ABSCHNITT 1. Bezeichnung des Stoffs bzw. des Gemischs und des Unternehmens

1.1. Produktidentifikator

Chemischer Name : Methanol , Methylalkohol , Holzgeist .

Art der Produktes : Reiner Produkt .

Reach Registrierungnummer : 01-2119433307-44

1.2. Relevante identifizierte Verwendungen 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 der 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 I 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, (b) 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) (40. Stoffe, die als entzündbare Gase der Kategorien 1 oder 2, als entzündbare Flüssigkeiten der Kategorien 1, 2 oder 3, als entzündbare Feststoffe der Kategorie 1 oder 2, als Stoffe und Gemische, die in Berührung mit Wasser entzündbare Gase entwickeln, der Kategorien 1, 2 oder 3, als pyrophore Flüssigkeiten der Kategorie 1 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, der das Sicherheitsdatenblatt bereitstellt

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 DORDRECHT
TEL: +31(0)78/65.44.944 - FAX: +31(0)78/65.44.919
E-MAIL: info@brenntag.nl - Website: www.brenntag.nl

1.4. Notrufnummer

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 2 - Gefahr (Flam. Liq. 2; H225)
Akute Toxizität, oral - Kategorie 3 - Gefahr (Acute Tox. 3, oral; H301)
Akute Toxizität, dermal - Kategorie 3 - Gefahr (Acute Tox. 3, dermal; H311)
Akute Toxizität, inhalativ - Kategorie 3 - Gefahr (Acute Tox. 3, inhalation; H331)
Spezifische Zielorgan-Toxizität - Einmalige Exposition - Kategorie 1 - Gefahr (STOT SE 1; H370)

ABSCHNITT 2. Mögliche Gefahren (Fortsetzung)

2.2. Kennzeichnungselemente

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

• Gefährliches Bestandteil(en) : Methanol

• Gefahren Piktogramm(e)

• Signalwort : Gefahr

• Gefahrenhinweise : H225 - Flüssigkeit und Dampf leicht entzündbar. H301 - Giftig bei Verschlucken. H311 - Giftig bei Hautkontakt. H331 - Giftig bei Einatmen. H370 - Schädigt die Organe.

• Sicherheitshinweise

- Prävention : P210 - Von Hitze, heißen Oberflächen, Funken, offenen Flammen sowie anderen Zündquellenarten fernhalten. Nicht rauchen. P260 - Staub/Rauch/Gas/Nebel/ Dampf/Aerosol nicht einatmen. P280 - Schutzhandschuhe/Schutzkleidung/ Augenschutz/Gesichtsschutz tragen.
- Reaktion : P301+P310 - BEI VERSCHLUCKEN: Sofort GIFTINFORMATIONSZENTRUM/Arzt anrufen. P370+P378 - Bei Brand : Löschpulver, Alkoholbeständiges Schaum, Kohlenstoffdioxid oder Wassersprühnebel zum Löschen verwenden.
- Lagerung : P403+P233 - Behälter an einem gut gelüfteten Ort aufbewahren. Behälter dicht verschlossen halten.

2.3. Sonstige Gefahren

Physikalishe/chemische Gefahren : Korrodiert (Erde-)Alkali Metalle und leichte Metalle unter Wasserstoffgasentwicklung.
Brennt mit unsichtbarer Flamme.
Bei unvollständige Verbrennung können giftige Kohlenstoffmonoxide-Dämpfe freikommen.

Gefahren für die Gesundheid : Ein Gesundheits gefährliche Konzentration in der Luft wird beim Verdampfen von diese Substanz bei ca. 20°C nur schnell erreicht; durch Sprühen noch schneller. Kann verminderter Sehfähigkeit zur völliger Blindheit verursachen.

Gefahren für die Umwelt : Keine bedeutende Gefahr. Dieses Produkt ist kein Substance oder enthält keine PBT oder vPvB (gemäß Anhang XIII).

Gefahren für die Sicherheit : Dämpfe bilden mit Luft explosionsfähige Gemische.

ABSCHNITT 3. Zusammensetzung/Angaben zu Bestandteilen

3.1. Stoffe

Name Komponent(en)		Gew. %	CAS nr	EINECS nr	Index nr	Reach nr	EINSTUFUNG
Methanol	:	> 99.85 %	67-56-1	200-659-6	603-001-00-X	01-2119433307-44	Flam. Liq. 2; H225 Acute Tox. 3 (oral); H301 Acute Tox. 3 (skin); H311 Acute Tox. 3 (inhal); H331 STOT SE 1; H370

Der vollständige Text von die (EU)H-Hinweise is im Abschnitt 16.

Hinweis: SCL gilt

ABSCHNITT 4. Erste-Hilfe-Maßnahmen

4.1. Beschreibung der Erste-Hilfe-Maßnahmen

Allgemein : JEDENFALLS 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.
Bei Unwohlsein GIFTINFORMATIONSZENTRUM oder Arzt anrufen.
- Hautkontakt : Verunreinigte Kleidung und Schuhe 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.

Hinweis für den Artz : Spezifisch gegen Methanol-Vergiftung behandeln.
Patient zur Beobachtung aufnehmen, denn die Symptome einer Methanolvergiftung sich nur nach 18-36 U (oder länger) manifestieren.

ABSCHNITT 5. Maßnahmen zur Brandbekämpfung

5.1. Löschmittel

Löschmittel

- Geeignete : Löschpulver , Alkoholbeständiges Schaum , Kohlenstoffdioxid (CO2) , Sprühwasser .
- Nicht geeignete : Festen Wasserstrahl .

5.2. Besondere vom Stoff oder Gemisch ausgehende Gefahren

Spezielle Expositionsgefahren : Beim Feuer können Kohlenstoffoxiden (CO) und Rauch freikommen.
Der Dampf vermischt sich gut mit Luft zu Bildung von explosive Gemische.

5.3. Hinweise für die Brandbekämpfung

Schutzende Ausrüstung : In nächster Nähe des Feuers geschlossenes Atemschutzgerät verwenden und angemessene Schutzkleidung tragen.

Besondere Massnahmen : Zur Kühlung in der Nähe befindlichen Geräts Wassersprühstrahl oder -nebel verwenden. Es ist zu vermeiden, daß zur Brandlöschung verwendetes Wasser in die Umwelt gelangt.

ABSCHNITT 6. Maßnahmen bei unbeabsichtigter Freisetzung

6.1. Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren

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.

ABSCHNITT 6. Maßnahmen bei unbeabsichtigter Freisetzung (Fortsetzung)

Empfohlene Personenschutzausrüstung tragen. (Siehe Abschnitt 8)

6.2. Umweltschutzmaßnahmen

Umweltschutzmaßnahmen : Wenn möglich Undichtheiten beseitigen.
Das gekleckerte Produkt soviel wie möglich mit inertem Material eindeichen.
Eindringen das Produkt in Kanalisation, öffentlichen Gewässer oder dem Boden verhindern.
Falls das Produkt in die Kanalisation oder öffentliche Gewässer gelangt, sind die Behörden zu benachrichtigen.

6.3. Methoden und Material für Rückhaltung nd Reinigung

Reinigungsmethode : Die Leckflüssigkeit auffangen in abgeschlossenen Fässern.
Verschüttetes Produkt so bald wie möglich mit Hilfe von absorbierendem Material aufnehmen.
Rückstände mit vielen Wasser wegspülen.

6.4. Verweis auf andere Abschnitte

Für persönliche Schutzmittel, siehe Abschnitt 8.
Für Behandlung das Abfallprodukt, siehe Abschnitt 13.

ABSCHNITT 7. Handhabung und Lagerung

7.1. Schutzsmaßnahmen zur sicheren Handhabung

Handhabung : Vorsicht : HAUTRESORPTION !
NEBELFORMUNG VERMEIDEN ! STRENGE HYGIENE !
Exposition von (schwangeren) Frauen 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 Lagerung unter Berücksichtigung von Unverträglichkeiten

Lagerung : Nur im gut abgeschlossenen Originalbehälter an einem trockenen, kühlen, dunkelen, gut gelüfteten und feuersicheren Ort aufbewahren.
Alle gefährlichen Produkte müßten auf einen Leckbehälter gesetzt werden oder eingetonnt werden.
Fernhalten von : Oxidationsmittel , Starke Säuren , Leichte Metalle .

* 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.
Explosionssichere Ausrüstung benutzen.
Funke-Arm Gerät gebrauchen.

Geeignetes Verpakkungsmaterial : Galvanisierter Kohlenstoffstahl , Rostfreier Stahl .

