



**Sicherheitsdatenblatt vom 14/11/2022, Version 9**

**ABSCHNITT 1: Bezeichnung des Stoffs beziehungsweise des Gemischs und des Unternehmens**

1.1. Produktidentifikator

Kennzeichnung der Mischung:

Handelsname: DP1

Handelscode: 31032

1.2. Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird

Empfohlene Verwendung:

Reinigungsmittel für Windschutzscheiben

1.3. Einzelheiten zum Lieferanten, der das Sicherheitsdatenblatt bereitstellt

Lieferant:

Arexons S.p.A.

via Antica di Cassano, 23, 20063

Cernusco sul Naviglio (MI), Italy

Arexons S.p.A.

Tel. +39 (0)2/924361 - Fax +39 (0)2/92436306

Sachkundigen Person verantwortlich vom Sicherheitsdatenblatt:

arexons@arexons.it

1.4. Notrufnummer

Arexons S.p.A.

Tel. +39 (0)2/924361 - Fax +39 (0)2/92436306

Austrian emergency telephone number : Vergiftungsinformationszentrale (+43 1 406 43 43)

Giftnotruf Berlin: +49 30 30686790

Antigifcentrum Brussel: 80025500 (7 jours sur 7, 24 heures sur 24).

**ABSCHNITT 2: Mögliche Gefahren**

2.1. Einstufung des Stoffs oder Gemischs

Kriterien der EG Verordnung 1272/2008 (CLP):

⚠ Gefahr, Flam. Liq. 2, Flüssigkeit und Dampf leicht entzündbar.

⚠ Achtung, Eye Irrit. 2, Verursacht schwere Augenreizung.

Für die menschlichen Gesundheit und die Umwelt gefährliche physisch-chemische Auswirkungen:

Keine weiteren Risiken

2.2. Kennzeichnungselemente

Gefahrenpiktogramme:



Gefahr

Gefahrenhinweise:

H225 Flüssigkeit und Dampf leicht entzündbar.

H319 Verursacht schwere Augenreizung.

Sicherheitshinweise:

P101 Ist ärztlicher Rat erforderlich, Verpackung oder Kennzeichnungsetikett bereithalten.

P102 Darf nicht in die Hände von Kindern gelangen.

P103 Lesen Sie sämtliche Anweisungen aufmerksam und befolgen Sie diese.

P210 Von Hitze, heißen Oberflächen, Funken, offenen Flammen sowie anderen Zündquellenarten fernhalten. Nicht rauchen.

# Sicherheitsdatenblatt

## DP1



P370+P378 Bei Brand: Schaum für Alkohole zum Löschen verwenden.

P403+P235 An einem gut belüfteten Ort aufbewahren. Kühl halten

P501 Inhalt/Behälter laut Verordnung der Entsorgung zuführen.

Spezielle Vorschriften:

PACK2 Die Verpackung muss eine Gefahranzeige in Blindenschrift aufweisen.

Besondere Regelungen gemäß Anhang XVII der REACH-Verordnung nachfolgenden Änderungen:  
Keine

Verordnung (EG) Nr. 648/2004 (Detergenzien).

2.3. Sonstige Gefahren

Keine PBT-, vPvB-Stoffe oder endokrine Disruptoren in Konzentrationen  $\geq 0.1\%$ :

Weitere Risiken:

Keine weiteren Risiken

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### ABSCHNITT 3: Zusammensetzung/Angaben zu Bestandteilen

3.1. Stoffe

N.A.

3.2. Gemische

Gefährliche Bestandteile gemäß der CLP-Verordnung und dazugehörige Einstufung:

$\geq 50\%$  -  $< 60\%$  Ethanol

REACH No.: 01-2119457610-43, CAS: 64-17-5, EC: 200-578-6

⚠ 2.6/2 Flam. Liq. 2 H225

⚠ 3.3/2 Eye Irrit. 2 H319

Spezifische Konzentrationsgrenzwerte:

C  $\geq 50\%$ : Eye Irrit. 2 H319

$\geq 5\%$  -  $< 7\%$  Ethandiol; 1,2-Ethandiol; Ethylenglycol

REACH No.: 01-2119456816-28, Index-Nummer: 603-027-00-1, CAS: 107-21-1, EC: 203-473-3

⚠ 3.1/4/Oral Acute Tox. 4 H302

⚠ 3.9/2 STOT RE 2 H373 (Nieren) (oral)

$\geq 1\%$  -  $< 2\%$  2-Propanol; Isopropylalkohol; Isopropanol

REACH No.: 01-2119457558-25, Index-Nummer: 603-117-00-0, CAS: 67-63-0, EC: 200-661-7

⚠ 2.6/2 Flam. Liq. 2 H225

⚠ 3.3/2 Eye Irrit. 2 H319

⚠ 3.8/3 STOT SE 3 H336

$\geq 0.05\%$  -  $< 0.1\%$  2-Methylpropan-2-ol; tert-Butylalkohol; tert-Butanol

REACH No.: 01-2119444321-51, CAS: 75-65-0, EC: 200-889-7

⚠ 2.6/2 Flam. Liq. 2 H225

⚠ 3.1/4/Inhal Acute Tox. 4 H332

⚠ 3.3/2 Eye Irrit. 2 H319

⚠ 3.8/3 STOT SE 3 H335

$\geq 0.001\%$  -  $< 0.005\%$  Natriumhydroxid; Ätznatron; Natronlauge

REACH No.: 02-2119457892-27, Index-Nummer: 011-002-00-6, CAS: 1310-73-2, EC: 215-185-5

