.v1		Marine sediment	exposure estimate	0,00193mg/kg dry weight (d.w.)	0,00849
ESVOC SPERC 9.24a.v1		Sewage treatment plant (STP)	exposure estimate	< 0,0001mg/L	< 0,0001
ESVOC SPERC 9.24a.v1		Indirect exposure to humans via the	exposure estimate		0,000708
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	environment			
ESVOC SPERC 9.24a.v1	 Agricultural soil	exposure estimate	0,000004mg/k g dry weight (d.w.)	0,000009
ESVOC SPERC 9.24a.v1	 Air	exposure estimate	0,0000739	

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15: Advanced REACH Tool (ART model) (inhalative exposure)

PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR	
PROC1		Worker - inhalative, long- term	0,01ppm	0,00947	
PROC1, PROC3		Worker - dermal, short- term - local	0,0250mg/cm2	0,155	
PROC2		Worker - inhalative, long- term	1,70ppm	0,284	
PROC2		Worker - dermal, short- term - local	0,0999mg/cm2	0,621	
PROC3		Worker - inhalative, long- term	5,20ppm	0,860	
PROC4		Worker - inhalative, long- term	0,350ppm	0,0590	
PROC4, PROC8a, PROC8b, PROC13		Worker - dermal, short- term - local	0,05mg/cm2	0,311	
PROC5		Worker - inhalative, long- term	3,40ppm	0,569	
PROC5		Worker - dermal, short- term - local	0,005mg/cm2	0,0311	
PROC8a, PROC11, PROC15		Worker - inhalative, long- term	4,10ppm	0,686	
PROC8b		Worker - inhalative, long- term	3,50ppm	0,332	
PROC10		Worker - inhalative, long- term	3,10ppm	0,518	
PROC10		Worker - dermal, short- term - local	short- 0,02mg/cm2 0,124		
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PROC11	 Worker - dermal, short- term - local	0,0313mg/cm2	0,194
PROC13	 Worker - inhalative, long- term	0,290ppm	0,0452
PROC15	 Worker - dermal, short- term - local	0,0250mg/cm2	0,0155

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Health

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES


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1. Short title of Exposure Scenario 16: Use as a solvent

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)	
Chemical product category	PC15: Non-metal-surface treatment products	
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC9a: Wide dispersive indoor use of substances in closed systems ERC9b: Wide dispersive outdoor use of substances in closed systems	
Activity	Use as process solvent or extraction agent. Includes recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container)	

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d, ERC9a, ERC9b

Substance is complex UVCB, Non-hydrophobic.

, Readily biodegradable.

, ESVOC spERC 8.3c.v1 has been used to evaluate the exposure for the environment.

, ESVOC spERC 8.4b.v1 has been used to evaluate the exposure for the environment.

, ESVOC spERC 8.6e.v1 has been used to evaluate the exposure for the environment.

, ESVOC SpERC 8.23b.v1.

, ESVOC spERC 8.16.v1 has been used to evaluate the exposure for the environment.

, ESVOC spERC 9.6d.v1 has been used to evaluate the exposure for the environment.

, ESVOC spERC 9.12c.v1 has been used to evaluate the exposure for the environment.

, ESVOC spERC 9.13c.v1 has been used to evaluate the exposure for the environment.

, ESVOC SPERC 9.24c.v1.

, For more information on ESVOC spERC from the Solvents sector, please visit the website: www.esig.org.

Amount used	Amounts used in the EU (tonnes/year)	1800
	Fraction of EU tonnage used in region:	0,1
	Regional use tonnage (tons/year):	20 (ESVOC 8.3c.v1, ESVOC 8.4c.v1, ESVOC 9.6d.v1, ESVOC 8.6e.v1, ESVOC 8.23b.v1, ESVOC 9.12c.v1, ESVOC 9.13c.v1, ESVOC 8.16.v1, ESVOC 9.24c.v1)
	Fraction of regional tonnage used locally:	0,0005 (ESVOC 8.3c.v1, ESVOC 8.4c.v1, ESVOC 9.6d.v1, ESVOC 8.6e.v1, ESVOC 8.23b.v1, ESVOC 9.13c.v1, ESVOC 8.16.v1, ESVOC 9.12c.v1, ESVOC 9.24c.v1)
	Maximum daily site tonnage (kg/day):	0,00274 (ESVOC 8.3c.v1, ESVOC 8.4c.v1, ESVOC 8.6e.v1, ESVOC 8.23b.v1, ESVOC 8.16.v1, ESVOC 9.6d.v1, ESVOC 9.12c.v1, ESVOC 9.13c.v1, ESVOC 9.24c.v1)
	Annual site tonnage	0,01 (ESVOC 8.3c.v1, ESVOC 8.4c.v1, ESVOC 8.6e.v1, ESVOC 8.23b.v1, ESVOC 9.6d.v1,
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		ESVOC 9.12c.v1, ESVOC 8.16.v1, ESVOC 9.13c.v1, ESVOC 9.24c.v1)		
	Flow rate of receiving surface water	18.000 m3/d		
Environment factors not nfluenced by risk management	Dilution Factor (River)	10		
initialized by tisk management	Dilution Factor (Coastal Areas)	100		
	Wide dispersive use			
	Number of emission days per year	365		
	Emission or Release Factor: Air	0,95 (ESVOC 8.4c.v1, ESVOC 8.16.v1)		
	initial release prior to RMM	l, . (ESVOC 8.4c.v1, ESVOC 8.16.v1)		
	Emission or Release Factor: Air	0,98 (ESVOC 8.3c.v1)		
	initial release prior to RMM	l, . (ESVOC 8.3c.v1)		
	Emission or Release Factor: Air	0,15 (ESVOC 8.6e.v1)		
	initial release prior to RMM	l, . (ESVOC 8.6e.v1)		
	Emission or Release Factor: Air	1 (ESVOC 8.23b.v1)		
	initial release prior to RMM	initial release prior to RMM, . (ESVOC 8.23b.v1)		
Other given operational	Emission or Release Factor: Air	0,01 (ESVOC 9.6d.v1)		
conditions affecting	initial release prior to RMM	l, . (ESVOC 9.6d.v1)		
environmental exposure	Emission or Release Factor: Air	0,0001 (ESVOC 9.12c.v1)		
	initial release prior to RMM	, . (ESVOC 9.12c.v1)		
	Emission or Release Factor: Air	0,05 (ESVOC 9.13c.v1)		
	initial release prior to RMM	, . (ESVOC 9.13c.v1)		
	Emission or Release Factor: Air	0,005 (ESVOC 9.24c.v1)		
	initial release prior to RMM	, . (ESVOC 9.24c.v1)		
	Emission or Release Factor: Water	0,025 (ESVOC 8.4c.v1, ESVOC 8.16.v1, ESVOC 9.13c.v1)		
	initial release prior to RMM 9.13c.v1)	l, . (ESVOC 8.4c.v1, ESVOC 8.16.v1, ESVOC		
	Emission or Release Factor: Water	0,01 (ESVOC 8.3c.v1, ESVOC 9.6d.v1)		
	initial release prior to RMM	, . (ESVOC 8.3c.v1, ESVOC 9.6d.v1)		
	Emission or Release	0,05 (ESVOC 8.6e.v1)		



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	Factor: Water	
	initial release prior to RMM	, . (ESVOC 8.6e.v1)
	Emission or Release Factor: Water	0,00001 (ESVOC 9.12c.v1)
	initial release prior to RMM	, . (ESVOC 9.12c.v1)
	Emission or Release Factor: Soil	0,025 (ESVOC 8.4c.v1, ESVOC 9.13c.v1, ESVOC 8.16.v1)
	initial release prior to RMM 8.16.v1)	, . (ESVOC 8.4c.v1, ESVOC 9.13c.v1, ESVOC
	Emission or Release Factor: Soil	0,005 (ESVOC 8.3c.v1)
	initial release prior to RMM	, . (ESVOC 8.3c.v1)
	Emission or Release Factor: Soil	0,05 (ESVOC 8.6e.v1)
	initial release prior to RMM	, . (ESVOC 8.6e.v1)
	Emission or Release Factor: Soil	0,01 (ESVOC 9.6d.v1)
	initial release prior to RMM	, . (ESVOC 9.6d.v1)
	Emission or Release Factor: Soil	0,00001 (ESVOC 9.12c.v1)
	initial release prior to RMM	, . (ESVOC 9.12c.v1)
	Indoor or outdoor use	
Technical conditions and measures at process level to prevent release		charge consistent with regulatory requirements. ross sites thus conservative process release
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Drganizational measures to prevent/limit release from the site		
	Type of Sewage Treatment Plant	Municipal sewage treatment plant
Conditions and measures related	Flow rate of sewage treatment plant effluent	2.000 m3/d
o sewage treatment plant	Degradation efficiency	96,2 %
	Percentage removed from waste water	96,2 %
Conditions and measures related o external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.



Conditions and measures related to external recovery of waste	Recovery Methods	External recovery and recycling of waste should comply with applicable local and/or national regulations.	
2.2 Contributing scenario co	ntrolling consumer expo	osure for: PC15	
	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 0% - 0,25%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	519 Pa	
Amount used	Amount used per event	1000 g	
	Frequency of use	1 Times per day	
Frequency and duration of use	Frequency of use	1 days/year	
	Exposure duration per event	2,20 h	
Human factors not influenced by	Exposed skin area	Covers skin contact area up to 857,50 cm ²	
risk management	_		
Other given operational conditions affecting consumers	Room size	20 m3	
exposure			
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal	No specific risk management measure identified beyond those operational conditions stated.		
protection and hygiene)			

3. Exposure estimation and reference to its source

Environment

ESVOC SPERC 8.3c.v1: ECETOC TRA model v2					
Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ESVOC SPERC 8.3c.v1		Fresh water	exposure estimate	0,0000888mg/ L	0,0101
ESVOC SPERC 8.3c.v1		Fresh water sediment	exposure estimate	0,0229mg/kg dry weight (d.w.)	0,0101
ESVOC SPERC 8.3c.v1		Marine water	exposure estimate	0,0000075mg/ L	0,00854
ESVOC SPERC 8.3c.v1		Marine sediment	exposure estimate	0,00195mg/kg dry weight (d.w.)	0,00855
ESVOC SPERC 8.3c.v1		Sewage treatment plant (STP)	exposure estimate	< 0,0001mg/L	< 0,0001



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ESVOC SPERC 8.3c.v1	 Indirect exposure to humans via the environment	exposure estimate		0,000708
ESVOC SPERC 8.3c.v1	 Agricultural soil	exposure estimate	0,0000168mg/ kg dry weight (d.w.)	0,000133
ESVOC SPERC 8.3c.v1	 Air	exposure estimate	0,0000739	

Consumers

PC15: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PC15		Consumer - inhalative, long-term - systemic	0,0174ppm	0,0112
PC15		consumer dermal, acute - local	0,0211mg/cm2	0,914

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Health

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES



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1. Short title of Exposure Scenario 17: Use as a chemical stripper

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC21: Low energy manipulation of substances bound in materials and/ or articles PROC24: High (mechanical) energy work-up of substances bound in materials and/ or articles
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

2.1 Contributing scenario controlling environmental exposure for: ERC4

Substance is complex UVCB, Non-hydrophobic.