Nicht geeignetes Verpakkungsmaterial : Aluminium , Blei (+ Legierungen), Zink , Manche Kunststoffen , Gummi , Überzugmittel .

7.3. Spezifische Endanwendungen

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

ABSCHNITT 8. Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstunge

8.1. Zu überwachende Parameter

Berufsbedingte Expositionsgrenzen : Methanol : Grenzwert (BE) : 200 ppm (266 mg/m³) (2014) (D)
Methanol : Kurze Zeitwert (BE) : 250 ppm (333 mg/m³) (2014) (D)
Methanol : Grenzwert (GGM 8 St) (NL) : 100 ppm (133 mg/m³) (2011) (H)
(D) Die Erwähnung "D" bedeute dass die Aufnahme via die Haut, die Schleimhäute oder die Augen ein bedeutend Teil von des totales Aussetzung bilde. Diese Aufname kann das Gefolge sein von sowohl direkt Kontakt als seine Anwesenheit in die Luft.
(H) Die Zuweisung von ein "H" deute an dass der Stoff relativ einfach durch die Haut werde geabsorbierd.

* Biologischen Grenzwerte : • Methanol : Biologischen Grenzwerte : 30 mg/l (Methanol im Urin) (TRGS)

DNELs :
• Methanol : Arbeiter, akut - lokale Effekte, einatmen : 260 mg/m³
• Methanol : Arbeiter, akut - systemische Effekte, einatmen : 260 mg/m³
• Methanol : Arbeiter, akut - systemische Effekte, dermal : 40 mg/kg Kg/Tag
• Methanol : Arbeiter, langzeit - lokale Effekte, einatmen : 260 mg/m³
• Methanol : Arbeiter, langzeit - systemische Effekte, einatmen : 260 mg/m³
• Methanol : Arbeiter, langzeit - systemische Effekte, dermal : 40 mg/kg Kg/Tag
• Methanol : Verbraucher, akut - lokale Effekte, einatmen : 50 mg/m³
• Methanol : Verbraucher, akut - systemische Effekte, einatmen : 50 mg/m³
• Methanol : Verbraucher, akut - systemische Effekte, dermal : 8 mg/kg Kg/Tag
• Methanol : Verbraucher, langzeit - lokale Effekte, einatmen : 50 mg/m³
• Methanol : Verbraucher, langzeit - systemische Effekte, einatmen : 50 mg/m³
• Methanol : Verbraucher, langzeit - systemische Effekte, dermal : 8 mg/kg Kg/Tag

PNECs :
• Methanol : Süßwasser : 20,8 mg/l
• Methanol : Salzwasser : 2,08 mg/l
• Methanol : Süßwassersediment : 77 mg/kg
• Methanol : Salzwassersediment : 7,7 mg/kg
• Methanol : Boden : 3,18 mg/kg
• Methanol : Intermittierend Freisetzung : 1540 mg/l
• Methanol : Wasserreinigungsinstallation : 100 mg/l

8.2. Begrenzung und Überwachung der Exposition

Technische Massnahmen : Ventilation , Lokale Absaugung .

Persönliche Schutzmittel

- Atemschutz : CE-Geeignetes Atemschutzgerät für organische Dämpfe und Lösungsmitteln (Type AX, braun).
- Hautschutz : Geeignete Schutzkleidung .
- Handschutz : Geeignete Materialien für Schutzhandschuhe (EN 374):
  Die arbeitsplatzspezifische Eignung sollte mit den Schutzhandschuhherstellern abgeklärt werden.
  - Material : Butylgummi
  - Dicke : 0,7 mm
  - Durchbruchszeit : > 480'
- 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 : Beißender Geruch .

ABSCHNITT 9. Physikalische und chemische Eigenschaften (Fortsetzung)

Geruchsschwelle	: 0,75 mg/m³
pH-Wert	: Nicht anwendbar.
Schmelz-/Gefrierpunkt	: -98 °C
Siedepunkt/Siedestrecke (1013 hPa)	: 65 °C
Flammpunkt	: 9,7 °C
Verdampfungsgeschwindigkeit	: 5,3 (Ether = 1) 2,1 (Butylacetat = 1)
Explosionsgrenzen in Luft	: 5,5 - 44 Vol.%
Dampfdruck (20°C)	: 12,9 kPa
Dampfdruck (50°C)	: 55,2 kPa
Relativer Dampfdichte (Luft=1)	: 1,1
Relative Dichte der gesättigten Mischung Dampf/Luft (Luft=1)	: 1,01
Die relative Dichte (Wasser=1)	: 0,79 - 0,80
Dichte (20°C)	: 0,79 - 0,80 kg/l
Löslichkeit in Wasser	: Völlig löslich .
Log P Oktanol/Wasser (20°C)	: -0,7
Zuendtemperatur	: 455 °C
Minimum Entzündungsenergie	: 0,14 mJ
Zersetzungstemperatur	: Nicht festgelegt.
Viskosität (20°C)	: 0,544-0,597 mPa.s (Dynamisch)
Explosive Eigenschaften	: Hochexplosiv in Gegenwart von Metallen und Oxidationsmitteln.
Oxidationseigenschaften	: Keine chemischen Gruppen mit oxidierenden Eigenschaften zugeordnet

9.2. Sonstige Angaben

Oberflächenspannung (20°C)	: 22,61 mN/m
Spezifishe Leitung	: 1,5*10E5 pS/m
% Flüchtige Bestandteile (in Gewicht)	: 100
Kritische Druck	: 7952 kPa
Kritische Temperatur	: 240 °C
Sättigungskonzentration	: 166 g/m³

ABSCHNITT 10. Stabilität und Reaktivität

10.1. Reaktivität

Reaktivität : Reagiert heftig mit Oxidationsmitteln und starken Säuren.

10.2. Chemische Stabilität

Stabilität : Stabil unter normalen Umständen .

10.3. Möglichkeit gefährlicher Reaktionen

Gefährliche Reaktionen : Dämpfe bilden mit Luft explosionsfähige Gemische.
Korrodiert (Erde-)Alkali Metalle und leichte Metalle unter Wasserstoffgasentwicklung.
Bei unvollständige Verbrennung können giftige Kohlenstoffmonoxide-Dämpfe freikommen.

10.4. Zu vermeidenden Bedingungen

Zu vermeidenden Zuständen : Hochtemperatur , Feuchtigkeit , Direktes Sonnenlicht .

10.5. Unverträgliche Materialien

ABSCHNITT 10. Stabilität und Reaktivität (Fortsetzung)

Nicht in Verbindung bringen mit : Oxidationsmittel , Starke Säuren , Leichte Metalle .

10.6. Gefährliche Zersetzungsprodukte

Gefährliche Zersetzungsprodukte : Kohlstoffoxide , Wasserstoff , Formaldehyd .

ABSCHNITT 11. Toxikologische Angaben

11.1. Angaben zu toxikologischen Wirkungen

Akute Toxizität

- Einatmen : Giftig bei Einatmen.
  Höherer Konzentrationen ausgesetzt, kan das Bewusstsein senken, und Störungen der Sehvermögen verursachen.
  In ansehnliche Konzentrationen kann das Produkt zittern machen, Anfälle verursachen, unsw. ...
  Symptome umfassen: Schwindligkeit , Kopfschmerzen , Hust , Erbrechen , Bauchschmerzen , Benommenheit , Übelkeit , Schwindel , Bewustlosigkeit .
  • Methanol : LC50 (Ratte, Inhalation, 4 St) : 128,2 mg/l (Luft)
- Hautkontakt : Giftig bei Hautkontakt.
  Das Produkt wird aufgenommen durch die Haut. Das Produkt entfett die Haut.
  Symptome umfassen: Trockener Haut , Rötung .
  • Methanol : LD50 (Kaninchen, Dermal) : 15800-17100 mg/kg
- Nahrungsaufnahme : Giftig bei Verschlucken.
  Kann auf Sauerstofftoxizität (Azidose) führen.
  Symptome umfassen: Siehe "Einatmung" .
  • Methanol : LD50 (Ratte, Oral) : 1187-2769 mg/kg (15-35% Lösung)

Atz-/Reizwirkung auf die Haut : Hautkontakt kann zu Schäden Ekzem.

Schwere Augenschädigung/-reizung : Keine Effekten bekannt.

Aspirationsgefahr : Das Produkt kann auf zentral Nervensystem einwirken, Funktionsstörungen zurfolge. (Parkinson-ähnliche Symptome)
Der Effekt kann auch verzögert werden.