⚠ 2.16/1 Met. Corr. 1 H290

⚠ 3.2/1A Skin Corr. 1A H314

Spezifische Konzentrationsgrenzwerte:

0,5%  $\leq$  C  $<$  2%: Skin Irrit. 2 H315

0,5%  $\leq$  C  $<$  2%: Eye Irrit. 2 H319



2% <= C < 5%: Skin Corr. 1B H314  
C >= 5%: Skin Corr. 1A H314

>= 0.001% - < 0.005% 1-Methoxy-2-propanol; Monopropylenglycolmethylether  
REACH No.: 01-2119457435-35, Index-Nummer: 603-064-00-3, CAS: 107-98-2, EC: 203-539-1  
⚠ 2.6/3 Flam. Liq. 3 H226  
⚠ 3.8/3 STOT SE 3 H336

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#### **ABSCHNITT 4: Erste-Hilfe-Maßnahmen**

##### 4.1. Beschreibung der Erste-Hilfe-Maßnahmen

Nach Hautkontakt:

Verunreinigte Kleidung sofort ausziehen.

Körperbereiche, die mit dem Produkt in Kontakt getreten sind, bzw. bei denen dieser Verdacht besteht, müssen sofort mit viel fließendem Wasser und möglichst mit Seife gewaschen werden.

Den Körper vollständig waschen (Dusche oder Bad).

Die kontaminierten Kleidungsstücke sofort ablegen und sie auf sichere Weise entsorgen.

Im Falle von Hautkontakt sofort mit reichlich Wasser und Seife waschen.

Nach Augenkontakt:

Im Falle von Augenkontakt die Augen über einen ausreichenden Zeitraum mit Wasser spülen und die Augenlider offen halten; sofort einen Augenarzt konsultieren.

Das unverletzte Auge schützen.

Nach Verschlucken:

Auf keinen Fall Erbrechen herbeiführen. SOFORT ARZT ZUZIEHEN.

Nach Einatmen:

Den Verletzten ins Freie bringen, ihn ausruhen lassen und warm halten.

##### 4.2. Wichtigste akute und verzögert auftretende Symptome und Wirkungen

Keine

##### 4.3. Hinweise auf ärztliche Soforthilfe oder Spezialbehandlung

Im Falle eines Unfalls bzw. bei Unwohlsein sofort einen Arzt konsultieren (wenn möglich, die Bedienungsanleitung bzw. das Sicherheitsdatenblatt vorzeigen).

Behandlung:

Keine

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#### **ABSCHNITT 5: Maßnahmen zur Brandbekämpfung**

##### 5.1. Löschmittel

Geeignete Löschmittel:

Mit Kohlendioxid.

Mit Pulver.

Schaum für Alkohole

Wasserdampf.

Löschmittel nicht empfohlen:

Keine direkten Wasserstrahlen benutzen

##### 5.2. Besondere vom Stoff oder Gemisch ausgehende Gefahren

Die Explosions- bzw. Verbrennungsgase nicht einatmen.

Durch die Verbrennung entsteht ein dichter Rauch.

##### 5.3. Hinweise für die Brandbekämpfung

Geeignete Atemgeräte verwenden.

Das kontaminierte Löschwasser getrennt auffangen. Nicht in der Abwasserleitung entsorgen.

Wenn im Rahmen der Sicherheit möglich, die unbeschädigten Behälter aus der unmittelbaren Gefahrenzone entfernen.



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## **ABSCHNITT 6: Maßnahmen bei unbeabsichtigter Freisetzung**

- 6.1. Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren
- Die persönliche Schutzausrüstung tragen.
  - Alle Entzündungsquellen entfernen.
  - Die Personen an einen sicheren Ort bringen.
  - Die in Punkt 7 und 8 aufgeführten Schutzmaßnahmen beachten.
- 6.2. Umweltschutzmaßnahmen
- Das Eindringen in den Boden/Unterboden verhindern. Das Abfließen in das Grundwasser oder in die Kanalisation verhindern.
  - Das kontaminierte Waschwasser auffangen und entsorgen.
  - Bei Austritt von Gas oder bei Eintritt in Wasserläufe, den Boden oder die Kanalisation die zuständigen Behörden informieren.
  - Geeignetes Material zum Auffangen: absorbierende oder organische Materialien, Sand
- 6.3. Methoden und Material für Rückhaltung und Reinigung
- Mit reichlich Wasser waschen.
- 6.4. Verweis auf andere Abschnitte
- Siehe auch die Abschnitte 8 und 13

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## **ABSCHNITT 7: Handhabung und Lagerung**

- 7.1. Schutzmaßnahmen zur sicheren Handhabung
- Haut- und Augenkontakt sowie das Einatmen von Dämpfen vermeiden.
  - Keine leeren Behälter verwenden, bevor diese nicht gereinigt wurden.
  - Vor dem Umfüllen sicherstellen, dass sich in den Behältern keine Reste inkompatibler Stoffe befinden.
  - Für die empfohlenen Schutzausrüstungen wird auf Abschnitt 8 verwiesen.
- Kontaminierte Kleidungsstücke müssen vor dem Eintritt in Speiseräume gewechselt werden.  
Während der Arbeit nicht essen oder trinken.
- 7.2. Bedingungen zur sicheren Lagerung unter Berücksichtigung von Unverträglichkeiten
- LGK class = 3
- Immer in gut gelüfteten Räumen lagern.
  - Unter 50 °C lagern. Vor offenen Flammen und Wärmequellen fern halten. Keiner direkten Sonneneinstrahlung aussetzen.
  - Vor offenen Flammen, Zündfunken und Wärmequellen fern halten. Keiner direkten Sonneneinstrahlung aussetzen.
  - Lebensmittel, Getränke und Tiernahrung fern halten.
  - Kein spezifischer.
  - Angaben zu den Lagerräumen:  
Kühl und ausreichend belüftet.
- 7.3. Spezifische Endanwendungen
- Kein besonderer Verwendungszweck