, Readily biodegradable.

, CEPE SPERC 4.na.v1.

, CEPE SPERC 4.nb.v1.

, ESVOC spERC 4.3a.v1 has been used to evaluate the exposure for the environment.

, For more information on ESVOC spERC from the Solvents sector, please visit the website: www.esig.org.

, For more information on spERC from the Coatings & Inks sector, please visit the website: www.cepe.org.

	Amounts used in the EU (tonnes/year)	300
	Fraction of EU tonnage used in region:	1
	Regional use tonnage (tons/year):	100 (CEPE 4.1a.v1, CEPE 8a.n.v1, ESVOC 4.3a.v1)
Amount used	Fraction of regional tonnage used locally:	1 (CEPE 4.1a.v1, CEPE 8a.n.v1, ESVOC 4.3a.v1)
	Maximum daily site tonnage (kg/day):	455 (CEPE 4.1a.v1, CEPE 8a.n.v1)
	Maximum daily site tonnage (kg/day):	333,3 (ESVOC 4.3a.v1)
	Annual site tonnage	100 (CEPE 4.1a.v1, CEPE 8a.n.v1, ESVOC 4.3a.v1)
	Flow rate of receiving surface water	18.000 m3/d
Environment factors not influenced by risk management	Dilution Factor (River)	10
innuenced by nak management	Dilution Factor (Coastal Areas)	100
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	Continuous release(CEPE	4.1a.v1, CEPE 4.1b.v1)	
	Number of emission days per year	220 (CEPE 4.1a.v1, CEPE 4.1b.v1)	
	Continuous release(ESVO	C 4.3a.v1)	
	Number of emission days per year	300 (ESVOC 4.3a.v1)	
	Emission or Release Factor: Air	0,8 (CEPE 4.1a.v1)	
	initial release prior to RMM	, . (CEPE 4.1a.v1)	
	Emission or Release Factor: Air	0,98 (CEPE 8a.n.v1)	
Other given operational	initial release prior to RMM	, . (CEPE 8a.n.v1)	
conditions affecting environmental exposure	Emission or Release Factor: Air	0,098 (ESVOC 4.3a.v1)	
	initial release prior to RMM	, . (ESVOC 4.3a.v1)	
	Emission or Release Factor: Water	0,02 (CEPE 4.1a.v1, CEPE 8a.n.v1)	
	initial release prior to RMM	, . (CEPE 4.1a.v1, CEPE 8a.n.v1)	
	Emission or Release Factor: Water	0,0007 (ESVOC 4.3a.v1)	
	initial release prior to RMM	, . (ESVOC 4.3a.v1)	
	Emission or Release Factor: Soil	0	
	initial release prior to RMM	, ·	
	Indoor use		
Technical conditions and measures at process level to prevent release		charge consistent with regulatory requirements. ross sites thus conservative process release	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site			
	Type of Sewage Treatment Plant	Municipal sewage treatment plant	
Or a division of a second s	Flow rate of sewage treatment plant effluent	2.000 m3/d	
Conditions and measures related to sewage treatment plant	Degradation efficiency	96,2 %	
	Percentage removed from waste water	96,2 %	
	Type of Sewage Treatment Plant	Municipal sewage treatment plant (only CEPE 4.1a.v1)	
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	Flow rate of sewage treatment plant effluent	2.000 m3/d (only CEPE 4.1a.v1)
	Degradation efficiency	96,2 % (only CEPE 4.1a.v1)
	Percentage removed from waste water	99 % (only CEPE 4.1a.v1)
	Type of Sewage Treatment Plant	Municipal sewage treatment plant (only CEPE 4.1b.v1)
	Flow rate of sewage treatment plant effluent	2.000 m3/d (only CEPE 4.1b.v1)
	Degradation efficiency	96,2 % (only CEPE 4.1b.v1)
	Percentage removed from waste water	95 % (only CEPE 4.1b.v1)
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste	Recovery Methods	External recovery and recycling of waste should comply with applicable local and/or national regulations.
2.2 Contributing scenario co	ntrolling worker exposu	re for: PROC8a, PROC8b, PROC21, PROC24
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	0,5 - 10 kPa
Frequency and duration of use	Covers daily exposures up	to 8 hours
Human factors not influenced by	Assumes activities are at a	mbient temperature.
risk management	Assumes a good basic star	ndard of occupational hygiene is implemented.
-	Disposal of wastes Transfer of process wastes to storage containers	Limit the substance content in the product to 25 %. Provide extract ventilation to material transfer points and other openings. Avoid carrying out operation for more than 15 minutes.(PROC8a, PROC8b)
Technical conditions and measures to control dispersion from source towards the worker	Preparation of material for application (emitted dust)	Limit the substance content in the product to 10 %. Provide extract ventilation to points where emissions occur.(PROC21)
	Operation and lubrication of high energy open equipment (emitted dust)	Limit the substance content in the product to 25 %. Provide extract ventilation to points where emissions occur.(PROC24)
3. Exposure estimation and	reference to its source	

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Environment

ESVOC SPERC 4.3a.v1: Environmental exposure estimation is based on Ecetoc TRA model v2. ESVOC SPERC 4.3a.v1: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ESVOC SPERC 4.3a.v1			Msafe	3107kg/day	
ESVOC SPERC 4.3a.v1		Fresh water	exposure estimate	0,000532mg/L	0,0605
ESVOC SPERC 4.3a.v1		Fresh water sediment	exposure estimate	0,137mg/kg dry weight (d.w.)	0,0605
ESVOC SPERC 4.3a.v1		Marine water	exposure estimate	0,0000519mg/ L	0,0589
ESVOC SPERC 4.3a.v1		Marine sediment	exposure estimate	0,0134mg/kg dry weight (d.w.)	0,059
ESVOC SPERC 4.3a.v1		Sewage treatment plant (STP)	exposure estimate	0,00446mg/L	0,000675
ESVOC SPERC 4.3a.v1		Indirect exposure to humans via the environment	exposure estimate		0,000708
ESVOC SPERC 4.3a.v1		Agricultural soil	exposure estimate	0,0116mg/kg dry weight (d.w.)	0,107
ESVOC SPERC 4.3a.v1		Air	exposure estimate	0,00753	

Workers

PROC8b, PROC21, PROC24: Advanced REACH Tool (ART model) (inhalative exposure) PROC8a, PROC8b, PROC21, PROC24: ECETOC TRA model v2

Specific conditions	Exposure routes	Level of Exposure	RCR		
	Worker - inhalative, long- term - systemic	0,09ppm	0,0151		
	Worker - inhalative, long- term	0,09ppm	0,0853		
	Worker - dermal, short- term - local	0,0124mg/cm2	0,0769		
	Worker - dermal, short- term - local	0,03mg/cm2	0,186		
	Worker - dermal, short-	0,06mg/cm2	0,373		
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	Specific conditions	Specific conditions Exposure routes Worker - inhalative, long-term - systemic Worker - inhalative, long-term Worker - inhalative, long-term Worker - dermal, short-term - local Worker - dermal, short-term - local	Specific conditionsExposure routesLevel of ExposureWorker - inhalative, long- term - systemic0,09ppmWorker - inhalative, long- term0,09ppmWorker - dermal, short- term - local0,0124mg/cm2Worker - dermal, short- term - local0,03mg/cm2Worker - dermal, short- term - local0,06mg/cm2		



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	term - local		
PROC21	 Worker - inhalative, long- term	0,6ppm	0,568
PROC24	 Worker - inhalative, long- term	2,20ppm	0,368
PROC24	 Worker - dermal, short- term - local	0,0124mg/cm2	0,0769

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-forindustries-libraries.html).

Health

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES



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1. Short title of Exposure Scenario 18: Use as a chemical stripper

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC21: Low energy manipulation of substances bound in materials and/ or articles PROC24: High (mechanical) energy work-up of substances bound in materials and/ or articles
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

Substance is complex UVCB, Non-hydrophobic.

, Readily biodegradable.

, ESVOC spERC 8.3b.v1 has been used to evaluate the exposure for the environment.

, For more information on ESVOC spERC from the Solvents sector, please visit the website:

www.esig.org.