Sensibilisierung der Atemwege/Haut : Nicht sensibel .

Karzinogenität : Nicht als karcinogen klassifiziert .

Mutagenität : Nicht als mutagen klassifiziert .

Reproduktionstoxizität : Europa : Nicht für Reproduktionstoxizität klassifiziert .

* Spezifische Zielorgan-Toxizität - einmaliger Exposition : Beim Menschen : Schädigt die Organe.
Zielorgan(e) : Sehnerv (Augen (LOAEL = 2000 mg/kg)); Zentral Nervensystem .
(Resultierenden im : Kopfschmerzen , Schwindligkeit , Sehbeschwerden)

Spezifische Zielorgan-Toxizität - wiederholter Exposition : Beim Menschen : Nicht für Organtoxizität klassifiziert .
Bei Tieren : Zielorgan(e) : Herz , Gehirn , Leber (NOAEC = 0,13 mg/l)

ABSCHNITT 12. Umweltbezogene Angaben

12.1. Toxizität

Ekotoxizität : • Methanol : LC50 (Fisch, 96 St) : 15400 mg/l (Lepomis macrochirus) (OECD-Leitsatz 203)
• Methanol : CE50 (Alge, 96 St) : 22000 mg/l (Pseudokirchneriella subcapitata) (OECD-Leitsatz 201)
• Methanol : CE50 (Daphnia magna, 48 St) : >10000 mg/l (OECD-Leitsatz 202)

12.2. Persistenz und Abbaubarkeit

Persistenz und Abbaubarkeit : • Methanol : Persistenz und Abbaubarkeit : Leicht biologisch abbaubar .

ABSCHNITT 12. Umweltbezogene Angaben (Fortsetzung)

12.3. Bioakkumulationspotenzial

Bioakkumulation : • Methanol : Bioakkumulation : Keine Bio-Akkumulation erwartet .

12.4. Mobilität im Boden

Mobilität : • Methanol : Mobilität : Das Produkt wird fast nicht im Boden oder Sedimenten absorbiert.

12.5. Ergebnisse der PBT- und vPvB-Beurteilung

Ergebnisse : • Methanol : PBT/vPvB : Nein

12.6. Andere schädliche Wirkungen

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.

ABSCHNITT 13. Hinweise zur Entsorgung

13.1. Verfahren der Abfallbehandlung

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 für die Verpakkung dieses Produktes zu benutzen.
Nach Gebrauch die Verpackung sorgfältig ausleeren und abschliessen.
Wenn es sich um Retourverpakkung händelt, kann die leere Verpakkung wieder am Lieferant angeboten werden.

ABSCHNITT 14. Angaben zum Transport

14.1. UN-Nummer

UN Nr : 1230

14.2. Ordnungsgemäße UN-Versandbezeichnung

ADR/RID-Name : UN 1230 Methanol, 3 (6.1), II, (D/E)

ADN-Name : UN 1230 Methanol , 3 (6.1), II

IMDG-Name : UN 1230 Methanol , 3, (6.1), II, (9,7°C)

IATA-Name : UN 1230 Methanol , 3, (6.1), II

14.3. Transportgefahrenklassen

Klasse : 3 + 6.1

14.4. Verpackungsgruppe

Verpackungstyp : II

ABSCHNITT 14. Angaben zum Transport (Fortsetzung)

14.5. Umweltgefahren

Umweltgefährlich	: Nein
Meeresschadstoff	: Nein

14.6. Besondere Vorsichtsmaßnahmen für den Verwender

Gefahrandeutung	: 336
Gefahrsymbol(e)	: 3 + 6.1
EmS-N°	: F-E , S-D

14.7. Massengutbeforderung gemäß Anhang II des MARPOL-Übereinkommens und gemäß IBC-Code

Schiffstyp	: 3
Verschmutzungskategorie	: Y

ABSCHNITT 15. Rechtsvorschriften

15.1. Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Stoff oder das Gemisch

Inventarisierungen : Australische Inventarisation (AICS): Aufgenommen im Inventarisation.
Kanadische Inventarisation (DSL): Aufgenommen im Inventarisation.
Chinesisches Inventarisation (IECS): Aufgenommen im Inventarisation.
Europäische Inventarisation (EINECS): Aufgenommen im Inventarisation.
Japanische Inventarisation (ENCS): Aufgenommen im Inventarisation.
Koreanische Inventarisation (KECI): Aufgenommen im Inventarisation.
Philippinische Inventarisation (PICCS): Aufgenommen im Inventarisation.
USA-Inventarisation (TSCA): Aufgenommen im Inventarisation.

NFPA-N° : 1-3-0

Einschlägigen EU Vorschrift(en) : Richtlinie 92/85/EWG des Rates vom 19. Oktober 1992 über die Durchführung von Maßnahmen zur Verbesserung der Sicherheit und des Gesundheitsschutzes von schwangeren Arbeitnehmerinnen, Wöchnerinnen und stillenden Arbeitnehmerinnen am Arbeitsplatz
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 und Sicherheit der Arbeitnehmer vor der Gefährdung durch chemische Arbeitsstoffe bei der Arbeit
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)

ABSCHNITT 15. Rechtsvorschriften (Fortsetzung)

Nationalen Vorschriften

- Deutschland : WGK : 1
- Niederlande : Wasserbeschwerlichkeit : 11
  Sanierungsanspannung : B
  SZW-Liste von gifter Reproduktionssubstanzen : Methanol

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)) Sehe auch auf der Adresse: http://apps.echa.europa.eu/registered/registered-sub.aspx#search
	(EU)H-Hinweis(e)	: H225 - Flüssigkeit und Dampf leicht entzündbar. H301 - Giftig bei Verschlucken. H311 - Giftig bei Hautkontakt. H331 - Giftig bei Einatmen. H370 - Schädigt die Organe.
*	Klassifizierungsverfahren	: Flam. Liq. 2; H225 - Basierend auf Versuchsdaten Acute Tox. 3, oral; H301 - Berechnungsmethode Acute Tox. 3, dermal; H311 - Berechnungsmethode Acute Tox. 3, inhalation; H331 - Berechnungsmethode STOT SE 1 ; H370 - Berechnungsmethode
*	Liste der Abkürzungen und Akronyme	: Acute Tox. 3, dermal : Akute Toxizität, dermal - Kategorie 3 Acute Tox. 3, inhalation : Akute Toxizität, inhalativ - Kategorie 3 Acute Tox. 3, oral : Akute Toxizität, oral - Kategorie 3 ADN (Accord européen relatif au transport international des marchandises Dangereuses par voie de Navigation intérieur) : Europäisches Übereinkommen über die internationale Beförderung gefährlicher Güter in der Binnenschifffahrt ADR (Accord européen relatif au transport international des marchandises Dangereuses par Route) : Europäisches Übereinkommen über die internationale Beförderung gefährlicher Güter auf der Straße CO : Kohlenstoffmonoxid DNEL (Derived No Effect Level) : Grenzwert, unterhalb dessen der Stoff keine Wirkung ausübt EC50 : mittlere Effektive Konzentration EmS (Emergency Schedule) : den ersten Code verweist auf die einschlägigen Brandklasse und den zweite code verweist auf die einschlägingen Verschütten Zeitplan Flam. Liq. 2 : Entzündbare Flüssigkeiten - Kategorie 2 IATA (International Air Transport Association) :Übereinkommen über die internationale Beförderung gefährlicher Güter im Luftverkehr IMDG (International Maritime Dangerous Goods code) : Internationalen Übereinkommens für Gefahrgutkennzeichnung für gefährliche Güter im Seeschiffsverkehr LC50 : mittlere Letale Konzentration LD50 : mittlere Letale Dosis

ABSCHNITT 16. Sonstige Angaben (Fortsetzung)

NFPA (National Fire Protection Association) oder Gefahrendiamant
NVIC : National Vergiftungen Information Zentrum
OECD (Organisation for Economic Cooperation and Development) : Organisation für wirtschaftliche Zusammenarbeit und Entwicklung
PBT : persistente, bioakkumulierbar und toxisch
PNEC (Predicted No Effect Concentration) : Konzentration unter die Exposition gegenüber
einem Stoff ohne Wirkung
RCP (Reciproke Calculation Procedure)
REACH : Registrierung, Bewertung, Zulassung und Beschränkung von Chemikalien
RID (Règlement concernant le transport International ferroviaire des marchandises Dangereuses) : internationalen Beförderung gefährlicher Güter im Schienenverkehr
SCL (Specific Concentration Limits) : spezifische Konzentrationsgrenzwerte
STOT SE 1 : Spezifische Zielorgan-Toxizität - Einmalige Exposition - Kategorie 1
SZW-Liste : Liste krebserzeugender Substanzen und Vorgänge als Zielen in Artikel 4.11 des Erlass über Arbeitsbedingungen
SZW-Liste : Nicht-einschräkende Liste gifter Reproduktionssubstanzen auf die Aufzeichnungspflicht zusätzlich als auf Artikel 4.2a abgezielt Anwendung findet, zweter Absatz des Erlass über Arbeitsbedingungen
GGM (Gewichteter Gleitender Mittelwert) : die durchschnittliche Exposition über einen bestimmten Zeitraum
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