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## **ABSCHNITT 8: Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen**

- 8.1. Zu überwachende Parameter
- Ethanol - CAS: 64-17-5
    - ACGIH - STEL: 1000 ppm - Anmerkungen: A3 - URT irr
  - Ethandiol; 1,2-Ethandiol; Ethylenglycol - CAS: 107-21-1
    - EU - TWA(8h): 52 mg/m<sup>3</sup>, 20 ppm - STEL: 104 mg/m<sup>3</sup>, 40 ppm - Anmerkungen: Skin
    - ACGIH - TWA(8h): 25 ppm - STEL: 50 ppm - Anmerkungen: (V), A4 - URT irr
    - ACGIH - STEL: 10 mg/m<sup>3</sup> - Anmerkungen: (I, H), A4 - URT irr
  - 2-Propanol; Isopropylalkohol; Isopropanol - CAS: 67-63-0
    - ACGIH - TWA(8h): 200 ppm - STEL: 400 ppm - Anmerkungen: A4, BEI - Eye and URT irr,



- CNS impair  
2-Methylpropan-2-ol; tert-Butylalkohol; tert-Butanol - CAS: 75-65-0  
ACGIH - TWA(8h): 100 ppm - Anmerkungen: A4 - CNS impair  
Natriumhydroxid; Ätznatron; Natronlauge - CAS: 1310-73-2  
20101.10 - TWA: 2 mg/m<sup>3</sup>  
ACGIH - STEL: Decke 2 mg/m<sup>3</sup> - Anmerkungen: URT, eye, and skin irr  
1-Methoxy-2-propanol; Monopropylenglycolmethylether - CAS: 107-98-2  
EU - TWA(8h): 375 mg/m<sup>3</sup>, 100 ppm - STEL: 563 mg/m<sup>3</sup>, 150 ppm - Anmerkungen: Skin  
ACGIH - TWA(8h): 184 mg/m<sup>3</sup>, 50 ppm - STEL: 368 mg/m<sup>3</sup>, 100 ppm - Anmerkungen:  
A4 - Eye and URT irr
- DNEL-Expositionsgrenzwerte  
Ethanol - CAS: 64-17-5  
Arbeitnehmer Gewerbe: 1900 mg/m<sup>3</sup> - Exposition: Mensch - Inhalation - Häufigkeit:  
Kurzfristig (akut)  
Arbeitnehmer Gewerbe: 950 mg/m<sup>3</sup> - Exposition: Mensch - Inhalation - Häufigkeit:  
Langfristig, systemische Auswirkungen  
Arbeitnehmer Gewerbe: 343 mg/kg - Exposition: Mensch - dermal - Häufigkeit: Langfristig,  
systemische Auswirkungen  
2-Propanol; Isopropylalkohol; Isopropanol - CAS: 67-63-0  
Verbraucher: 26 mg/kg - Exposition: Mensch - oral - Häufigkeit: Langfristig, systemische  
Auswirkungen  
Arbeitnehmer Gewerbe: 500 mg/m<sup>3</sup> - Verbraucher: 89 mg/m<sup>3</sup> - Exposition: Mensch -  
Inhalation - Häufigkeit: Langfristig, systemische Auswirkungen  
Arbeitnehmer Gewerbe: 880 mg/kg - Verbraucher: 319 mg/kg - Exposition: Mensch -  
dermal - Häufigkeit: Langfristig, systemische Auswirkungen  
Natriumhydroxid; Ätznatron; Natronlauge - CAS: 1310-73-2  
Arbeitnehmer Gewerbe: 1 mg/m<sup>3</sup> - Verbraucher: 1 mg/l - Exposition: Mensch - Inhalation -  
Häufigkeit: Langfristig, lokale Auswirkungen  
1-Methoxy-2-propanol; Monopropylenglycolmethylether - CAS: 107-98-2  
Verbraucher: 3.3 mg/kg - Exposition: Mensch - oral - Häufigkeit: Langfristig, systemische  
Auswirkungen  
Arbeitnehmer Gewerbe: 369 mg/m<sup>3</sup> - Verbraucher: 43.9 mg/m<sup>3</sup> - Exposition: Mensch -  
Inhalation - Häufigkeit: Langfristig, systemische Auswirkungen  
Arbeitnehmer Gewerbe: 50.6 mg/kg - Verbraucher: 18.1 mg/kg - Exposition: Mensch -  
dermal - Häufigkeit: Langfristig, systemische Auswirkungen  
Arbeitnehmer Gewerbe: 553.5 mg/m<sup>3</sup> - Exposition: Mensch - Inhalation - Häufigkeit:  
Kurzfristig, lokale Auswirkungen
- PNEC-Expositionsgrenzwerte  
Ethanol - CAS: 64-17-5  
Ziel: Süßwasser - Wert: 0.96 mg/l  
Ziel: Meerwasser - Wert: 0.79 mg/l  
Ziel: Flußsediment - Wert: 3.6 mg/kg  
Ziel: Meerwasser-Sedimente - Wert: 2.9 mg/kg  
Ziel: 09 - Wert: 580 mg/l  
2-Propanol; Isopropylalkohol; Isopropanol - CAS: 67-63-0  
Ziel: Süßwasser - Wert: 140.9 mg/l  
Ziel: Meerwasser - Wert: 140.9 mg/l  
Ziel: Flußsediment - Wert: 552 mg/kg  
Ziel: Meerwasser-Sedimente - Wert: 552 mg/kg  
Ziel: Boden (Landwirtschaft) - Wert: 28 mg/kg  
1-Methoxy-2-propanol; Monopropylenglycolmethylether - CAS: 107-98-2  
Ziel: Süßwasser - Wert: 10 mg/l  
Ziel: Flußsediment - Wert: 52.3 mg/kg  
Ziel: Meerwasser - Wert: 1 mg/l  
Ziel: Meerwasser-Sedimente - Wert: 5.2 mg/kg  
Ziel: Boden (Landwirtschaft) - Wert: 4.59 mg/l