	Amounts used in the EU (tonnes/year)	100
	Fraction of EU tonnage used in region:	0,1
Amount used	Regional use tonnage (tons/year):	10
	Fraction of regional tonnage used locally:	0,0005
	Maximum daily site tonnage (kg/day):	0,0137
	Annual site tonnage	0,005
	Flow rate of receiving surface water	18.000 m3/d
Environment factors not influenced by risk management	Dilution Factor (River)	10
initiation by not management	Dilution Factor (Coastal Areas)	100
	Wide dispersive use	
Other given operational	Number of emission days per year	365
conditions affecting environmental exposure	Emission or Release Factor: Air	0,98
	initial release prior to RMM	,
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	-			
	Emission or Release Factor: Water	0,01		
	initial release prior to RMM	,		
	Emission or Release Factor: Soil	0,01		
	initial release prior to RMM, .			
	Indoor or outdoor use			
Technical conditions and measures at process level to prevent release Technical onsite conditions and		charge consistent with regulatory requirements. ross sites thus conservative process release		
measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site				
	Type of Sewage Treatment Plant	Municipal sewage treatment plant		
Conditions and measures related	Flow rate of sewage treatment plant effluent	2.000 m3/d		
to sewage treatment plant	Degradation efficiency	96,2 %		
	Percentage removed from waste water	96,2 %		
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.		
Conditions and measures related to external recovery of waste	Recovery Methods	External recovery and recycling of waste should comply with applicable local and/or national regulations.		
2.2 Contributing scenario co	ntrolling worker exposu	re for: PROC8a, PROC8b, PROC21, PROC24		
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	0,5 - 10 kPa		
Frequency and duration of use	Covers daily exposures up to 8 hours			
Human factors not influenced by	Assumes activities are at a	mbient temperature.		
risk management	Assumes a good basic standard of occupational hygiene is implemented.			



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	Disposal of wastes Transfer of process wastes to storage containers	Limit the substance content in the product to 25 %. Provide extract ventilation to material transfer points and other openings. Avoid carrying out operation for more than 15 minutes.(PROC8a, PROC8b)
Technical conditions and measures to control dispersion from source towards the worker	Preparation of material for application Low energy spreading using hand held tools	Limit the substance content in the product to 10 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC21)
	Preparation of material for application Operation and lubrication of high energy open equipment (emitted dust)	Limit the substance content in the product to 10 %. Provide extract ventilation to points where emissions occur. Avoid carrying out operation for more than 15 minutes.(PROC24)
Conditions and measures related to personal protection, hygiene and health evaluation	Preparation of material for application Low energy spreading using hand held tools	Use suitable eye protection. Wear chemically resistant gloves.(PROC21)

3. Exposure estimation and reference to its source

Environment

ESVOC SPERC 8.3b.v1: Environmental exposure estimation is based on Ecetoc TRA model v2. ESVOC SPERC 8.3b.v1: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR	
ESVOC SPERC 8.3b.v1			Msafe	1,4kg/day		
ESVOC SPERC 8.3b.v1		Fresh water	exposure estimate	0,0000892mg/ L	0,0101	
ESVOC SPERC 8.3b.v1		Fresh water sediment	exposure estimate	0,0230mg/kg dry weight (d.w.)	0,0101	
ESVOC SPERC 8.3b.v1		Marine water	exposure estimate	0,0000754mg/ L	0,00857	
ESVOC SPERC 8.3b.v1		Marine sediment	exposure estimate	0,00195mg/kg dry weight (d.w.)	0,00858	
ESVOC SPERC 8.3b.v1		Sewage treatment plant (STP)	exposure estimate	0,0000026mg/ L	< 0,001	
ESVOC SPERC 8.3b.v1		Indirect exposure to humans via the environment	exposure estimate		0,000708	
ESVOC SPERC		Agricultural soil	exposure	0,0000104mg/	0,000071	
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8.3b.v1		estimate	kg dry weight (d.w.)	
ESVOC SPERC 8.3b.v1	 Air	exposure estimate	0,0000743	

Workers

PROC8a, PROC8b, PROC21, PROC24: Advanced REACH Tool (ART model) (inhalative exposure) PROC8a, PROC8b, PROC21, PROC24: ECETOC TRA model v2

Contributing	Specific conditions	Exposure routes	Level of Exposure	RCR
Scenario				
PROC8a		Worker - inhalative, long- term	0,09ppm	0,0151
PROC8a		Worker - dermal, short- term - local	0,06mg/cm2	0,373
PROC8b		Worker - inhalative, long- term	0,3ppm	0,284
PROC8b		Worker - dermal, short- term - local	0,03mg/cm2	0,186
PROC21		Worker - inhalative, long- term	0,660ppm	0,110
PROC21		Worker - dermal, short- term - local	0,0124mg/cm2	0,0769
PROC24		Worker - inhalative, long- term	2,20ppm	0,368
PROC24		Worker - dermal, short- term - local	0,0247mg/cm2	0,154

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Health

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

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1. Short title of Exposure Scenario 19: Use as a chemical stripper

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)		
Chemical product category	PC9a: Coatings and paints, thinners, paint removers		
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems		

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

Substance is complex UVCB, Non-hydrophobic.

, Readily biodegradable.

, ESVOC spERC 8.3c.v1 has been used to evaluate the exposure for the environment.

, For more information on ESVOC spERC from the Solvents sector, please visit the website:

www.esig.org.

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 20 %.
	Amounts used in the EU (tonnes/year)	100
	Fraction of EU tonnage used in region:	0,1
Amount used	Regional use tonnage (tons/year):	10
	Fraction of regional tonnage used locally:	0,0005
	Maximum daily site tonnage (kg/day):	0,0137
	Annual site tonnage	0,005
	Flow rate of receiving surface water	18.000 m3/d
Environment factors not influenced by risk management	Dilution Factor (River)	10
inndended by hak management	Dilution Factor (Coastal Areas)	100
	Wide dispersive use	
	Number of emission days per year	365
Other given operational	Emission or Release Factor: Air	0,985
conditions affecting environmental exposure	initial release prior to RMM	, .
	Emission or Release Factor: Water	0,01
	initial release prior to RMM	,
	Emission or Release	0,005
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	Factor: Soil		
	initial release prior to RMM, .		
	Indoor or outdoor use	, .	
Technical conditions and measures at process level to prevent release Technical onsite conditions and	Prevent environmental discharge consistent with regulatory requirements. Common practices vary across sites thus conservative process release estimates used.		
measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site			
	Type of Sewage Treatment Plant	Municipal sewage treatment plant	
Conditions and measures related	Flow rate of sewage treatment plant effluent	2.000 m3/d	
to sewage treatment plant	Degradation efficiency	96,2 %	
	Percentage removed from waste water	96,2 %	
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.	
Conditions and measures related to external recovery of waste	Recovery Methods	External recovery and recycling of waste should comply with applicable local and/or national regulations.	
2.2 Contributing scenario co	ntrolling consumer expo	osure for: PC9a	
	Concentration of the		
	Substance in Mixture/Article	Concentration of substance in product: 0% - 0,25%	
Product characteristics	Substance in	Concentration of substance in product: 0% - 0,25% liquid	
Product characteristics	Substance in Mixture/Article Physical Form (at time of		
	Substance in Mixture/Article Physical Form (at time of use) Vapour pressure	liquid 519 Pa	
Product characteristics Amount used	Substance in Mixture/Article Physical Form (at time of use)	liquid 519 Pa 3750 g	
Amount used	Substance in Mixture/Article Physical Form (at time of use) Vapour pressure Amount used per event	liquid 519 Pa	
	Substance in Mixture/Article Physical Form (at time of use) Vapour pressure Amount used per event Frequency of use	liquid 519 Pa 3750 g 1 Times per day	
Amount used Frequency and duration of use Human factors not influenced by risk management	Substance in Mixture/Article Physical Form (at time of use) Vapour pressure Amount used per event Frequency of use Frequency of use Exposure duration per	liquid 519 Pa 3750 g 1 Times per day 2 days/year	
Amount used Frequency and duration of use Human factors not influenced by risk management Other given operational conditions affecting consumers exposure	Substance in Mixture/Article Physical Form (at time of use) Vapour pressure Amount used per event Frequency of use Frequency of use Exposure duration per event	liquid 519 Pa 3750 g 1 Times per day 2 days/year 2,20 h	
Amount used Frequency and duration of use Human factors not influenced by risk management Other given operational conditions affecting consumers	Substance in Mixture/Article Physical Form (at time of use) Vapour pressure Amount used per event Frequency of use Frequency of use Exposure duration per event Exposed skin area Room size	liquid 519 Pa 3750 g 1 Times per day 2 days/year 2,20 h Covers skin contact area up to 857,50 cm ²	
Amount used Frequency and duration of use Human factors not influenced by risk management Other given operational conditions affecting consumers exposure Conditions and measures related	Substance in Mixture/Article Physical Form (at time of use) Vapour pressure Amount used per event Frequency of use Frequency of use Exposure duration per event Exposed skin area Room size	liquid 519 Pa 3750 g 1 Times per day 2 days/year 2,20 h Covers skin contact area up to 857,50 cm ² 20 m3 ent measure identified beyond those operational	



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behavioural advice, personal protection and hygiene)

conditions stated.

3. Exposure estimation and reference to its source

Environment

ESVOC SPERC 8.3c.v1: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ESVOC SPERC 8.3c.v1		Fresh water	exposure estimate	0,0000892mg/ L	0,0101
ESVOC SPERC 8.3c.v1		Fresh water sediment	exposure estimate	0,0230mg/kg dry weight (d.w.)	0,0101
ESVOC SPERC 8.3c.v1		Marine water	exposure estimate	0,0000075mg/ L	0,00857
ESVOC SPERC 8.3c.v1		Marine sediment	exposure estimate	0,00195mg/kg dry weight (d.w.)	0,00858
ESVOC SPERC 8.3c.v1		Sewage treatment plant (STP)	exposure estimate	< 0,0001mg/L	< 0,0001
ESVOC SPERC 8.3c.v1		Indirect exposure to humans via the environment	exposure estimate		0,000708
ESVOC SPERC 8.3c.v1		Agricultural soil	exposure estimate	0,0000104mg/ kg dry weight (d.w.)	0,000071
ESVOC SPERC 8.3c.v1		Air	exposure estimate	0,0000743	

Consumers

PC9a: ECETOC TRA				
Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PC9a		consumer dermal, acute - local	0,0194mg/cm2	0,914
PC9a		Consumer - inhalative, long-term - systemic	0,120ppm	0,0837

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may

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be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Health