No.	Short title	Main User Group (SU)	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Environmental Release Category (ERC)	Article Category (AC)	Specified
1	Manufacture of substance	3	8, 9	NA	1, 2, 3, 4, 8a, 8b, 15	1, 4	NA	ES1740
2	Use as an intermediate	3	8, 9	NA	1, 2, 3, 4, 8a, 8b, 15	6a, 6b	NA	ES1746
3	Distribution of substance	3	8, 9	NA	1, 2, 3, 4, 8a, 8b, 9	1, 2	NA	ES1749
4	Formulation & (re)packing of substances and mixtures	3	10	NA	1, 2, 3, 4, 5, 8a, 8b, 9, 14, 15	2	NA	ES20237
5	Use in cleaning agents	3	NA	NA	1, 2, 3, 4, 7, 8a, 8b, 10, 13	4	NA	ES1798
6	Use in cleaning agents	22	NA	NA	1, 2, 3, 4, 8a, 8b, 10, 11, 13	8a, 8d	NA	ES1801
7	Use in cleaning agents	21	NA	35	NA	8a, 8d	NA	ES1831
8	Use in fuel	3	10	NA	1, 2, 3, 8a, 8b, 16	7	NA	ES1803
9	Use in fuel	22	NA	NA	1, 2, 3, 8a, 8b, 16	8b, 8e, 9a, 9b	NA	ES1806
10	Use in fuel	21	NA	13	NA	8b, 8e, 9a, 9b	NA	ES1834
11	Use in laboratories	3	NA	NA	10, 15	4	NA	ES1813
12	Use in laboratories	22	NA	NA	10, 15	8a	NA	ES1827
13	Use in de-icing and anti-icing applications	21	NA	4	NA	8a, 8d	NA	ES1837
14	Use as water treatment chemicals	3	NA	NA	2	4, 6b	NA	ES2315
15	Use in oil and gas field drilling and production operations	22	NA	NA	4, 5, 8a, 8b	9b	NA	ES1840
16	Use in oil and gas field drilling and production operations	3	NA	NA	1, 2, 3, 4, 5, 8a, 8b	4	NA	ES1842

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 industrial sites	
Sectors of end-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 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 PROC15: Use as laboratory reagent	
Environmental Release Categories	ERC1: Manufacture of substances 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.	
2.1 Contributing scenario controlling environmental exposure for: ERC1, ERC4		
No exposure assessment presented for the environment		
2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours	
Human factors not influenced by risk management	Exposed skin area	One hand, face side only. 240 cm² (PROC1, PROC3, PROC15)
	Exposed skin area	Two hands face side only. 480 cm² (PROC2, PROC4, PROC8b)
	Exposed skin area	Two hands 960 cm² (PROC8a)
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature.	

Technical conditions and measures to control dispersion from source towards the worker	General exposures Closed systems With sample collection with occasional controlled exposure	Provide extraction ventilation at points where emissions occur. (Efficiency: 90 %)(PROC2)
	General exposures Closed systems Use in contained batch processes	Provide extraction ventilation at points where emissions occur. (Efficiency: 90 %)(PROC3)
	General exposures Open systems Batch process With sample collection	Provide extraction ventilation at points where emissions occur. (Efficiency: 90 %)(PROC4)
	Process sampling	Provide extraction ventilation at points where emissions occur. Use a sampling system designed to control exposure.(PROC2, PROC3, PROC4, PROC8a, PROC8b)
	Laboratory activities	Handle in a fume cupboard or under extract ventilation. (Efficiency: 90 %)(PROC15)
	Bulk transfers	Ensure material transfers are under containment or extract ventilation. (Efficiency: 90 %)(PROC8a)
	Bulk transfers	Clear transfer lines prior to de-coupling. Ensure material transfers are under containment or extract ventilation. (Efficiency: 97 %)(PROC8b)
	Storage with occasional controlled exposure	Avoid dip sampling. Clear transfer lines prior to de-coupling. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Provide extraction ventilation at points where emissions occur. (Efficiency: 90 %)(PROC2)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN374.	

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

Workers

PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15: Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR

PROC1, PROC3, PROC15	---	worker dermal, short and long term - systemic	0,34mg/kg bw/day	0,008
PROC1	---	Worker - inhalative, long-term - systemic	0,01mg/m3	0,00004
PROC1	---	Worker - inhalative, short-term - systemic	0,05mg/m3	0,0002
PROC2	---	worker dermal, short and long term - systemic	1,37mg/kg bw/day	0,034
PROC2, PROC15	---	Worker - inhalative, long-term - systemic	6,67mg/m3	0,026
PROC2	---	Worker - inhalative, short-term - systemic	26,67mg/m3	0,103
PROC3, PROC4, PROC15	---	Worker - inhalative, long-term - systemic	13,33mg/m3	0,051
PROC3, PROC4	---	Worker - inhalative, short-term - systemic	53,33mg/m3	0,205
PROC4, PROC8b	---	worker dermal, short and long term - systemic	6,86mg/kg bw/day	0,171
PROC8a	---	worker dermal, short and long term - systemic	13,71mg/kg bw/day	0,343
PROC8a	---	Worker - inhalative, long-term - systemic	33,33mg/m3	0,128
PROC8a	---	Worker - inhalative, short-term - systemic	66,67mg/m3	0,256
PROC8b	---	Worker - inhalative, long-term - systemic	6,00mg/m3	0,023
PROC8b	---	Worker - inhalative, short-term - systemic	12,00mg/m3	0,046

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.
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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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 industrial sites	
Sectors of end-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 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 PROC15: Use as laboratory reagent	
Environmental Release Categories	ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates) ERC6b: Industrial use of reactive processing aids	
Activity	Use of substance as an intermediate (not related to Strictly Controlled Conditions). 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: ERC6a, ERC6b		
No exposure assessment presented for the environment		
2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours	
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature.	
Technical conditions and measures to control dispersion from source towards the worker	General exposures Closed systems With sample collection with occasional controlled exposure	Provide extraction ventilation at points where emissions occur. (Efficiency: 90 %)(PROC2)

General exposures Closed systems Use in contained batch processes	Provide extraction ventilation at points where emissions occur. (Efficiency: 90 %)(PROC3)
General exposures Open systems Batch process With sample collection	Provide extraction ventilation at points where emissions occur. (Efficiency: 90 %)(PROC4)
Process sampling	Provide extraction ventilation at points where emissions occur.(PROC2, PROC3, PROC4, PROC8a, PROC8b)
Laboratory activities	Handle in a fume cupboard or under extract ventilation. (Efficiency: 90 %)(PROC15)
Bulk transfers	Ensure material transfers are under containment or extract ventilation. (Efficiency: 90 %)(PROC8a)
Bulk transfers	Ensure material transfers are under containment or extract ventilation. (Efficiency: 97 %)(PROC8b)
Storage with occasional controlled exposure	Provide extraction ventilation at points where emissions occur.(PROC2)

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

Workers

PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15: Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1, PROC3, PROC15	---	worker dermal, short and long term - systemic	0,34mg/kg bw/day	0,008
PROC1	---	Worker - inhalative, long-term - systemic	0,01mg/m3	0,00004
PROC1	---	Worker - inhalative, short-term - systemic	0,05mg/m3	0,0002
PROC2	---	worker dermal, short and long term - systemic	1,37mg/kg bw/day	0,034
PROC2, PROC15	---	Worker - inhalative, long-term - systemic	6,67mg/m3	0,026
PROC2, PROC15	---	Worker - inhalative, short-term - systemic	26,67mg/m3	0,103