8.2. Begrenzung und Überwachung der Exposition

Augenschutz:

Die Sicherheitsvisiere schließen, keine Kontaktlinsen verwenden.

Hautschutz:

Bei normaler Verwendung sind besondere Vorsichtsmaßnahmen nicht notwendig.

Handschutz:

Schutzhandschuhe tragen, die einen vollständigen Schutz garantieren, z.B. aus PVC, Neopren oder Gummi.

Atemschutz:

Bei normaler Verwendung nicht erforderlich.

Wärmerisiken:

Keine

Kontrollen der Umweltexposition:

Keine

Geeignete technische Massnahmen:

Keine

**ABSCHNITT 9: Physikalische und chemische Eigenschaften**

9.1. Angaben zu den grundlegenden physikalischen und chemischen Eigenschaften

Eigenschaft	Wert	Methode:	Anmerkungen
Aggregatzustand:	flüssig	--	--
Farbe:	hellblau	--	--
Geruch:	charakteristisch	--	--
Schmelzpunkt/ Gefrierpunkt:	N.A.	--	--
Siedepunkt oder Siedebeginn und Siedebereich:	82°C	--	--
Entzündbarkeit:	Flam. Liq. 2, H225	--	--
Untere und obere Explosionsgrenze:	N.A.	--	--
Flammpunkt:	22,5 °C	--	--
Selbstentzündungstemperatur:	N.A.	--	--
Zerfalltemperatur:	N.A.	--	--
pH:	10.5	--	--
Kinematische Viskosität:	N.A.	--	--
Wasserlöslichkeit:	N.A.	--	--
Löslichkeit in Öl:	N.A.	--	--
Verteilungskoeffizient n-	N.A.	--	--



Oktanol/Wasser (log-Wert):			
Dampfdruck:	N.A.	--	--
Dichte und/oder relative Dichte:	0.904 g/cm <sup>3</sup>	--	--
Relative Dampfdichte:	N.A.	--	--
Partikeleigenschaften:			
Teilchengröße:	N.A.	--	--

9.2. Sonstige Angaben  
Keine weiteren relevanten Informationen

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## ABSCHNITT 10: Stabilität und Reaktivität

- 10.1. Reaktivität  
Stabil unter Normalbedingungen
- 10.2. Chemische Stabilität  
Stabil unter Normalbedingungen
- 10.3. Möglichkeit gefährlicher Reaktionen  
Kann unter Einwirkung von Dithiokarbamaten, Mercaptanen und weiteren organischen Sulfiden, elementaren Metallen (Alkali- und Erdalkalimetallen), Pulverlegierungen, Dämpfen, starken Reduktionsmitteln entflammbare Gase bilden.  
Kann unter Einwirkung von anorganischen Fluoriden, halogenierten organischen Stoffen, Sulfiden, Nitriden, Nitrilen, organischen Phosphaten, Phosphothioaten, Phosphodithioaten, starken Oxydationsmitteln giftige Gase bilden.  
Kann sich unter Einwirkung von Dithiokarbamaten, elementaren Metallen (Alkali- und Erdalkalimetallen, Pulverlegierungen, Dämpfen, Platten oder Stangen), Nitriden entzünden.
- 10.4. Zu vermeidende Bedingungen  
Unter normalen Umständen stabil.
- 10.5. Unverträgliche Materialien  
Kontakt mit brandfördernden Materialien vermeiden. Das Produkt könnte in Brand geraten.
- 10.6. Gefährliche Zersetzungsprodukte  
Keine.

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## ABSCHNITT 11: Toxikologische Angaben

- 11.1. Angaben zu den Gefahrenklassen im Sinne der Verordnung (EG) Nr. 1272/2008  
Toxikologische Informationen zum Produkt:  
DP1 ML 500
  - a) akute Toxizität  
Nicht klassifiziert  
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
  - b) Ätz-/Reizwirkung auf die Haut  
Nicht klassifiziert  
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
  - c) schwere Augenschädigung/-reizung  
Das Produkt ist eingestuft: Eye Irrit. 2 H319
  - d) Sensibilisierung der Atemwege/Haut  
Nicht klassifiziert  
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.