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES



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Main User Groups	SU 3: Industrial uses: Uses sites	s of substances as such or in preparations at industrial	
Sectors of end-use	SU 10: Formulation [mixing alloys)	g] of preparations and/ or re-packaging (excluding	
Process categories	 PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15: Use as laboratory reagent 		
Environmental Release Categories	ERC2: Formulation of prep	parations	
Activity	Transport and Distribution, This use is exempted from registration according to Art.2 (5)(6) of the REACH regulation (EC) No 1907/2006. Therefore the conditions and measures described in this Exposure Scenario are only intended for a technical function of the substance		
2.1 Contributing scenario co	ontrolling environmental	exposure for: ERC2	
Substance is complex UVCB, , Readily biodegradable.	Non-hydrophobic.		
	Amounts used in the EU (tonnes/year)	80	
		80	
Amount used	(tonnes/year) Fraction of EU tonnage		
Amount used	(tonnes/year) Fraction of EU tonnage used in region: Regional use tonnage	1	
Amount used	(tonnes/year) Fraction of EU tonnage used in region: Regional use tonnage (tons/year): Fraction of regional	1 80	
Amount used	(tonnes/year) Fraction of EU tonnage used in region: Regional use tonnage (tons/year): Fraction of regional tonnage used locally: Maximum daily site	1 80 0,15	
Amount used Environment factors not influenced by risk management	(tonnes/year) Fraction of EU tonnage used in region: Regional use tonnage (tons/year): Fraction of regional tonnage used locally: Maximum daily site tonnage (kg/day):	1 80 0,15 48	



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	Dilution Factor (Coastal Areas)	100	
	Continuous release		
	Number of emission days per year	250	
	Emission or Release Factor: Air	0,025	
	initial release prior to RMM	,.	
	Emission or Release Factor: Water	0,02	
	initial release prior to RMM	, .	
Other given operational	Emission or Release Factor: Soil	0,0001	
conditions affecting environmental exposure	initial release prior to RMM	, .	
	Emission or Release Factor: Air	0,025	
	based on initial default valu	es with subsequent RMM, .	
	Emission or Release Factor: Water	0,001	
	based on initial default values with subsequent RMM, .		
	Emission or Release Factor: Soil	0,0001	
	based on initial default values with subsequent RMM, .		
	Indoor use		
Technical conditions and measures at process level to prevent release	Prevent environmental discharge consistent with regulatory requirements. Common practices vary across sites thus conservative process release estimates used.		
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to			
prevent/limit release from the site			
	Type of Sewage Treatment Plant	Municipal sewage treatment plant	
Conditions and measures related to sewage treatment plant	Flow rate of sewage treatment plant effluent	2.000 m3/d	
to sewage treatment plant	Degradation efficiency	96,2 %	
	Percentage removed from waste water	96,2 %	
Conditions and measures related to external recovery of waste	Recovery Methods	External treatment and disposal of waste should comply with applicable local and/or national regulations.	
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		hour.(PROC8b)
	Equipment cleaning and maintenance	Limit the substance content in the product to 5 %. Drain down system prior to equipment break-in or maintenance. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 1 hour.(PROC8b)
	Equipment cleaning and maintenance	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Limit the substance content in the product to 5 %. Drain down system prior to equipment opening or maintenance.(PROC8b)
	Drum and small package filling	Avoid carrying out operation for more than 1 hour. Limit the substance content in the product to 25 %. Provide extract ventilation to material transfer points and other openings.(PROC9)
	Laboratory activities	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 1 hour. Limit the substance content in the product to 25 %.(PROC15)
	Process sampling	Use suitable eye protection and gloves.(PROC3)
	Filling/ preparation of equipment from drums or containers. Batch process	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.(PROC5)
	Mixing operations (open systems) Batch process	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.(PROC5)
Conditions and measures related to personal protection, hygiene and health evaluation	Transfer from/pouring from containers With sample collection Non-dedicated facility	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.(PROC8a)
	Transfer from/pouring from containers With sample collection Dedicated facility	Wear chemically resistant gloves. Use suitable eye protection.(PROC8b)
	Process sampling	Wear chemically resistant gloves. Use suitable eye protection.(PROC8b)
	Drum and small package filling	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection.(PROC9)

3. Exposure estimation and reference to its source

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Environment

ERC2: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC2			Msafe	375kg/day	
ERC2		Fresh water	exposure estimate	0,000849mg/L	0,0965
ERC2		Fresh water sediment	exposure estimate	0,219mg/kg dry weight (d.w.)	0,0966
ERC2		Marine water	exposure estimate	0,0000836mg/ L	0,095
ERC2		Marine sediment	exposure estimate	0,0216mg/kg dry weight (d.w.)	0,0951
ERC2		Sewage treatment plant (STP)	exposure estimate	0,00764mg/L	0,00116
ERC2		Indirect exposure to humans via the environment	exposure estimate		0,000708
ERC2		Agricultural soil	exposure estimate	0,0189mg/kg dry weight (d.w.)	0,182
ERC2		Air	exposure estimate	0,00197	

Workers

PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC15: Advanced REACH Tool (ART model) (inhalative exposure)

PROC1, PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC15: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Worker - inhalative, long- term - systemic	0,01ppm	0,00947
PROC1, PROC3		Worker - dermal, short- term - local	0,0250mg/cm2	0,155
PROC3		Worker - inhalative, long- term	4,20ppm	0,702
PROC8a, PROC8b		Worker - inhalative, long- term	1,80ppm	0,301
PROC5		Worker - inhalative, long- term	1,1ppm	0,184
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PROC5

 Worker - dermal, short- term - local	0,0999ppm	0,621
 Worker - inhalative, long- term	8,40ppm	0,796
 Worker - dermal, short- term - local	0,0150mg/cm2	0,0932
 Worker - inhalative, long- term	0,6ppm	0,568
 Worker - dermal, short- term - local	0,06mg/cm2	0,0373
 	term - local Worker - inhalative, long-term Worker - dermal, short-term - local Worker - inhalative, long-term Worker - inhalative, long-term Worker - dermal, short-term - local	term - local 0,0999ppm Worker - inhalative, long- term 8,40ppm Worker - dermal, short- term - local 0,0150mg/cm2 Worker - inhalative, long- term 0,6ppm Worker - dermal, short- term 0,06ppm

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4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Health

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES



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1. Short title of Exposure		
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industria sites	
Sectors of end-use	SU 10: Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)	
Process categories	 PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC13: Treatment of articles by dipping and pouring PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent 	
Environmental Release Categories	ERC2: Formulation of preparations	
Activity	This use is exempted from registration according to Art.2 (5)(6) of the REACH regulation (EC) No 1907/2006. Therefore the conditions and measures described in this Exposure Scenario are only intended for a technical function of the substance	
2.1 Contributing scenario	controlling environmental exposure for: ERC2	
, COLIPA SpERC 2.1.c.v1 , COLIPA SpERC 2.1.d.v1 , COLIPA SpERC 2.1.e.v1 , COLIPA SpERC 2.1.f.v1 , COLIPA SpERC 2.1.g.v1 , COLIPA SpERC 2.1.i.v1 , COLIPA SpERC 2.1.j.v1 , COLIPA SpERC 2.1.j.v1	B, Non-hydrophobic. has been used to evaluate the exposure for the environment.	

, COLIPA SpERC 2.2.b.v1 has been used to evaluate the exposure for the environment.

, COLIPA SpERC 2.2.c.v1 has been used to evaluate the exposure for the environment.

, AISE spERC 2.1.b.v1 has been used to evaluate the exposure for the environment.



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, AISE spERC 2.1.c.v1 has been used to evaluate the exposure for the environment.

, AISE spERC 2.1.e.v1 has been used to evaluate the exposure for the environment.

, AISE spERC 2.1.f.v1 has been used to evaluate the exposure for the environment.

, AISE spERC 2.1.k.v1 has been used to evaluate the exposure for the environment.

, AISE spERC 2.1.I.v1 has been used to evaluate the exposure for the environment.

, AISE spERC 2.1.h.v1 has been used to evaluate the exposure for the environment.

, AISE spERC 2.1.i.v1 has been used to evaluate the exposure for the environment.

, For more information on COLIPA spERC from the cosmetic sector, please visit the website: www.cosmeticseurope.eu.

, For more information on AISE spERC from the Detergents, Cleaning & Maintenance sector, please visit the website: www.aise.eu.

	Amounts used in the EU (tonnes/year)	2000
	Fraction of EU tonnage used in region:	1
	Regional use tonnage (tons/year):	100 (AISE 2.1.b.v1, AISE 2.1.c.v1, AISE 2.1.e.v1, AISE 2.1.f.v1, AISE 2.1.h.v1, AISE 2.1.i.v1, AISE 2.1.k.v1, AISE 2.1.l.v1, COLIPA 2.1.b.v1, COLIPA 2.1.c.v1, COLIPA 2.1.d.v1, COLIPA 2.1.e.v1, COLIPA 2.1.f.v1, COLIPA 2.1.g.v1, COLIPA 2.1.h.v1, COLIPA 2.1.j.v1, COLIPA 2.2.b.v1, COLIPA 2.2.c.v1, COLIPA 2.3.b.v1, COLIPA 2.3.c.v1, COLIPA 2.1.i.v1)
	Fraction of regional tonnage used locally:	1 (AISE 2.1.b.v1, AISE 2.1.e.v1, AISE 2.1.h.v1, AISE 2.1.k.v1, COLIPA 2.1.b.v1, COLIPA 2.1.d.v1, COLIPA 2.1.f.v1, COLIPA 2.2.b.v1, COLIPA 2.3.b.v1, COLIPA 2.1.i.v1)
Amount used	Fraction of regional tonnage used locally:	0,0220 (COLIPA 2.1.c.v1, COLIPA 2.1.e.v1, COLIPA 2.1.g.v1, COLIPA 2.1.j.v1, COLIPA 2.2.c.v1, COLIPA 2.3.c.v1)
	Fraction of regional tonnage used locally:	0,020 (AISE 2.1.c.v1, AISE 2.1.f.v1, AISE 2.1.i.v1, AISE 2.1.l.v1)
	Maximum daily site tonnage (kg/day):	10 (COLIPA 2.1.c.v1, COLIPA 2.1.e.v1, COLIPA 2.1.g.v1, COLIPA 2.1.j.v1, COLIPA 2.2.c.v1, COLIPA 2.3.b.v1, COLIPA 2.3.c.v1, AISE 2.1.c.v1, AISE 2.1.f.v1, AISE 2.1.i.v1, AISE 2.1.l.v1)
	Maximum daily site tonnage (kg/day):	454,55 (COLIPA 2.1.b.v1, COLIPA 2.1.i.v1)
	Maximum daily site tonnage (kg/day):	455 (COLIPA 2.1.d.v1, COLIPA 2.1.f.v1, COLIPA 2.2.b.v1, COLIPA 2.3.b.v1, AISE 2.1.b.v1, AISE 2.1.e.v1, AISE 2.1.h.v1, AISE 2.1.k.v1)
	Annual site tonnage	100 (COLIPA 2.1.b.v1, COLIPA 2.1.d.v1, COLIPA 2.1.e.v1, COLIPA 2.2.b.v1, COLIPA 2.3.b.v1, AISE 2.1.b.v1, AISE 2.1.e.v1, AISE 2.1.h.v1, AISE