PROC3, PROC4	---	Worker - inhalative, long-term - systemic	13,33mg/m3	0,051
PROC3, PROC4	---	Worker - inhalative, short-term - systemic	53,33mg/m3	0,205
PROC4, PROC8b	---	worker dermal, short and long term - systemic	6,86mg/kg bw/day	0,171
PROC8a	---	worker dermal, short and long term - systemic	13,71mg/kg bw/day	0,343
PROC8a	---	Worker - inhalative, long-term - systemic	33,33mg/m3	0,128
PROC8a	---	Worker - inhalative, short-term - systemic	66,67mg/m3	0,256
PROC8b	---	Worker - inhalative, long-term - systemic	6,00mg/m3	0,023
PROC8b	---	Worker - inhalative, short-term - systemic	12,00mg/m3	0,046

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.
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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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	
Sectors of end-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 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)	
Environmental Release Categories	ERC1: Manufacture of substances ERC2: Formulation of preparations	
Activity	Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading distribution and associated laboratory activities.	
2.1 Contributing scenario controlling environmental exposure for: ERC1, ERC2		
No exposure assessment presented for the environment		
2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours	
Human factors not influenced by risk management	Exposed skin area	One hand, face side only. 240 cm² (PROC1, PROC3)
	Exposed skin area	Two hands 960 cm² (PROC8a)
	Exposed skin area	Two hands face side only. 480 cm² (PROC2, PROC4, PROC8b, PROC9)
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature.	
Technical conditions and	General exposures	Provide extract ventilation to points where

measures to control dispersion from source towards the worker	Closed systems With sample collection with occasional controlled exposure	emissions occur. (Efficiency: 90 %)(PROC2)
	General exposures Closed systems Use in contained batch processes	Provide extract ventilation to points where emissions occur. (Efficiency: 90 %)(PROC3)
	General exposures Open systems Batch process With sample collection	Provide extract ventilation to points where emissions occur. (Efficiency: 90 %)(PROC4)
	Bulk transfers Open systems	Clear transfer lines prior to de-coupling. Ensure material transfers are under containment or extract ventilation. (Efficiency: 97 %)(PROC8b)
	Bulk transfers	Clear transfer lines prior to de-coupling. Ensure material transfers are under containment or extract ventilation. (Efficiency: 90 %)(PROC8a)
	Drum and small package filling	Put lids on containers immediately after use. Clear spills immediately. Provide extract ventilation to points where emissions occur. (Efficiency: 90 %)(PROC9)
	Storage with occasional controlled exposure	Provide extract ventilation to points where emissions occur. (Efficiency: 90 %)(PROC2)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN374.	

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

Workers

PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9: Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1, PROC3	---	worker dermal, short and long term - systemic	0,34mg/kg bw/day	0,008
PROC1	---	Worker - inhalative, long-term - systemic	0,01mg/m3	0,00004
PROC1	---	Worker - inhalative, short-term - systemic	0,05mg/m3	0,0002

PROC2	---	worker dermal, short and long term - systemic	1,37mg/kg bw/day	0,034
PROC2	---	Worker - inhalative, long-term - systemic	6,67mg/m3	0,026
PROC2	---	Worker - inhalative, short-term - systemic	26,67mg/m3	0,103
PROC3, PROC4	---	Worker - inhalative, long-term - systemic	13,33mg/m3	0,051
PROC3, PROC4	---	Worker - inhalative, short-term - systemic	53,33mg/m3	0,205
PROC4, PROC8b, PROC9	---	worker dermal, short and long term - systemic	6,86mg/kg bw/day	0,171
PROC8a	---	worker dermal, short and long term - systemic	13,71mg/kg bw/day	0,343
PROC8a	---	Worker - inhalative, long-term - systemic	33,33mg/m3	0,128
PROC8a	---	Worker - inhalative, short-term - systemic	66,67mg/m3	0,256
PROC8b	---	Worker - inhalative, long-term - systemic	6,00mg/m3	0,023
PROC8b	---	Worker - inhalative, short-term - systemic	12,00mg/m3	0,046
PROC9	---	Worker - inhalative, long-term - systemic	26,67mg/m3	0,103
PROC9	---	Worker - inhalative, short-term - systemic	53,34mg/m3	0,205

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.
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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

1. Short title of Exposure Scenario 4: Formulation & (re)packing of substances and mixtures	
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 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 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
No exposure assessment presented for the environment

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours	
Human factors not influenced by risk management	Exposed skin area	One hand, face side only. 240 cm² (PROC1, PROC3, PROC15)

	Exposed skin area	Two hands face side only. 480 cm² (PROC2, PROC4, PROC8b, PROC9)
	Exposed skin area	Two hands 960 cm² (PROC8a)
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature.	
Technical conditions and measures to control dispersion from source towards the worker	General exposures Closed systems With sample collection with occasional controlled exposure	Provide extract ventilation to points where emissions occur. (Efficiency: 90 %)(PROC2)
	General exposures Closed systems Use in contained batch processes	Provide extract ventilation to points where emissions occur. (Efficiency: 90 %)(PROC3)
	General exposures Open systems Batch process With sample collection with potential for aerosol generation	Provide extract ventilation to points where emissions occur. (Efficiency: 90 %)(PROC4)
	Process sampling	Avoid dip sampling. Provide extract ventilation to points where emissions occur.(PROC2, PROC3, PROC4, PROC8a, PROC8b)
	Laboratory activities	Handle in a fume cupboard or under extract ventilation. (Efficiency: 90 %)(PROC15)
	Bulk transfers	Clear transfer lines prior to de-coupling. Provide extract ventilation to points where emissions occur. (Efficiency: 90 %)(PROC8a)
	Bulk transfers	Clear lines prior to de-coupling. Provide extract ventilation to points where emissions occur. (Efficiency: 97 %)(PROC8b)
	Drum and small package filling	Put lids on containers immediately after use. Ensure material transfers are under containment or extract ventilation. (Efficiency: 90 %)(PROC9)
	Storage with occasional controlled exposure	Avoid dip sampling. Provide extract ventilation to points where emissions occur. (Efficiency: 90 %)(PROC2)
	Mixing operations (open systems) with potential for aerosol generation	Provide extraction ventilation at points where emissions occur.(PROC5)
	Production or preparation or articles by tabletting, compression, extrusion or pelletisation	Provide extraction ventilation at points where emissions occur.(PROC14)

Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN374.

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

Workers

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
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When existing controls and recommended RMMs are applied, safe use can be concluded.

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.
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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

1. Short title of Exposure Scenario 5: Use in cleaning agents		
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 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	
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles	
Activity	Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping automated and by hand).	
2.1 Contributing scenario controlling environmental exposure for: ERC4		
No exposure assessment presented for the environment		
2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC13		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours	
Human factors not influenced by risk management	Exposed skin area	One hand, face side only. 240 cm² (PROC1, PROC3)
	Exposed skin area	Two hands face side only. 480 cm² (PROC2, PROC4, PROC8b, PROC13)
	Exposed skin area	Two hands 960 cm² (PROC8a)
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature.	
	Room size	1000 m3(PROC7)

Technical conditions and measures to control dispersion from source towards the worker	Automated process with (semi) closed systems Use in contained systems	Ensure material transfers are under containment or extract ventilation. (Efficiency: 90 %)(PROC2)
	Use in contained batch processes	Provide the operation with a properly sited receiving hood. (Efficiency: 90 %)(PROC3, PROC4)
	Bulk transfers	Ensure material transfers are under containment or extract ventilation. (Efficiency: 90 %)(PROC8a)
	Filling/ preparation of equipment from drums or containers. Dedicated facility	Ensure material transfers are under containment or extract ventilation. (Efficiency: 97 %)(PROC8b)
	Cleaning with high pressure washers	Carry out in a vented booth or extracted enclosure.(PROC7)
	Degreasing small objects in cleaning station	Provide the operation with a properly sited receiving hood. (Efficiency: 90 %)(PROC13)
Organisational measures to prevent /limit releases, dispersion and exposure	Cleaning with high pressure washers	Clean equipment and the work area every day. Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m). Ensure control measures are regularly inspected and maintained.(PROC7)

2.3 Contributing scenario controlling worker exposure for: PROC10

Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 80%
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours	
Human factors not influenced by risk management	Exposed skin area	Two hands 960 cm² (PROC10)
Technical conditions and measures to control dispersion from source towards the worker	Cleaning with low-pressure washers	Provide the operation with a properly sited receiving hood. (Efficiency: 90 %)(PROC10)

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

Workers

PROC7: StoffenManager (inhalation exposure)

PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC13: Use of ECETOC TRA Version 2 with

modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1, PROC3	---	worker dermal, short and long term - systemic	0,34mg/kg bw/day	0,008
PROC1	---	Worker - inhalative, long-term - systemic	0,01mg/m3	0,00004
PROC1	---	Worker - inhalative, short-term - systemic	0,05mg/m3	0,0002
PROC2	---	worker dermal, short and long term - systemic	1,37mg/kg bw/day	0,034
PROC2	---	Worker - inhalative, long-term - systemic	6,67mg/m3	0,026
PROC2	---	Worker - inhalative, short-term - systemic	26,67mg/m3	0,103
PROC3, PROC4	---	Worker - inhalative, long-term - systemic	13,33mg/m3	0,051
PROC3, PROC4	---	Worker - inhalative, short-term - systemic	53,33mg/m3	0,205
PROC4, PROC8b	---	worker dermal, short and long term - systemic	6,86mg/kg bw/day	0,171
PROC7	---	worker inhalation, acute and long term - systemic	141,1mg/m3	0,542
PROC8a, PROC13	---	worker dermal, short and long term - systemic	13,71mg/kg bw/day	0,343
PROC8a, PROC13	---	Worker - inhalative, long-term - systemic	33,33mg/m3	0,128
PROC8a, PROC13	---	Worker - inhalative, short-term - systemic	66,67mg/m3	0,256
PROC8b	---	Worker - inhalative, long-term - systemic	6,00mg/m3	0,023
PROC8b	---	Worker - inhalative, short-term - systemic	12,00mg/m3	0,046
PROC10	---	Worker - inhalative, short-term - systemic	53,33mg/m3	0,205
PROC10	---	worker dermal, short and long term - systemic	21,94mg/kg bw/day	0,549
PROC10	---	Worker - inhalative, long-term - systemic	26,67mg/m3	0,103

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.
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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

Assumes a good basic standard of occupational hygiene is implemented.

1. Short title of Exposure Scenario 6: Use in cleaning agents		
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 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 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	
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	
Activity	Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping automated and by hand).	
2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d		
No exposure assessment presented for the environment		
2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Amount used		5 L/min (PROC11)
Frequency and duration of use	Covers daily exposures up to 8 hours	
	Avoid carrying out operation for more than 4 hours.(PROC4)	
Human factors not influenced by risk management	Exposed skin area	One hand, face side only. 240 cm² (PROC1, PROC3)
	Exposed skin area	Two hands face side only. 480 cm² (PROC2, PROC4, PROC8b, PROC13)
	Exposed skin area	Two hands 960 cm² (PROC8a, PROC10, PROC11)

Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature.	
	Avoid carrying out operation for more than 4 hours.(PROC4)	
	Room size	1000 m3(PROC11)
Technical conditions and measures to control dispersion from source towards the worker	Automated process with (semi) closed systems Use in contained systems	Provide the operation with a properly sited receiving hood. (Efficiency: 80 %)(PROC2)
	Automated process with (semi) closed systems Use in contained systems Drum/batch transfers	Provide the operation with a properly sited receiving hood. (Efficiency: 80 %)(PROC3)
	Semi-automated process (e.g.: Semi-automatic application of floor care and maintenance products)	Provide the operation with a properly sited receiving hood. (Efficiency: 80 %)(PROC4)
	Filling/ preparation of equipment from drums or containers. Non-dedicated facility	Limit the substance content in the product to 5 %. or Ensure material transfers are under containment or extract ventilation.(PROC8a)
	Filling/ preparation of equipment from drums or containers. Dedicated facility	Limit the substance content in the product to 5 %. or Ensure material transfers are under containment or extract ventilation.(PROC8b)
	Cleaning with low-pressure washers Rolling, Brushing no spraying	Limit the substance content in the product to 5 %.(PROC10)
	Cleaning with high pressure washers Spraying	Use long handled tools where possible. Limit the substance content in the product to 3% Avoid carrying out operations for more than 200 min(PROC11)
	Dipping, immersion and pouring	Provide the operation with a properly sited receiving hood. (Efficiency: 80 %)(PROC13)
	Storage with occasional controlled exposure	Ensure material transfers are under containment or extract ventilation. (Efficiency: 80 %)(PROC2)
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure that the direction of airflow is clearly away from the worker. Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m).(PROC11)	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. (Efficiency: 90 %)(PROC11)	

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

Workers

PROC11: RISKOFDERM V2.1

PROC11: StoffenManager (inhalation exposure)

PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC13: Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1, PROC3, PROC8b	---	worker dermal, short and long term - systemic	0,34mg/kg bw/day	0,008
PROC1	---	Worker - inhalative, long-term - systemic	0,13mg/m3	0,0005
PROC1	---	Worker - inhalative, short-term - systemic	0,53mg/m3	0,002
PROC2	---	worker dermal, short and long term - systemic	1,37mg/kg bw/day	0,034
PROC2	---	Worker - inhalative, long-term - systemic	13,33mg/m3	0,051
PROC2	---	Worker - inhalative, short-term - systemic	53,33mg/m3	0,205
PROC3	---	Worker - inhalative, long-term - systemic	26,67mg/m3	0,103
PROC3	---	Worker - inhalative, short-term - systemic	106,67mg/m3	0,440
PROC4	---	worker dermal, short and long term - systemic	6,86mg/kg bw/day	0,171
PROC4	---	Worker - inhalative, long-term - systemic	40,00mg/m3	0,154
PROC4	---	Worker - inhalative, short-term - systemic	160,00mg/m3	0,615
PROC8a	---	worker dermal, short and long term - systemic	0,68mg/kg bw/day	0,017
PROC8a, PROC10	---	Worker - inhalative, long-term - systemic	33,33mg/m3	0,128
PROC8a, PROC10	---	Worker - inhalative, short-term - systemic	66,67mg/m3	0,256
PROC8b	---	Worker - inhalative, long-term - systemic	16,67mg/m3	0,064
PROC8b	---	Worker - inhalative,	33,34mg/m3	0,128

		short-term - systemic		
PROC10	---	worker dermal, short and long term - systemic	1,37mg/kg bw/day	0,034
PROC11	---	worker inhalation, acute and long term - systemic	134,1mg/m3	0,516
PROC11	---	worker dermal, short and long term - systemic	7,24mg/kg bw/day	0,181
PROC13	---	worker dermal, short and long term - systemic	13,71mg/kg bw/day	0,343
PROC13	---	Worker - inhalative, long-term - systemic	66,67mg/m3	0,256
PROC13	---	Worker - inhalative, long-term - systemic	133,33mg/m3	0,513

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.
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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

1. Short title of Exposure Scenario 7: Use in cleaning agents		
Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)	
Chemical product category	PC35: Washing and cleaning 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	
2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d		
No exposure assessment presented for the environment		
2.2 Contributing scenario controlling consumer exposure for: PC35: Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 2,5%
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Amount used	Amount used per event	1 kg
	Relevant for inhalative exposure estimates.	
	Amount used per event	0,16 g
	Relevant for dermal exposure estimates.	
Frequency and duration of use	Exposure duration per event	2 h
	Frequency of use	102 days/year
Human factors not influenced by risk management	For each use event, assumes swallowed amount of	0,4 g (gram)(PC35)
Other given operational conditions affecting consumers exposure	Ventilation rate per hour	0,5
	Covers use in a one car garage (34 m3) under typical ventilation.	
2.3 Contributing scenario controlling consumer exposure for: PC35: Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 5%
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Amount used	Amount used per event	16,2 g
Frequency and duration of use	Exposure duration per event	1 h

	Frequency of use	365 days/year
Human factors not influenced by risk management	Exposed skin area	Two hands 960 cm²
Other given operational conditions affecting consumers exposure	Room size	15 m3
	Ventilation rate per hour	2,5
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	Ensure spraying away from persons.

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

Consumers

ECETOC TRA consumer v3. The ConsExpo model has been used to estimate consumer exposures unless otherwise indicated.

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.
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
For further information on the assessment method, see:
http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp
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

1. Short title of Exposure Scenario 8: Use in fuel		
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 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 PROC16: Using material as fuel sources, limited exposure to unburned product to be expected	
Environmental Release Categories	ERC7: Industrial use of substances in closed systems	
Activity	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.	
2.1 Contributing scenario controlling environmental exposure for: ERC7		
No exposure assessment presented for the environment		
2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours	
Human factors not influenced by risk management	Exposed skin area	One hand, face side only. 240 cm² (PROC1, PROC3, PROC16)
	Exposed skin area	Two hands face side only. 480 cm² (PROC2, PROC8b)
	Exposed skin area	Two hands 960 cm² (PROC8a)
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature.	
Technical conditions and measures to control dispersion from source towards the worker	General exposures Closed systems with occasional controlled exposure	Provide extract ventilation to points where emissions occur. (Efficiency: 90 %)(PROC2)

	General exposures Closed systems Batch process	Provide extract ventilation to points where emissions occur. (Efficiency: 90 %)(PROC3)
	Vessel and container cleaning	Provide extract ventilation to points where emissions occur. (Efficiency: 90 %)(PROC8a)
	Drum/batch transfers	Provide extract ventilation to points where emissions occur. (Efficiency: 97 %)(PROC8b)
	Storage with occasional controlled exposure	Provide extract ventilation to points where emissions occur. (Efficiency: 90 %)(PROC2)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN374.	