- e) Keimzell-Mutagenität  
Nicht klassifiziert  
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- f) Karzinogenität  
Nicht klassifiziert  
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- g) Reproduktionstoxizität  
Nicht klassifiziert  
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- h) spezifische Zielorgan-Toxizität bei einmaliger Exposition  
Nicht klassifiziert  
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- i) spezifische Zielorgan-Toxizität bei wiederholter Exposition  
Nicht klassifiziert  
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- j) Aspirationsgefahr  
Nicht klassifiziert  
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

Toxikologische Informationen zu den Hauptbestandteilen des Produkts:

Ethanol - CAS: 64-17-5

d) Sensibilisierung der Atemwege/Haut:

Test: Sensibilisierung der Haut - Weg: Haut Negativ

e) Keimzell-Mutagenität:

Test: Genotoxizität - Spezies: vitro Negativ

f) Karzinogenität:

Test: Karzinogenität - Spezies: mam Positiv

g) Reproduktionstoxizität:

Test: NOAEL - Weg: Einatmen - Spezies: Ratte = 1600 ppm

2-Propanol; Isopropylalkohol; Isopropanol - CAS: 67-63-0

a) akute Toxizität:

Test: LD50 - Weg: Oral - Spezies: Ratte 4396-5500 mg/kg

Test: LD50 - Weg: Haut - Spezies: Kaninchen 12870 mg/kg

Test: LC50 - Weg: Einatmen - Spezies: Ratte 72.6 mg/l - Laufzeit: 4h

1-Methoxy-2-propanol; Monopropylenglycolmethylether - CAS: 107-98-2

a) akute Toxizität:

Test: LD50 - Weg: Oral 5300 mg/kg

Test: LD50 - Weg: Haut 13000 mg/kg

Test: LD50 - Weg: Einatmen 54.6 mg/l - Laufzeit: 4h

#### 11.2. Angaben über sonstige Gefahren

Endokrinschädliche Eigenschaften:

Keine endokrinen Disruptoren in Konzentrationen  $\geq 0.1$  %.

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## ABSCHNITT 12: Umweltbezogene Angaben

### 12.1. Toxizität

Im Einklang mit der GLP verwenden, nicht herumliegen lassen.

Ethanol - CAS: 64-17-5

a) Akute aquatische Toxizität:

Endpunkt: LC50 - Spezies: Fische 14.2 GL - Dauer / h: 96

Endpunkt: LC50 - Spezies: Daphnia 29.6 GL - Dauer / h: 24

Endpunkt: EC50 - Spezies: Algen 19000 mg/l - Dauer / h: 96

Endpunkt: EC50 - Spezies: batteri 39.5 GL - Dauer / h: 4

b) Chronische aquatische Toxizität:

Endpunkt: EC50 - Spezies: Fische 14536 mg/l - Dauer / h: 200

Endpunkt: LC50 - Spezies: Daphnia 9248 mg/l - Dauer / h: 48

Natriumhydroxid; Ätznatron; Natronlauge - CAS: 1310-73-2





- a) Akute aquatische Toxizität:  
Endpunkt: EC50 - Spezies: Daphnia 40.4 mg/l - Dauer / h: 48
- 12.2. Persistenz und Abbaubarkeit  
Keine  
1-Methoxy-2-propanol; Monopropylenglycolmethylether - CAS: 107-98-2  
Biologische Abbaubarkeit: Schnell abbaubar
- 12.3. Bioakkumulationspotenzial  
2-Propanol; Isopropylalkohol; Isopropanol - CAS: 67-63-0  
Test: Kow - Verteilungskoeffizient 0.05  
Natriumhydroxid; Ätznatron; Natronlauge - CAS: 1310-73-2  
Bioakkumulation: Nicht bioakkumulierbar
- 12.4. Mobilität im Boden  
Natriumhydroxid; Ätznatron; Natronlauge - CAS: 1310-73-2  
Mobilität im Boden: Nicht mobil
- 12.5. Ergebnisse der PBT- und vPvB-Beurteilung  
vPvB-Stoffe: Keine - PBT-Stoffe: Keine
- 12.6. Endokrinschädliche Eigenschaften  
Keine endokrinen Disruptoren in Konzentrationen  $\geq 0.1$  %.
- 12.7. Andere schädliche Wirkungen  
Keine

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### ABSCHNITT 13: Hinweise zur Entsorgung

- 13.1. Verfahren der Abfallbehandlung  
Nach Möglichkeit wiederverwerten. Behördlich zugelassenen Deponien oder Verbrennungsanlagen zuführen. Entsprechend den geltenden örtlichen und nationalen Bestimmungen vorgehen.

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### ABSCHNITT 14: Angaben zum Transport



- 14.1. UN-Nummer oder ID-Nummer  
ADR-UN Number: 1987  
IATA-UN Number: 1987  
IMDG-UN Number: 1987
- 14.2. Ordnungsgemäße UN-Versandbezeichnung  
ADR-Shipping Name: ALKOHOLE, N.A.G. (ethanol, 2-propanol; isopropylalkohol; isopropanol)  
IATA-Shipping Name: ALKOHOLE, N.A.G. (ethanol, 2-propanol; isopropylalkohol; isopropanol)  
IMDG-Shipping Name: ALKOHOLE, N.A.G. (ethanol, 2-propanol; isopropylalkohol; isopropanol)
- 14.3. Transportgefahrenklassen  
ADR-Class: 3  
ADR - Gefahrnummer: 33  
IATA-Class: 3  
IATA-Label: 3  
IMDG-Class: 3  
IMDG-Klasse: 3. PG II
- 14.4. Verpackungsgruppe  
ADR-Packing Group: II  
IATA-Packing group: II