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		2.1.k.v1, COLIPA 2.1.i.v1)		
	Annual site tonnage	2,2 (COLIPA 2.1.c.v1, COLIPA 2.1.e.v1, COLIPA 2.1.g.v1, COLIPA 2.1.j.v1, COLIPA 2.2.c.v1)		
	Annual site tonnage	0,2 (COLIPA 2.3.c.v1, AISE 2.1.c.v1, AISE 2.1.f.v1, AISE 2.1.i.v1, AISE 2.1.l.v1)		
Frequency and duration of use	Continuous exposure	Continuous release		
	Flow rate of receiving surface water	18.000 m3/d		
Environment factors not influenced by risk management	Dilution Factor (River)	10		
initiation of by this management	Dilution Factor (Coastal Areas)	100		
	2.1.b.v1, COLIPA 2.1.c.v1,	2.1.b.v1, AISE 2.1.e.v1, AISE 2.1.h.v1, COLIPA COLIPA 2.1.d.v1, COLIPA 2.1.e.v1, COLIPA COLIPA 2.1.j.v1, COLIPA 2.2.b.v1, COLIPA 2.2.c.v1, 2.1.i.v1)		
	Number of emission days per year	220 (AISE 2.1.b.v1, AISE 2.1.e.v1, AISE 2.1.h.v1, COLIPA 2.1.b.v1, COLIPA 2.1.c.v1, COLIPA 2.1.d.v1, COLIPA 2.1.e.v1, COLIPA 2.1.f.v1, COLIPA 2.1.g.v1, COLIPA 2.1.j.v1, COLIPA 2.2.b.v1, COLIPA 2.2.c.v1, COLIPA 2.3.b.v1, COLIPA 2.1.i.v1)		
	Continuous release(AISE 2.1.c.v1, AISE 2.1.f.v1, AISE 2.1.i.v1, AISE 2.1.l.v1, COLIPA 2.3.c.v1)			
	Number of emission days per year	20 (AISE 2.1.c.v1, AISE 2.1.f.v1, AISE 2.1.i.v1, AISE 2.1.I.v1, COLIPA 2.3.c.v1)		
	Emission or Release Factor: Air	0,0002 (AISE 2.1.b.v1, AISE 2.1.c.v1, AISE 2.1.e.v1, AISE 2.1.f.v1)		
Other given operational conditions affecting environmental exposure	initial release prior to RMM 2.1.f.v1)	initial release prior to RMM, . (AISE 2.1.b.v1, AISE 2.1.c.v1, AISE 2.1.e.v1, AISE		
environmental exposure	Emission or Release Factor: Water	0,002 (COLIPA 2.1.b.v1, COLIPA 2.3.c.v1, AISE 2.1.c.v1, AISE 2.1.i.v1, AISE 2.1.k.v1)		
	initial release prior to RMM, . (COLIPA 2.1.b.v1, COLIPA 2.3.c.v1, AISE 2.1.c.v1, AISE 2.1.i.v1, AISE 2.1.k.v1)			
	Emission or Release Factor: Water	0,004 (AISE 2.1.I.v1, COLIPA 2.1.c.v1)		
	based on initial default valu 2.1.c.v1)	based on initial default values with subsequent RMM, . (AISE 2.1.I.v1, COLIPA 2.1.c.v1)		
	Emission or Release Factor: Water	0,03 (COLIPA 2.1.e.v1)		
	Emission or Release Factor: Water	0,015 (COLIPA 2.1.d.v1)		
		ues with subsequent RMM, . (COLIPA 2.1.d.v1)		
	Emission or Release Factor: Water	0,01 (COLIPA 2.1.f.v1)		
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	based on initial default valu	ues with subsequent RMM, . (COLIPA 2.1.f.v1)
	Emission or Release Factor: Water	0,02 (COLIPA 2.1.g.v1, COLIPA 2.1.i.v1)
	initial release prior to RMM	, . (COLIPA 2.1.g.v1, COLIPA 2.1.i.v1)
	Emission or Release Factor: Water	0,04 (COLIPA 2.1.j.v1)
	Emission or Release Factor: Water	0,001 (AISE 2.1.b.v1, AISE 2.1.h.v1, COLIPA 2.3.b.v1)
	Emission or Release Factor: Water	0,0002 (AISE 2.1.f.v1)
	Emission or Release Factor: Water	0,0001 (AISE 2.1.e.v1)
	Indoor use	
Technical conditions and measures at process level to prevent release Technical onsite conditions and		charge consistent with regulatory requirements. ross sites thus conservative process release
measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site		
	Type of Sewage Treatment Plant	Domestic sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	96,2 %
	Percentage removed from waste water	96,2 %
Conditions and measures related o sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant (only AISE 2.1.b.v1, AISE 2.1.c.v1, AISE 2.1.e.v1, AISE 2.1.f.v1)
	Flow rate of sewage treatment plant effluent	2.000 m3/d (only AISE 2.1.b.v1, AISE 2.1.c.v1, AISE 2.1.e.v1, AISE 2.1.f.v1)
	Degradation efficiency	99 % (only AISE 2.1.b.v1, AISE 2.1.c.v1, AISE 2.1.e.v1, AISE 2.1.f.v1)
	Percentage removed from waste water	99 % (only AISE 2.1.b.v1, AISE 2.1.c.v1, AISE 2.1.e.v1, AISE 2.1.f.v1)
Conditions and measures related	Recovery Methods	External treatment and disposal of waste should comply with applicable local and/or national regulations.
o external recovery of waste	Recovery Methods	External recovery and recycling of waste should comply with applicable local and/or national regulations.

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	9, PROC13, PROC14, PR	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	0,5 - 10 kPa
Frequency and duration of use	Covers daily exposures up	to 8 hours
Human factors not influenced by	Assumes activities are at a	mbient temperature.
risk management	Assumes a good basic star	ndard of occupational hygiene is implemented.
	General exposures (closed systems)	Handle substance within a closed system. Store substance within a closed system. Limit the substance content in the product to 25 %.(PROC1)
	Initial factory fill of equipment Continuous process With sample collection	Avoid carrying out operation for more than 4 hours. Limit the substance content in the product to 25 %. Provide extract ventilation to points where emissions occur.(PROC2, PROC9)
	Material transfers With sample collection	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 4 hours. Limit the substance content in the product to 25 %.(PROC1, PROC2, PROC3)
Technical conditions and	Mixing operations Continuous process With sample collection	Avoid carrying out operation for more than 4 hours. Limit the substance content in the product to 25 %. Provide extract ventilation to points where emissions occur.(PROC3)
measures to control dispersion from source towards the worker	Mixing operations	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 4 hours. Limit the substance content in the product to 25 %.(PROC4)
	Mixing operations (open systems) Batch process	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Limit the substance content in the product to 25 %. Avoid carrying out operation for more than 4 hours.(PROC5)
	Filling/ preparation of equipment from drums or containers. Batch process	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Limit the substance content in the product to 25 %. Avoid carrying out operation for more than 4 hours.(PROC5)
	Transfer from/pouring from containers	Limit the substance content in the product to 25 %. Avoid carrying out operation for more than 1 hour.



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With sample collection Non-dedicated facility	Provide extract ventilation to material transfer point and other openings.(PROC8a)
Transfer from/pouring from containers With sample collection Dedicated facility	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 1 hour. Limit the substance content in the product to 25 %.(PROC8b)
Equipment cleaning and maintenance	Limit the substance content in the product to 5 %. Provide extract ventilation to points where emissions occur. Avoid carrying out operation for more than 1 hour.(PROC8b)
Drum and small package filling Non-dedicated facility	Avoid carrying out operation for more than 1 hour. Limit the substance content in the product to 25 % Provide extract ventilation to material transfer poin and other openings.(PROC9, PROC8a)
Drum and small package filling Dedicated facility	Limit the substance content in the product to 1 %. Provide extract ventilation to material transfer poin and other openings. Avoid carrying out operation for more than 4 hours.(PROC9, PROC8b)
Small package filling	Limit the substance content in the product to 1 %. Fill containers/cans at dedicated filling points supplied with local extract ventilation.(PROC9)
Drum and small package filling Bulk transfers Dedicated facility	Limit the substance content in the product to 25 % Provide a good standard of general ventilation (nor less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 1 hour.(PROC9, PROC8b)
Small package filling	Limit the substance content in the product to 1 %. Fill containers/cans at dedicated filling points supplied with local extract ventilation.(PROC9)
Dipping, immersion and pouring	Limit the substance content in the product to 1 %. Provide extract ventilation to points where emissions occur.(PROC13)
Production of articles by dipping and pouring	Limit the substance content in the product to 1 %. Provide a good standard of general ventilation (no less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 15 minutes.(PROC13)
Production or preparation or articles by tabletting, compression, extrusion or pelletisation	Limit the substance content in the product to 1 %. Provide a good standard of general ventilation (no less than 3 to 5 air changes per hour).(PROC14)
	Limit the substance content in the product to 1 %.