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

Workers

PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16: Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1, PROC3, PROC16	---	worker dermal, short and long term - systemic	0,34mg/kg bw/day	0,008
PROC1	---	Worker - inhalative, long-term - systemic	0,01mg/m3	0,00004
PROC1	---	Worker - inhalative, short-term - systemic	0,05mg/m3	0,0002
PROC2	---	worker dermal, short and long term - systemic	1,37mg/kg bw/day	0,034
PROC2	---	Worker - inhalative, long-term - systemic	6,67mg/m3	0,026
PROC2	---	Worker - inhalative, short-term - systemic	26,67mg/m3	0,103
PROC3	---	Worker - inhalative, long-term - systemic	13,33mg/m3	0,051
PROC3	---	Worker - inhalative, short-term - systemic	53,33mg/m3	0,205
PROC8a	---	worker dermal, short and long term - systemic	13,71mg/kg bw/day	0,343
PROC8a, PROC16	---	Worker - inhalative, long-term - systemic	33,33mg/m3	0,128

PROC8a, PROC16	---	Worker - inhalative, short-term - systemic	66,67mg/m3	0,256
PROC8b	---	worker dermal, short and long term - systemic	6,86mg/kg bw/day	0,171
PROC8b	---	Worker - inhalative, long-term - systemic	6,00mg/m3	0,023
PROC8b	---	Worker - inhalative, short-term - systemic	12,00mg/m3	0,046

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.
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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

1. Short title of Exposure Scenario 9: Use in fuel		
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 PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition 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 PROC16: Using material as fuel sources, limited exposure to unburned product to be expected	
Environmental Release Categories	ERC8b: Wide dispersive indoor use of reactive substances in open systems ERC8e: Wide dispersive outdoor use of reactive substances in open systems ERC9a: Wide dispersive indoor use of substances in closed systems ERC9b: Wide dispersive outdoor use of substances in closed systems	
Activity	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.	
2.1 Contributing scenario controlling environmental exposure for: ERC8b, ERC8e, ERC9a, ERC9b		
No exposure assessment presented for the environment		
2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours	
Human factors not influenced by risk management	Exposed skin area	One hand, face side only. 240 cm² (PROC1, PROC3, PROC16)
	Exposed skin area	Two hands face side only. 480 cm² (PROC2, PROC8b)
	Exposed skin area	Two hands 960 cm² (PROC8a)
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature.	
Technical conditions and measures to control dispersion from source towards the worker	General exposures Closed systems with occasional controlled exposure	Provide extract ventilation to points where emissions occur. (Efficiency: 80 %)(PROC2)

	General exposures (closed systems) Batch process	Provide extract ventilation to points where emissions occur. (Efficiency: 80 %)(PROC3)
	Bulk transfers	Use drum pumps. Avoid carrying out operation for more than 1 hour. alternatively Limit the substance content in the product to 5 %.(PROC8a, PROC8b)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN374.	

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

Workers

PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16: Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1, PROC3, PROC8b, PROC16	---	worker dermal, short and long term - systemic	0,34mg/kg bw/day	0,008
PROC1	---	Worker - inhalative, long-term - systemic	0,13mg/m3	0,0005
PROC1	---	Worker - inhalative, short-term - systemic	0,53mg/m3	0,002
PROC2	---	worker dermal, short and long term - systemic	1,37mg/kg bw/day	0,034
PROC2	---	Worker - inhalative, long-term - systemic	13,33mg/m3	0,051
PROC2	---	Worker - inhalative, short-term - systemic	53,33mg/m3	0,205
PROC3	---	Worker - inhalative, long-term - systemic	26,67mg/m3	0,103
PROC3	---	Worker - inhalative, short-term - systemic	106,67mg/m3	0,440
PROC8a	---	worker dermal, short and long term - systemic	0,68mg/kg bw/day	0,017
PROC8a	---	Worker - inhalative, long-term - systemic	33,33mg/m3	0,128
PROC8a	---	Worker - inhalative, short-term - systemic	66,67mg/m3	0,256

PROC8b	---	Worker - inhalative, long-term - systemic	16,67mg/m3	0,064
PROC8b	---	Worker - inhalative, short-term - systemic	33,34mg/m3	0,128
PROC16	---	Worker - inhalative, long-term - systemic	66,67mg/m3	0,256
PROC16	---	Worker - inhalative, short-term - systemic	133,34mg/m3	0,513

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.
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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

1. Short title of Exposure Scenario 10: Use in fuel		
Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)	
Chemical product category	PC13: Fuels	
Environmental Release Categories	ERC8b: Wide dispersive indoor use of reactive substances in open systems ERC8e: Wide dispersive outdoor use of reactive substances 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: ERC8b, ERC8e, ERC9a, ERC9b		
No exposure assessment presented for the environment		
2.2 Contributing scenario controlling consumer exposure for: PC13: Liquid: Automotive Refuelling		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Amount used	Amount used per event	37,5 kg
Frequency and duration of use	Exposure duration per event	3 min
	Frequency of use	104 days/year
Human factors not influenced by risk management	Exposed skin area	Palm of one Hand 210 cm²
Other given operational conditions affecting consumers exposure	Outdoor use	
2.3 Contributing scenario controlling consumer exposure for: PC13: Liquid: Lamp oil		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 80%
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Amount used	Amount used per event	800 g
Frequency and duration of use	Exposure duration per event	1 min
	Frequency of use	104 days/year
Human factors not influenced by risk management	Exposed skin area	Palm of one Hand 210 cm²
Other given operational	Room size	20 m3

conditions affecting consumers exposure	Ventilation rate per hour	0,5

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

Consumers

PC13: Liquid: Lamp oil: ECETOC TRA

PC13: Liquid: Automotive Refuelling, PC13: Liquid: Lamp oil: ConsExpo

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PC13: Liquid: Automotive Refuelling	---	Consumer - inhalative, long-term - systemic	0,287mg/m3	---
PC13: Liquid: Automotive Refuelling	---	Consumer - inhalative, short-term - systemic	41,3mg/m3	---
PC13: Liquid: Lamp oil	---	Consumer dermal, acute and long term - systemic	0,34mg/kg bw/day	---
PC13: Liquid: Lamp oil	---	Consumer - inhalative, long-term - systemic	4,67mg/m3	---
PC13: Liquid: Lamp oil	---	Consumer - inhalative, short-term - systemic	9,34mg/m3	---

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.
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
For further information on the assessment method, see:
http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp
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

1. Short title of Exposure Scenario 11: Use in laboratories		
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites	
Process categories	PROC10: Roller application or brushing 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		
No exposure assessment presented for the environment		
2.2 Contributing scenario controlling worker exposure for: PROC10, PROC15		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 80%
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours	
Human factors not influenced by risk management	Exposed skin area	Two hands 960 cm² (PROC10)
	Exposed skin area	One hand, face side only. 240 cm² (PROC15)
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature.	
Technical conditions and measures to control dispersion from source towards the worker	Cleaning Rolling, Brushing Vessel and container cleaning	Carefully pour from containers. Retain drain downs in sealed storage pending disposal or for subsequent recycle. Handle in a fume cupboard or under extract ventilation. (Efficiency: 90 %)(PROC10)
	Laboratory activities small scale	Handle in a fume cupboard or under extract ventilation. (Efficiency: 90 %)(PROC15)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN374.	