# Sicherheitsdatenblatt

## DP1



IMDG-Packing group:	II	
14.5. Umweltgefahren		
ADR-Umweltbelastung:	Nein	
IMDG-Marine pollutant:	Nein	
IMDG-EmS:	F-E, S-D	
14.6. Besondere Vorsichtsmaßnahmen für den Verwender		
ADR-Subsidiary hazards:	-	
ADR-S.P.:	274 601 640D	
ADR-Beförderungskategorie (Tunnelbeschränkungscode):		2 (D/E)
IATA-Passenger Aircraft:	353	
IATA-Subsidiary hazards:	-	
IATA-Cargo Aircraft:	364	
IATA-S.P.:	A3 A180	
IATA-ERG:	3L	
IMDG-Subsidiary hazards:	-	
IMDG-Stowage and handling:	Category A	
IMDG-Segregation:	-	
14.7. Massengutbeförderung auf dem Seeweg gemäß IMO-Instrumenten		
N.A.		
Limited Quantity:	1 L	
Exempted Quantity:	E2	

### ABSCHNITT 15: Rechtsvorschriften

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

RL 98/24/EG (Schutz von Gesundheit und Sicherheit der Arbeitnehmer vor der Gefährdung durch chemische Arbeitsstoffe bei der Arbeit)

RL 2000/39/EG (Arbeitsplatz-Richtgrenzwerte)

Verordnung (EG) Nr. 1907/2006 (REACH)

Verordnung (EG) Nr. 1272/2008 (CLP)

Verordnung (EG) Nr. 790/2009 (1. ATP CLP) und (EU) Nr. 758/2013

Verordnung (EU) Nr. 2020/878

Verordnung (EU) Nr. 286/2011 (2. ATP CLP)

Verordnung (EU) Nr. 618/2012 (3. ATP CLP)

Verordnung (EU) Nr. 487/2013 (4. ATP CLP)

Verordnung (EU) Nr. 944/2013 (5. ATP CLP)

Verordnung (EU) Nr. 605/2014 (6. ATP CLP)

Verordnung (EU) Nr. 2015/1221 (7. ATP CLP)

Verordnung (EU) Nr. 2016/918 (8. ATP CLP)

Verordnung (EU) Nr. 2016/1179 (9. ATP CLP)

Verordnung (EU) Nr. 2017/776 (10. ATP CLP)

Verordnung (EU) Nr. 2018/669 (11. ATP CLP)

Verordnung (EU) Nr. 2018/1480 (13. ATP CLP)

Verordnung (EU) Nr. 2019/521 (12. ATP CLP)

Verordnung (EU) Nr. 2020/217 (14. ATP CLP)

Verordnung (EU) Nr. 2020/1182 (15. ATP CLP)

Verordnung (EU) Nr. 2021/643 (16. ATP CLP)

Beschränkungen zum Produkt oder zu den Inhaltsstoffen gemäß Anhang XVII der Verordnung (EG) 1907/2006 (REACH) und nachfolgenden Änderungen:

Beschränkungen zum Produkt:

Beschränkung 3

Beschränkung 40

Beschränkungen zu den Inhaltsstoffen gemäß:

Beschränkung 75



Flüchtige Organische Verbindung - FOV = 63.06 %  
Flüchtige Organische Verbindung - FOV = 630.62 g/Kg  
Flüchtige Organische Verbindung - FOV = 570.08 g/l  
Wo möglich auf die folgenden Normen Bezug nehmen:  
Richtlinie EU 2012/18 (Seveso III)  
Verordnung (EG) Nr. 648/2004 (Detergenzien).  
RL 2004/42/EG (FOV Richtlinie)

Anordnungen zu der Richtlinie EU 2012/18 (Seveso III):  
Seveso III Kategorie gemäß dem Anhang 1, Teil 1  
Das Produkt gehört zur Kategorie: P5c

15.2. Stoffsicherheitsbeurteilung

Keine Stoffsicherheitsbeurteilung wurde durchgeführt für das Gemisch  
Stoffe, für die eine Stoffsicherheitsbeurteilung durchgeführt worden ist:

Ethanol  
2-Propanol; Isopropylalkohol; Isopropanol

**ABSCHNITT 16: Sonstige Angaben**

Text der verwendeten Sätze im Absatz 3:

- H225 Flüssigkeit und Dampf leicht entzündbar.
- H319 Verursacht schwere Augenreizung.
- H302 Gesundheitsschädlich bei Verschlucken.
- H373 (Nieren) (oral) Kann bei Verschlucken die Organe (Nieren) schädigen bei längerer oder wiederholter Exposition.
- H336 Kann Schläfrigkeit und Benommenheit verursachen.
- H332 Gesundheitsschädlich bei Einatmen.
- H335 Kann die Atemwege reizen.
- H290 Kann gegenüber Metallen korrosiv sein.
- H314 Verursacht schwere Verätzungen der Haut und schwere Augenschäden.
- H315 Verursacht Hautreizungen.
- H226 Flüssigkeit und Dampf entzündbar.