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		less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 1 hour.(PROC8b)
	Laboratory activities	Limit the substance content in the product to 1 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 1 hour.(PROC15)
	Mixing operations (open systems) Batch process	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.(PROC5)
	Filling/ preparation of equipment from drums or containers.	Wear chemically resistant gloves. Use suitable eye protection.(PROC5)
Conditions and measures related	Transfer from/pouring from containers With sample collection Non-dedicated facility	Wear chemically resistant gloves. Use suitable eye protection.(PROC8a)
to personal protection, hygiene and health evaluation	Transfer from/pouring from containers With sample collection Dedicated facility	Wear chemically resistant gloves. Use suitable eye protection.(PROC8b)
	Drum and small package filling Non-dedicated facility	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection.(PROC9, PROC8a)
	Drum and small package filling Bulk transfers Dedicated facility	Wear chemically resistant gloves. Use suitable eye protection.(PROC9, PROC8b)

3. Exposure estimation and reference to its source

Environment

AISE SPERC 2.1.b.v1, COLIPA SPERC 2.1.b.v1: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
COLIPA SPERC 2.1.b.v1			Msafe	1102kg/day	
COLIPA SPERC 2.1.b.v1		Fresh water	exposure estimate	0,00182mg/L	0,207
COLIPA SPERC 2.1.b.v1		Fresh water sediment	exposure estimate	0,470mg/kg dry weight (d.w.)	0,207
COLIPA SPERC 2.1.b.v1		Marine water	exposure estimate	0,000180mg/L	0,205
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		1	I.	
COLIPA SPERC 2.1.b.v1	 Sewage treatment plant (STP)	exposure estimate	0,0174mg/L	0,00263
COLIPA SPERC 2.1.b.v1	 Marine sediment	exposure estimate	0,0466mg/kg dry weight (d.w.)	0,205
COLIPA SPERC 2.1.b.v1	 Indirect exposure to humans via the environment	exposure estimate		0,000708
COLIPA SPERC 2.1.b.v1	 Agricultural soil	exposure estimate	0,0426mg/kg dry weight (d.w.)	0,413
COLIPA SPERC 2.1.b.v1	 Air	exposure estimate	0,00197	
AISE SPERC 2.1.b.v1	 Fresh water	exposure estimate	0,000953mg/L	0,108
AISE SPERC 2.1.b.v1	 Fresh water sediment	exposure estimate	0,246mg/kg dry weight (d.w.)	0,108
AISE SPERC 2.1.b.v1	 Marine water	exposure estimate	0,0000940mg/ L	0,107
AISE SPERC 2.1.b.v1	 Marine sediment	exposure estimate	0,0243mg/kg dry weight (d.w.)	0,107
AISE SPERC 2.1.b.v1	 Sewage treatment plant (STP)	exposure estimate	0,00868mg/L	0,00132
AISE SPERC 2.1.b.v1	 Indirect exposure to humans via the environment	exposure estimate		0,000704
AISE SPERC 2.1.b.v1	 Agricultural soil	exposure estimate	0,0213mg/kg dry weight (d.w.)	0,206
AISE SPERC 2.1.b.v1	 Air	exposure estimate	0,000105	

Workers

PROC1, PROC2, PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC13, PROC14: ECETOC TRA model v2 PROC2, PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC13, PROC14, PROC15: Advanced REACH Tool (ART model) (inhalative exposure)

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Worker - inhalative, long- term - systemic	0,006ppm	0,00568
PROC1		Worker - dermal, short- term - local	0,0150mg/cm2	0,0799

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PROC2, PROC3	 Worker - inhalative, long- term	3,1ppm	0,518
PROC2, PROC8b	 Worker - dermal, short- term - local	0,06mg/cm2	0,319
PROC3	 Worker - dermal, short- term - local	0,0129mg/cm2	0,0799
PROC5	 Worker - inhalative, long- term	3,3ppm	0,552
PROC5	 Worker - dermal, short- term - local	0,12mg/cm2	0,639
PROC8a	 Worker - inhalative, long- term	5,0ppm	0,836
PROC8a, PROC13	 Worker - dermal, short- term - local	0,0999mg/cm2	0,532
PROC9	 Worker - dermal, short- term - local	0,05mg/cm2	0,266
PROC8b	 Worker - inhalative, long- term	5,3ppm	0,886
PROC9	 Worker - inhalative, long- term	0,7ppm	0,663
PROC13	 Worker - inhalative, long- term	4,7ppm	0,786
PROC14	 Worker - inhalative, long- term	0,5ppm	0,474
PROC14	 Worker - dermal, short- term - local	0,025mg/cm2	0,133
PROC15	 Worker - inhalative, long- term	0,140ppm	0,133
	 Worker - dermal, short- term - local	0,00250mg/cm2	0,0133

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Health

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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1. Short title of Exposure	e Scenario 22: Use of fragrances
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	 PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Use in closed, continuous process with occasional controlled exposure PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC10: Roller application or brushing PROC15: Use as laboratory reagent PROC19: Hand-mixing with intimate contact and only PPE available
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
Activity	Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities., This use is exempted from registration according to Art.2 (5)(6) of the REACH regulation (EC) No 1907/2006. Therefore the conditions and measures described in this Exposure Scenario are only intended for a technical function of the substance

2.1 Contributing scenario controlling environmental exposure for: ERC4

Substance is complex UVCB, Non-hydrophobic.

, Readily biodegradable.

, AISE spERC 4.1.v1 has been used to evaluate the exposure for the environment.

, For more information on AISE spERC from the Detergents, Cleaning & Maintenance sector, please visit the website: www.aise.eu.

	Amounts used in the EU (tonnes/year)	100
	Fraction of EU tonnage used in region:	1
Amount used	Regional use tonnage (tons/year):	100
	Fraction of regional tonnage used locally:	0,01
	Maximum daily site tonnage (kg/day):	23
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ceiving 18.000 m3/d (River) 10 (Coastal 100 ease 100 ease 220 blease 0 prior to RMM, . . blease 1 prior to RMM, . . blease 0 prior to RMM, . . cess with efficient use of raw materials. Volatile compounds mission controls. Application of the STP sludge on agricultural numental discharge consistent with regulatory requirements. ices vary across sites thus conservative process release d.
(Coastal 100 ease 220 ssion days 220 elease 0 prior to RMM, . . elease 1 prior to RMM, . . elease 0 prior to RMM, . . cess with efficient use of raw materials. Volatile compounds mission controls. Application of the STP sludge on agricultural numental discharge consistent with regulatory requirements. ices vary across sites thus conservative process release
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mission controls. Application of the STP sludge on agricultural nmental discharge consistent with regulatory requirements. ices vary across sites thus conservative process release
ices vary across sites thus conservative process release
Municipal sewage treatment plant
wage 2.000 m3/d
ficiency 96,2 %
noved 96,2 %
ods (Efficiency: > 90 %) (Waste water treatment ERC4)
nods External treatment and disposal of waste should comply with applicable local and/or national
regulations.
nods External recovery and recycling of waste should




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	Material transfers	Limit the substance content in the product to 1 %. Avoid carrying out operation for more than 1 hour. Ensure operation is undertaken outdoors.(PROC8a)
	Material transfers Dedicated facility	Limit the substance content in the product to 1 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 15 minutes.(PROC8b)
	Mixing operations Mixing operations (open systems) Batch process	Provide extract ventilation to points where emissions occur. Limit the substance content in the product to 1 %.(PROC3, PROC5)
	Rolling, Brushing	Limit the substance content in the product to 1 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 4 hours.(PROC10)
	Batch process	Limit the substance content in the product to 1 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC10)
	Laboratory activities	Limit the substance content in the product to 1 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC15)
	Mixing operations (open systems)	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection.(PROC4)
Conditions and measures related to personal protection, hygiene and health evaluation	Spraying	Wear a respirator conforming to EN140 with Type A/P2 filter or better. Wear chemically resistant gloves. Use suitable eye protection.(PROC7)
	Rolling, Brushing	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection. Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC10)

3. Exposure estimation and reference to its source

Environment

ERC4: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4			Msafe	210241kg/day	
ERC4		Fresh water	exposure estimate	0,000954mg/L	0,108

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ERC4	 Fresh water sediment	exposure estimate	0,246mg/kg dry weight (d.w.)	0,109
ERC4	 Marine water	exposure estimate	0,0000940mg/ L	0,107
ERC4	 Marine sediment	exposure estimate	0,0243mg/kg dry weight (d.w.)	0,107
ERC4	 Sewage treatment plant (STP)	exposure estimate	0,00868mg/L	0,00132
ERC4	 Indirect exposure to humans via the environment	exposure estimate		0,000708
ERC4	 Agricultural soil	exposure estimate	0,0213mg/kg dry weight (d.w.)	0,206
ERC4	 Air	exposure estimate	0,000112	

Workers

PROC1, PROC2, PROC4, PROC5, PROC7, PROC8a, PROC10, PROC14, PROC15, PROC19: ECETOC TRA model v2

PROC2, PROC4, PROC5, PROC7, PROC8a, PROC10, PROC13, PROC14, PROC15, PROC19: Advanced REACH Tool (ART model) (inhalative exposure)

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Worker - inhalative, long- term - systemic	0,001ppm	0,000947
PROC1, PROC15		Worker - dermal, short- term - local	0,0025mg/cm2	0,0155
PROC2		Worker - inhalative, long- term	0,07ppm	0,0663
PROC2		Worker - dermal, short- term - local	0,00999mg/cm2	0,062
PROC4		Worker - inhalative, long- term	1,2ppm	0,21
PROC4		Worker - dermal, short- term - local	0,05mg/cm2	0,311
PROC7		Worker - inhalative, long- term	5,2ppm	0,87
PROC7		Worker - dermal, short- term - local	0,0625ppm	0,388
PROC8a, PROC15		Worker - inhalative, long- term	0,7ppm	0,663
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PROC8a	 Worker - dermal, short- term - local	0,0999mg/cm2	0,62
PROC10	 Worker - inhalative, long- term	0,3ppm	0,284
PROC10	 Worker - dermal, short- term - local	0,04mg/cm2	0,248
PROC13	 Worker - inhalative, long- term	4,7ppm	0,786
PROC14	 Worker - inhalative, long- term	0,5ppm	0,474
PROC14	 Worker - dermal, short- term - local	0,025mg/cm2	0,133
PROC15	 Worker - inhalative, long- term	0,140ppm	0,133
	 Worker - dermal, short- term - local	0,00250mg/cm2	0,0133
PROC5	 Worker - inhalative, long- term	0,67ppm	0,112
PROC5	 Worker - dermal, short- term - local	0,0999mg/cm2	0,62
PROC19	 Worker - inhalative, long- term	2,2ppm	0,368
PROC19	 Worker - dermal, short- term - local	0,103mg/cm2	0,640

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-forindustries-libraries.html).