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

Workers

PROC10, PROC15: Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR

PROC10	---	worker dermal, short and long term - systemic	21,94mg/kg bw/day	0,549
PROC10	---	Worker - inhalative, long-term - systemic	26,67mg/m3	0,103
PROC10	---	Worker - inhalative, short-term - systemic	53,34mg/m3	0,205
PROC15	---	worker dermal, short and long term - systemic	0,34mg/kg bw/day	0,008
PROC15	---	Worker - inhalative, long-term - systemic	6,67mg/m3	0,026
PROC15	---	Worker - inhalative, short-term - systemic	13,33mg/m3	0,051

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.
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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

1. Short title of Exposure Scenario 12: Use in laboratories		
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)	
Process categories	PROC10: Roller application or brushing PROC15: Use as laboratory reagent	
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems	
2.1 Contributing scenario controlling environmental exposure for: ERC8a		
No exposure assessment presented for the environment		
2.2 Contributing scenario controlling worker exposure for: PROC10, PROC15		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours	
Human factors not influenced by risk management	Exposed skin area	Two hands 960 cm² (PROC10)
	Exposed skin area	One hand, face side only. 240 cm² (PROC15)
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature.	
Technical conditions and measures to control dispersion from source towards the worker	Cleaning Rolling, Brushing	Carefully pour from containers. Limit the substance content in the product to 5 %.(PROC10)
	Laboratory activities small scale	Handle in a fume cupboard or under extract ventilation. (Efficiency: 80 %)(PROC15)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN374.	

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

Workers

PROC10, PROC15: Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC10	---	worker dermal, short and long term - systemic	1,37mg/kg bw/day	0,034

PROC10	---	Worker - inhalative, long-term - systemic	33,33mg/m3	0,128
PROC10	---	Worker - inhalative, short-term - systemic	66,67mg/m3	0,256
PROC15	---	worker dermal, short and long term - systemic	0,34mg/kg bw/day	0,008
PROC15	---	Worker - inhalative, long-term - systemic	13,33mg/m3	0,051
PROC15	---	Worker - inhalative, short-term - systemic	26,67mg/m3	0,103

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.
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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

1. Short title of Exposure Scenario 13: Use in de-icing and anti-icing applications		
Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)	
Chemical product category	PC4: Anti-Freeze and de-icing 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	
2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d		
No exposure assessment presented for the environment		
2.2 Contributing scenario controlling consumer exposure for: PC4: Washing car window		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 2,5%
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Amount used	Amount used per event	100 g
Frequency and duration of use	Exposure duration per event	2 h
	Frequency of use	102 days/year
Human factors not influenced by risk management	Exposed skin area	Hands and forearms. 1900 cm²
Other given operational conditions affecting consumers exposure	Ventilation rate per hour	0,5
	Covers use in a one car garage (34 m3) under typical ventilation.	
2.3 Contributing scenario controlling consumer exposure for: PC4: Lock de-icer		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 5%
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Amount used	Amount used per event	16,2 g
Frequency and duration of use	Exposure duration per event	1 h
	Frequency of use	365 days/year
Human factors not influenced by risk management	Exposed skin area	Two hands 960 cm²
Other given operational conditions affecting consumers exposure	Room size	15 m3
	Ventilation rate per hour	2,5

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

Consumers

ECETOC TRA consumer v3. The ConsExpo model has been used to estimate consumer exposures unless otherwise indicated.

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.
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
For further information on the assessment method, see:
http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp
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

1. Short title of Exposure Scenario 14: Use as water treatment chemicals		
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites	
Process categories	PROC2: Use in closed, continuous process with occasional controlled exposure	
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC6b: Industrial use of reactive processing aids	
2.1 Contributing scenario controlling environmental exposure for: ERC4, ERC6b		
No exposure assessment presented for the environment		
2.2 Contributing scenario controlling worker exposure for: PROC2		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours	
Human factors not influenced by risk management	Exposed skin area	Two hands face side only. 480 cm²
Other operational conditions affecting workers exposure	Indoor use	
	Assumes use at not more than 20°C above ambient temperature.	
Technical conditions and measures to control dispersion from source towards the worker	Drain or remove substance from equipment prior to break-in or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle. Carefully pour from containers. Provide local exhaust ventilation (LEV). (Efficiency: 90 %)(PROC2)	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN374.	

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

Workers

PROC2: Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC2	---	worker dermal, short and long term - systemic	1,37mg/kg bw/day	0,034

PROC2	---	Worker - inhalative, long-term - systemic	6,67mg/m3	0,026
PROC2	---	Worker - inhalative, short-term - systemic	26,67mg/m3	0,103

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.
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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

1. Short title of Exposure Scenario 15: Use in oil and gas field drilling and production operations		
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)	
Process categories	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	
Environmental Release Categories	ERC9b: Wide dispersive outdoor use of substances in closed systems	
2.1 Contributing scenario controlling environmental exposure for: ERC9b		
No exposure assessment presented for the environment		
2.2 Contributing scenario controlling worker exposure for: PROC4, PROC5, PROC8a, PROC8b		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Exposure duration per day	< 4 h(PROC4)
	Frequency of use	< 240 days/year(PROC5, PROC8a, PROC8b)
	Covers daily exposures up to 8 hours(PROC5, PROC8a, PROC8b)	
Human factors not influenced by risk management	Exposed skin area	Two hands face side only. 480 cm² (PROC4, PROC5, PROC8b)
	Exposed skin area	Two hands 960 cm² (PROC8a)
Other operational conditions affecting workers exposure	Limit the substance content in the product to 5 %.(PROC5, PROC8a, PROC8b)	
	Indoor use	
Technical conditions and measures to control dispersion from source towards the worker	Provide local exhaust ventilation (LEV). (Efficiency: 80 %)(PROC4)	
3. Exposure estimation and reference to its source		
Environment		
No exposure assessment presented for the environment.		
Workers		

PROC4, PROC5, PROC8a, PROC8b: ECETOC TRA worker v3

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC4	---	worker dermal, short and long term - systemic	6,86mg/kg bw/day	0,171
PROC4	---	Worker - inhalative, long-term - systemic	40,00mg/m3	0,154
PROC4	---	Worker - inhalative, short-term - systemic	160,00mg/m3	0,615
PROC5, PROC8a	---	worker dermal, short and long term - systemic	0,68mg/kg bw/day	0,017
PROC5, PROC8a	---	Worker - inhalative, long-term - systemic	33,33mg/m3	0,128
PROC5, PROC8a	---	Worker - inhalative, short-term - systemic	66,67mg/m3	0,256
PROC8b	---	worker dermal, short and long term - systemic	0,34mg/kg bw/day	0,008
PROC8b	---	Worker - inhalative, long-term - systemic	16,67mg/m3	0,064
PROC8b	---	Worker - inhalative, short-term - systemic	33,34mg/m3	0,128

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.
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

1. Short title of Exposure Scenario 16: Use in oil and gas field drilling and production operations		
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) 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	
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		
No exposure assessment presented for the environment		
2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours	
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature.	
Technical conditions and measures to control dispersion from source towards the worker	Bulk transfers	Limit the substance content in the product to 5 %.(PROC8a, PROC8b)
	Filling/ preparation of equipment from drums or containers.	Limit the substance content in the product to 5 %.(PROC8a, PROC8b)
	Drill floor operations General exposures Closed systems	Ensure operation is undertaken outdoors.(PROC4)
	Drill floor operations General exposures Open systems	Ensure operation is undertaken outdoors.(PROC4)

	Operation of solids filtering equipment	Ensure material transfers are under containment or extract ventilation. Avoid carrying out operation for more than 4 hours.(PROC4)
	Treatment and disposal of filtered solids	Ensure material transfers are under containment or extract ventilation.(PROC3)
	Mixing operations (open systems)	Limit the substance content in the product to 5 %.(PROC5)
	Equipment cleaning and maintenance	Limit the substance content in the product to 5 %. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.(PROC2, PROC8a, PROC8b)
	Batch process with occasional controlled exposure	Provide extract ventilation to points where emissions occur.(PROC3)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.	

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

Workers

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

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.
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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

COMPANY INFORMATION DISTRIBUTOR		
name	**BRENNTAG N.V.**	**BRENNTAG Nederland B.V.**
address	Nijverheidslaan 38 8540 Deerlijk	Donker Duyvisweg 44 3316 BM Dordrecht
country	Belgium	The Netherlands
phone number	+32 (0)56 77 69 44	+31 (0)78 65 44 944
fax number	+32 (0)56 77 57 11	+31 (0)78 65 44 919
website	www.brenntag.be	www.brenntag.nl
e-mail	info@brenntag.be	info@brenntag.nl
activities	Distribution and export of chemicals and raw materials	
VAT number	BE0405317567	NL001375945B01
recall procedure available	Yes	
emergency number (24/365)	+32 (0)56 77 69 44	+31 (0)78 6544 944
QUALITY SYSTEMS		
ISO 9001	Yes	Yes
ISO 14001	Yes	Yes
ISO 22000	Yes	Yes
FSSC 22000	Yes	Yes
GMP+ -feed	Yes	Yes
OHSAS18001	-	Yes
ESAD	Yes	Yes
other	-	AEO