Gefahrenklasse und Gefahrenkategorie	Code	Beschreibung
Met. Corr. 1	2.16/1	Auf Metalle korrosiv wirkende Stoffe oder Gemische, Kategorie 1
Flam. Liq. 2	2.6/2	Entzündbare Flüssigkeiten, Kategorie 2
Flam. Liq. 3	2.6/3	Entzündbare Flüssigkeiten, Kategorie 3
Acute Tox. 4	3.1/4/Inhal	Akute Toxizität (inhalativ), Kategorie 4
Acute Tox. 4	3.1/4/Oral	Akute Toxizität (oral), Kategorie 4
Skin Corr. 1A	3.2/1A	Verätzung der Haut, Kategorie 1A
Skin Corr. 1B	3.2/1B	Verätzung der Haut, Kategorie 1B
Skin Irrit. 2	3.2/2	Reizung der Haut, Kategorie 2
Eye Irrit. 2	3.3/2	Reizung der Augen, Kategorie 2

# Sicherheitsdatenblatt

## DP1



STOT SE 3	3.8/3	Spezifische Zielorgan-Toxizität (einmalige Exposition), Kategorie 3
STOT RE 2	3.9/2	Spezifische Zielorgan-Toxizität (wiederholte Exposition), Kategorie 2

Modifikation der Paragraphen seit der letzten Revision:

ABSCHNITT 3: Zusammensetzung/Angaben zu Bestandteilen  
ABSCHNITT 7: Handhabung und Lagerung  
ABSCHNITT 8: Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen  
ABSCHNITT 12: Umweltbezogene Angaben  
ABSCHNITT 14: Angaben zum Transport  
ABSCHNITT 16: Sonstige Angaben

Einstufung und Verfahren, das zum Ableiten der Einstufung von Gemischen gemäß Verordnung (EG) 1272/2008 [CLP] verwendet wurde:

Einstufung gemäß Verordnung (EG) Nr. 1272/2008	Einstufungsverfahren
Flam. Liq. 2, H225	auf der Basis von Prüfdaten
Eye Irrit. 2, H319	Berechnungsmethode

Diese Unterlagen wurden von einem Fachmann mit entsprechender Ausbildung abgefasst.  
Hauptsächliche Literatur:

ECDIN - Daten- und Informationsnetz über umweltrelevante Chemikalien - Vereinigtes  
Forschungszentrum, Kommission der Europäischen Gemeinschaft  
SAX's GEFÄHRLICHE EIGENSCHAFTEN VON INDUSTRIELLEN SUBSTANZEN - Achte  
Auflage - Van Nostrand Reinold

Die vorstehenden Angaben stützen sich auf den heutigen Stand unserer Kenntnisse. Sie gelten nur für das angegebene Produkt und stellen keine Zusicherung von Eigenschaften dar.  
Es obliegt dem Anwender die Zuständigkeit und die Vollständigkeit dieser Angaben für seine spezifische Anwendung zu kontrollieren.  
Dieses Datenblatt ersetzt alle früheren Ausgaben.

ADR: Europäisches Übereinkommen über die internationale Beförderung gefährlicher Güter auf der Straße  
ATE: Schätzung Akuter Toxizität  
ATEGemisch: Schätzwert der akuten Toxizität (Gemische)  
CAS: Chemical Abstracts Service (Abteilung der American Chemical Society)  
CLP: Einstufung, Verpackung und Kennzeichnung  
DNEL: Abgeleitetes Null-Effekt-Niveau (DNEL)  
EINECS: Europäisches Verzeichnis der auf dem Markt vorhandenen chemischen Stoffe  
GefStoffVO: Gefahrstoffverordnung  
GHS: Global harmonisiertes System zur Einstufung und Kennzeichnung von Chemikalien  
IATA: Internationale Flug-Transport-Vereinigung (IATA)  
IATA-DGR: Vorschriften über die Beförderung gefährlicher Güter der Internationalen Flug-Transport-Vereinigung (IATA)  
ICAO: Internationale Zivilluftfahrtorganisation (ICAO)  
ICAO-TI: Technische Anleitungen der Internationalen Zivilluftfahrtorganisation (ICAO)

## Sicherheitsdatenblatt

### DP1



IMDG:	Gefahrgutkennzeichnung für gefährliche Güter im Seeschiffsverkehr (IMDG-Code)
INCI:	Internationale Nomenklatur für kosmetische Inhaltsstoffe (INCI)
KSt:	Explosions-Koeffizient
LC50:	Letale Konzentration für 50 Prozent der Testpopulation
LD50:	Letale Dosis für 50 Prozent der Testpopulation
NA:	Nicht anwendbar
PNEC:	Abgeschätzte Nicht-Effekt-Konzentration (PNEC-Wert)
RID:	Regelung zur internationalen Beförderung gefährlicher Güter im Schienenverkehr
STEL:	Grenzwert für Kurzzeitexposition
STOT:	Zielorgan-Toxizität
TLV:	Arbeitsplatzgrenzwert
TWA:	Zeit gemittelte
WGK:	Wassergefährdungsklasse

# Exposure Scenario, 23/07/2019

Substance identity	
Chemical name	Etanolo
CAS No.	64-17-5
EINECS No.	200-578-6

## Table of contents

1. **ES 1** Consumer use; Anti-freeze and de-icing products (PC4)
2. **ES 2** Consumer use; Various products (PC39, PC28)
3. **ES 3** Use at industrial site
4. **ES 4** Use at industrial site
5. **ES 5** Widespread use by professional workers
6. **ES 6** Widespread use by professional workers
7. **ES 7** Consumer use; Fuels (PC13)
8. **ES 8** Consumer use; Various products (PC1, PC3, PC8, PC18, PC23)