Health

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

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1. Short title of Exposure Sc	enario 23: Use of fragrances
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Use in closed, continuous process with occasional controlled exposure PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC10: Roller application or brushing PROC11: Non industrial spraying PROC15: Use as laboratory reagent PROC19: Hand-mixing with intimate contact and only PPE available
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC10b: Wide dispersive outdoor use of long-life articles and materials with high or intended release (including abrasive processing) ERC11b: Wide dispersive indoor use of long-life articles and materials with high or intended release (including abrasive processing)
Activity	This use is exempted from registration according to Art.2 (5)(6) of the REACH regulation (EC) No 1907/2006. Therefore the conditions and measures described in this Exposure Scenario are only intended for a technical function of the substance

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d, ERC10b, ERC11b

Substance is complex UVCB, Non-hydrophobic.

, Readily biodegradable.

, COLIPA SpERC 8a.1.a.v1 has been used to evaluate the exposure for the environment.

, COLIPA SpERC 8a.1.c.v1 has been used to evaluate the exposure for the environment.

, COLIPA SpERC 8a.1.b.v1 has been used to evaluate the exposure for the environment.

, AISE spERC 8a.1.b.v1 has been used to evaluate the exposure for the environment.

, AISE SPERC 8a.1.a.v1 has been used to evaluate the exposure for the environment.

, AISE SPERC 8a.1.c.v1 has been used to evaluate the exposure for the environment.

, For more information on COLIPA spERC from the cosmetic sector, please visit the website: www.cosmeticseurope.eu.

, For more information on AISE spERC from the Detergents, Cleaning & Maintenance sector, please visit the website: www.aise.eu.

Amount used	Amounts used in the EU (tonnes/year)	900
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	Fraction of EU tonnage used in region:	0,053 (COLIPA 8a.1.a.v1, COLIPA 8a.1.b.v1, COLIPA 8a.1.c.v1)
	Fraction of EU tonnage used in region:	0,04 (AISE 8a.1.a.v1, AISE 8a.1.b.v1, AISE 8a.1.c.v1)
	Fraction of EU tonnage used in region:	0,1 (ERC8d, ERC10b, ERC11b)
	Regional use tonnage (tons/year):	5,3 (COLIPA 8a.1.a.v1, COLIPA 8a.1.b.v1, COLIPA 8a.1.c.v1)
	Regional use tonnage (tons/year):	4 (AISE 8a.1.b.v1, AISE 8a.1.c.v1, AISE 8a.1.a.v1)
	Regional use tonnage (tons/year):	10 (ERC10b, ERC11b, ERC8d)
	Fraction of regional tonnage used locally:	0,00075 (AISE 8a.1.a.v1, AISE 8a.1.b.v1, AISE 8a.1.c.v1, COLIPA 8a.1.a.v1, COLIPA 8a.1.b.v1, COLIPA 8a.1.c.v1)
	Fraction of regional tonnage used locally:	0,002 (ERC8d, ERC10b, ERC11b)
	Maximum daily site tonnage (kg/day):	0,0109 (COLIPA 8a.1.a.v1, COLIPA 8a.1.b.v1, COLIPA 8a.1.c.v1)
	Maximum daily site tonnage (kg/day):	0,0041 (AISE 8a.1.a.v1)
	Maximum daily site tonnage (kg/day):	0,0082 (ERC8d, AISE 8a.1.b.v1, AISE 8a.1.c.v1)
	Maximum daily site tonnage (kg/day):	0,0548 (ERC10b, ERC11b)
	Annual site tonnage	0,003975 (COLIPA 8a.1.a.v1, COLIPA 8a.1.b.v1, COLIPA 8a.1.c.v1)
	Annual site tonnage	0,0015 (AISE 8a.1.a.v1)
	Annual site tonnage	0,003 (AISE 8a.1.b.v1, AISE 8a.1.c.v1)
	Annual site tonnage	0,03 (ERC8d)
	Annual site tonnage	0,02 (ERC10b, ERC11b)
	Flow rate of receiving surface water	18.000 m3/d
Environment factors not	Dilution Factor (River)	10
nfluenced by risk management	Dilution Factor (Coastal Areas)	100
	Wide dispersive use	
Other given operational	Number of emission days per year	365
conditions affecting environmental exposure	Emission or Release Factor: Air	1 (AISE 8a.1.c.v1, ERC8d, ERC10b, ERC11b, COLIPA 8a.1.b.v1)
	initial release prior to RMM COLIPA 8a.1.b.v1)	, . (AISE 8a.1.c.v1, ERC8d, ERC10b, ERC11b,
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	Emission or Release Factor: Water	1 (ERC8d, ERC10b, ERC11b, AISE 8a.1.a.v1, AISE 8a.1.b.v1, COLIPA 8a.1.a.v1, COLIPA 8a.1.c.v1)			
	initial release prior to RMM, . (ERC8d, ERC10b, ERC11b, AISE 8a.1.a.v1, AISE 8a.1.b.v1, COLIPA 8a.1.a.v1, COLIPA 8a.1.c.v1)				
	Emission or Release Factor: Soil 0,2 (ERC8d)				
	initial release prior to RMM	, . (ERC8d)			
	Emission or Release Factor: Soil	1 (ERC10b)			
	initial release prior to RMM	, . (ERC10b)			
	Indoor or outdoor use				
Technical conditions and measures at process level to prevent release Technical onsite conditions and	Prevent environmental disc Common practices vary ac estimates used.	charge consistent with regulatory requirements. ross sites thus conservative process release			
measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site					
	Type of Sewage Treatment Plant	Municipal sewage treatment plant			
Conditions and measures related to sewage treatment plant	Flow rate of sewage treatment plant effluent	2.000 m3/d			
o sewage treatment plant	Degradation efficiency	96,2 %			
	Percentage removed from waste water	96,2 %			
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.			
Conditions and measures related to external recovery of waste	Recovery Methods	External recovery and recycling of waste should comply with applicable local and/or national regulations.			
2.2 Contributing scenario co PROC8a, PROC8b, PROC	ntrolling worker exposu 10, PROC11, PROC15, P	re for: PROC1, PROC2, PROC4, PROC5, ROC19			
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.			
Product characteristics	Physical Form (at time of use)	liquid			
	Vapour pressure	0,5 - 10 kPa			
Frequency and duration of use	Covers daily exposures up	to 8 hours			



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Human factors not influenced by					
risk management	Assumes a good basic standard of occupational hygiene is implemented.				
	General exposures (closed systems)	Limit the substance content in the product to 1 %. Handle substance within a closed system. Store substance within a closed system.(PROC1, PROC2)			
	Material transfers Semi-automatic process Non-dedicated facility	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Limit the substance content in the product to 1 %. Avoid carrying out operation for more than 1 hour.(PROC8a)			
	Material transfers Manual Non-dedicated facility	Limit the substance content in the product to 1 %. Avoid carrying out operation for more than 1 hour. Provide extract ventilation to material transfer points and other openings.(PROC8a)			
	Continuous process	Limit the substance content in the product to 1 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 15 minutes.(PROC2)			
Technical conditions and	Semi-automatic process Use in closed batch process (synthesis or formulation)	Limit the substance content in the product to 1 %. Ensure operation is undertaken outdoors.(PROC4)			
measures to control dispersion from source towards the worker	Material transfers Non-dedicated facility	Limit the substance content in the product to 1 %. Avoid carrying out operation for more than 1 hour. Provide extract ventilation to material transfer points and other openings.(PROC4, PROC8a)			
	Surfaces Non-dedicated facility	Limit the substance content in the product to 1 %. Ensure operation is undertaken outdoors. Avoid carrying out operation for more than 15 minutes.(PROC10, PROC8a)			
	Spraying	Limit the substance content in the product to 1 %. Ensure operation is undertaken outdoors.(PROC11			
	Material transfers Dedicated facility	Limit the substance content in the product to 1 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 15 minutes.(PROC8b)			
	Surfaces Cleaning	Limit the substance content in the product to 1 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC10)			
	Rolling, Brushing	Limit the substance content in the product to 1 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 4			



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				hours.(PROC10)		
		Spraying		Limit the substance content in the product to 1 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out operation for more than 1 hour.(PROC11)		
		Labora	tory activities	Limit the substand Provide a good st less than 3 to 5 ai	andard of general	ventilation (not
		Mixing system	operations (open s)	Limit the substand Provide a good st less than 3 to 5 ai PROC5)	andard of general	ventilation (not
		Spraying		Wear a respirator conforming to EN140 with Type A/P2 filter or better. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection.(PROC11)		
		Surfaces Cleaning		Wear chemically resistant gloves. Wear a respirator conforming to EN140 with Type A/P2 filter or better. Use suitable eye protection.(PROC10)		
Conditions and m to personal protect and health evaluation	ction, hygiene	Rolling, Brushing		Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection. Wear a respirator conforming to EN140 with Type A/P2 filter or better.(PROC10)		
		Spraying		Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Wear a respirator conforming to EN140 with Type A/P2 filter or better. Use suitable eye protection.(PROC11)		
		Mixing operations (open systems) Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use suitable eye protection.(PROC4, PROC5)				e training.
3. Exposure e	estimation and	referer	nce to its source			
Environment						
	0b, ERC11b: EC	ETOC T	RA model v2			
Contributing Scenario	Specific cond	itions	Compartment	Value	Level of Exposure	RCR
ERC8d			Fresh water	exposure estimate	0,000245mg/L	0,0279
ERC8d			Fresh water	exposure	0,0634mg/kg	0,0279
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	sediment	estimate	dry weight (d.w.)	
ERC8d	 Marine water	exposure estimate	0,0000232mg/ L	0,0263
ERC8d	 Marine sediment	exposure estimate	0,00598mg/kg dry weight (d.w.)	0,00264
ERC8d	 Sewage treatment plant (STP)	exposure estimate	0,00157mg/L	0,000238
ERC8d	 Indirect exposure to humans via the environment	exposure estimate		0,000708
ERC8d	 Agricultural soil	exposure estimate	0,00386mg/kg dry weight (d.w.)	0,00373
ERC8d	 Air	exposure estimate	0,0000855	
ERC10b, ERC11b	 Fresh water	exposure estimate	0,000193mg/L	0,0220
ERC10b, ERC11b	 Fresh water sediment	exposure estimate	0,0499mg/kg dry weight (d.w.)	0,020
ERC10b, ERC11b	 Marine water	exposure estimate	0,0000179mg/ L	0,0204
ERC10b, ERC11b	 Marine sediment	exposure estimate	0,000464mg/k g dry weight (d.w.)	0,0204
ERC10b, ERC11b	 Sewage treatment plant (STP)	exposure estimate	0,00105mg/L	0,000159
ERC10b, ERC11b	 Indirect exposure to humans via the environment	exposure estimate		0,000708
ERC10b, ERC11b	 Agricultural soil	exposure estimate	0,00257mg/kg dry weight (d.w.)	0,0249
ERC10b, ERC11b	 Air	exposure estimate	0,0000818	

REACH Tool (ART model) (inhalative exposure)

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
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	 	_	
PROC1	 Worker - inhalative, long- term - systemic		
PROC1	 Worker - dermal, short- term - local	0,00250mg/cm2	0,0133
PROC2	 Worker - inhalative, long- term	0,140ppm	0,133
PROC2	 Worker - dermal, short- term - local	0,00999mg/cm2	0,0532
PROC5	 Worker - inhalative, long- term	0,670ppm	0,112
PROC4	 Worker - inhalative, long- term	1,2ppm	0,201
PROC5, PROC8a	 Worker - dermal, short- term - local	0,0999mg/cm2	0,532
PROC8a, PROC10, PROC11, PROC15	 Worker - inhalative, long- term	0,7ppm	0,663
PROC8b	 Worker - inhalative, long- term	0,350ppm	0,332
PROC8b	 Worker - dermal, short- term - local	0,05mg/cm2	0,266
PROC10	 Worker - dermal, short- term - local	0,04mg/cm2	0,213
PROC11	 Worker - dermal, short- term - local	0,0781mg/cm2	0,832
PROC15	 Worker - dermal, short- term - local	0,00250ppm	0,0133
PROC19	 Worker - inhalative, long- term	2,20ppm	0,368
PROC19	 Worker - dermal, short- term - local	0,103mg/cm2	0,549

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-forindustries-libraries.html). Health

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Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

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1. Short title of Exposure Scenario 24: Use of fragrances					
Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)				
Chemical product category	 PC1: Adhesives, sealants PC3: Air care products PC8: Biocidal products (e.g. Disinfectants, pest control) PC9a: Coatings and paints, thinners, paint removers PC9b: Fillers, putties, plasters, modelling clay PC9c: Finger paints PC13: Fuels PC18: Ink and toners PC28: Perfumes, fragrances PC31: Polishes and wax blends PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids PC35: Washing and cleaning products PC39: Cosmetics, personal care products 				
Article categories	AC0: Other AC31: Scented clothes AC34: Scented Toys AC35: Scented paper articles				
Environmental Release Categories	Release ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC10b: Wide dispersive outdoor use of long-life articles and materials with high or intended release (including abrasive processing) ERC11b: Wide dispersive indoor use of long-life articles and materials with high or intended release (including abrasive processing)				
Activity Activity Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products., This use is exempted from registration accordin to Art.2 (5)(6) of the REACH regulation (EC) No 1907/2006. Therefore the conditions and measures described in this Exposure Scenario are only intended for a technical function of the substance					
2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d, ERC10b, ERC11b					
, COLIPA SpERC 8a.1.b.v1 , COLIPA SpERC 8a.1.c.v1	B, Non-hydrophobic. has been used to evaluate the exposure for the environment. has been used to evaluate the exposure for the environment. has been used to evaluate the exposure for the environment.				

, AISE SPERC 8a.1.a.v1 has been used to evaluate the exposure for the environment.

, AISE spERC 8a.1.b.v1 has been used to evaluate the exposure for the environment.

, AISE SPERC 8a.1.c.v1 has been used to evaluate the exposure for the environment.

, For more information on COLIPA spERC from the cosmetic sector, please visit the website: www.cosmeticseurope.eu.

, For more information on AISE spERC from the Detergents, Cleaning & Maintenance sector, please visit

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the website: www.aise.eu.

	Amounts used in the EU (tonnes/year)	950	
	Fraction of EU tonnage used in region:	0,053 (COLIPA 8a.1.a.v1, COLIPA 8a.1.b.v1, COLIPA 8a.1.c.v1)	
	Fraction of EU tonnage used in region:	0,04 (AISE 8a.1.a.v1, AISE 8a.1.b.v1, AISE 8a.1.c.v1)	
	Fraction of EU tonnage used in region:	0,1 (ERC8d, ERC10b, ERC11b)	
	Regional use tonnage (tons/year):	5,3 (COLIPA 8a.1.a.v1, COLIPA 8a.1.b.v1, COLIPA 8a.1.c.v1)	
	Regional use tonnage (tons/year):	4 (AISE 8a.1.a.v1, AISE 8a.1.b.v1, AISE 8a.1.c.v1	
Amount used	Regional use tonnage (tons/year):10 (ERC8d, ERC10b, ERC11b)		
	Fraction of regional tonnage used locally:	0,00075	
	Maximum daily site tonnage (kg/day):	0,0109 (COLIPA 8a.1.a.v1, COLIPA 8a.1.b.v1 COLIPA 8a.1.c.v1)	
	Maximum daily site tonnage (kg/day):	0,0082 (AISE 8a.1.a.v1, AISE 8a.1.b.v1, AISE 8a.1.c.v1)	
	Maximum daily site tonnage (kg/day):	0,0548 (ERC8d, ERC10b, ERC11b)	
	Annual site tonnage	0,004 (COLIPA 8a.1.a.v1, COLIPA 8a.1.b.v1, COLIPA 8a.1.c.v1)	
	Annual site tonnage	0,003 (AISE 8a.1.a.v1, AISE 8a.1.b.v1, AISE 8a.1.c.v1)	
	Annual site tonnage	0,02 (ERC8d, ERC10b, ERC11b)	
	Flow rate of receiving surface water	18.000 m3/d	
Environment factors not influenced by risk management	Dilution Factor (River)	10	
initialized by tisk management	Dilution Factor (Coastal Areas)	100	
	Wide dispersive use		
	Number of emission days 365 per year		
Other given operational conditions affecting	Emission or Release Factor: Air	1 (AISE 8a.1.c.v1, COLIPA 8a.1.b.v1, ERC8d, ERC10b, ERC11b)	
environmental exposure	initial release prior to RMM, . (AISE 8a.1.c.v1, COLIPA 8a.1.b.v1, ERC8d, ERC10b, ERC11b)		
	Emission or Release Factor: Water	1 (COLIPA 8a.1.a.v1, COLIPA 8a.1.c.v1, AISE 8a.1.a.v1, AISE 8a.1.b.v1, ERC8d, ERC10b,	
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		ERC11b)			
	initial release prior to RMM, . (COLIPA 8a.1.a.v1, COLIPA 8a.1.c.v1, AISE 8a.1.a.v1, AISE 8a.1.b.v1, ERC8d, ERC10b, ERC11b)				
	Emission or Release Factor: Soil	1 (ERC10b)			
	initial release prior to RMM	, . (ERC10b)			
	Emission or Release Factor: Soil 0,2 (ERC8d)				
	initial release prior to RMM, . (ERC8d)				
	Indoor or outdoor use				
Technical conditions and measures at process level to prevent release Technical onsite conditions and	Prevent environmental discharge consistent with regulatory requirements. Common practices vary across sites thus conservative process release estimates used.				
measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site					
	Type of Sewage Treatment Plant	Municipal sewage treatment plant			
Conditions and measures related	Flow rate of sewage treatment plant effluent	2.000 m3/d			
to sewage treatment plant	Degradation efficiency	96,2 %			
	Percentage removed from waste water	96,2 %			
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.			
Conditions and measures related to external recovery of waste	Recovery Methods	External recovery and recycling of waste should comply with applicable local and/or national regulations.			
2.2 Contributing scenario co PC13, PC18, PC28, PC31,		osure for: PC1, PC3, PC8, PC9a, PC9b, PC9c,			
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 20 %.			
Product characteristics	Physical Form (at time of use)	liquid			
	Vapour pressure	519 Pa			
Frequency and duration of use	Frequency of use	365 days/year			
Conditions and measures related to protection of consumer (e.g.					
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behavioural advice, personal protection and hygiene)

3. Exposure estimation and reference to its source

Environment

ERC8d: ECETOC TRA model v2

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8d		Fresh water	exposure estimate	0,000245mg/L	0,0279
ERC8d		Fresh water sediment	exposure estimate	0,0634mg/kg dry weight (d.w.)	0,0279
ERC8d		Marine water	exposure estimate	0,0000232mg/ L	0,0263
ERC8d		Marine sediment	exposure estimate	0,00598mg/kg dry weight (d.w.)	0,0264
ERC8d		Sewage treatment plant (STP)	exposure estimate	0,00157mg/L	0,000238
ERC8d		Indirect exposure to humans via the environment	exposure estimate		0,000708
ERC8d		Agricultural soil	exposure estimate	0,00386mg/kg dry weight (d.w.)	0,0373
ERC8d		Air	exposure estimate	0,0000855	

Consumers

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR	
	worst-case	Consumer combined exposure	0,15mg/kg bw/day		

ECETOC TRA consumer v3.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in

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combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Health

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

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