## 1. ES 1 Consumer use; Anti-freeze and de-icing products (PC4)

### 1.1 TITLE SECTION

Exposure Scenario name	Car care and maintenance products - De-icing and anti-icing applications
Date - Version	22/07/2019 - 1.0
Life Cycle Stage	Consumer use
Main user group	Consumer uses
Sector(s) of use	Consumer uses (SU21)
Product Categories	Anti-freeze and de-icing products (PC4)

### Environment Contributing Scenario

CS1 Covered by	ERC8d
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### Consumer Contributing Scenario

CS2 Car Care - De-icing and anti-icing applications	PC4 - PC4_1
CS3 Car Care - De-icing and anti-icing applications	PC4 - PC4_2
CS4 Car Care - De-icing and anti-icing applications	PC4 - PC4_3

## 1.2 Conditions of use affecting exposure

### 1.2. CS1: Environment Contributing Scenario: Covered by (ERC8d)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d)
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#### *Product (article) characteristics*

**Physical form of product:**

Liquid

**Vapour pressure:**

5726 Pa

#### *Conditions and measures related to treatment of waste (including article waste)*

**Waste treatment**

No specific measures identified.

#### *Other conditions affecting environmental exposure*

**Local marine water dilution factor:** 100

**Local freshwater dilution factor:** 10

### 1.2. CS2: Consumer Contributing Scenario: Car Care - De-icing and anti-icing applications (PC4)

Product Categories	Anti-freeze and de-icing products (PC4)
Product (Sub-)Categories	Washing car window (PC4_1)

#### *Product (article) characteristics*

**Concentration of substance in product:**

Covers percentage substance in the product up to 1 %.

#### *Amount used, frequency and duration of use/exposure*

**Amounts used:**

Amount per use 0.5 g

**Duration:**

Covers use up to 0.017 h/event

**Frequency:**

Covers use up to 1 uses per day

### *Other conditions affecting consumers exposure*

**Room size:** Covers use in a one car garage (>34 m<sup>3</sup>) under typical ventilation.

**Temperature:** Covers use at ambient temperatures.

## 1.2. CS3: Consumer Contributing Scenario: Car Care - De-icing and anti-icing applications (PC4)

<b>Product Categories</b>	Anti-freeze and de-icing products (PC4)
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<b>Product (Sub-)Categories</b>	Pouring into radiator (PC4_2)
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### *Product (article) characteristics*

#### **Concentration of substance in product:**

Covers concentrations up to 10 %

### *Amount used, frequency and duration of use/exposure*

#### **Amounts used:**

Amount per use 2000 g

#### **Duration:**

Covers use up to 0.17 h/event

#### **Frequency:**

Covers use up to 1 uses per day

### *Other conditions affecting consumers exposure*

**Room size:** Covers use in a one car garage (>34 m<sup>3</sup>) under typical ventilation.

**Temperature:** Covers use at ambient temperatures.

#### **Additional conditions human health**

Covers skin contact area up to 482 cm<sup>2</sup>

## 1.2. CS4: Consumer Contributing Scenario: Car Care - De-icing and anti-icing applications (PC4)

<b>Product Categories</b>	Anti-freeze and de-icing products (PC4)
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<b>Product (Sub-)Categories</b>	Lock de-icer (PC4_3)
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### *Product (article) characteristics*

#### **Concentration of substance in product:**

Covers concentrations up to 50 %

### *Amount used, frequency and duration of use/exposure*

#### **Amounts used:**

Amount per use 4 g

#### **Duration:**

Covers use up to 0.25 h/event

#### **Frequency:**

Covers use up to 1 uses per day

### *Other conditions affecting consumers exposure*

**Room size:** Covers use in a one car garage (>34 m<sup>3</sup>) under typical ventilation.

**Temperature:** Covers use at ambient temperatures.

#### **Additional conditions human health**

Covers skin contact area up to 214 cm<sup>2</sup>

## 1.3 Exposure estimation and reference to its source

### 1.3. CS1: Environment Contributing Scenario: Covered by (ERC8d)



protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	0.00443 mg/L	N/A	0.00461
freshwater sediment	0.0172 mg/kg bw/day	N/A	0.00467
marine water	0.000508 mg/L	N/A	0.000643
marine sediment	0.00194 mg/kg bw/day	N/A	0.00064
soil	0.00123 mg/kg bw/day	N/A	0.00724

### 1.2. CS2: Consumer Contributing Scenario: Car Care - De-icing and anti-icing applications (PC4)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.000102 mg/m <sup>3</sup>	N/A	8.94E-07
inhalative, local, short-term	0.000102 mg/m <sup>3</sup>	N/A	8.94E-07
dermal, systemic, long-term	0 mg/kg bw/day	N/A	N/A
combined routes, systemic, long-term	N/A	N/A	8.94E-07

### 1.2. CS3: Consumer Contributing Scenario: Car Care - De-icing and anti-icing applications (PC4)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	1.84 mg/m <sup>3</sup>	N/A	0.0161
inhalative, local, short-term	1.84 mg/m <sup>3</sup>	N/A	0.0161
dermal, systemic, long-term	5.62 mg/kg bw/day	N/A	0.0272
combined routes, systemic, long-term	N/A	N/A	0.0434

### 1.2. CS4: Consumer Contributing Scenario: Car Care - De-icing and anti-icing applications (PC4)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.51 mg/m <sup>3</sup>	N/A	0.00447
inhalative, local, short-term	0.51 mg/m <sup>3</sup>	N/A	0.0447
dermal, systemic, long-term	14 mg/kg bw/day	N/A	0.0679
combined routes, systemic, long-term	N/A	N/A	0.0724

## 1.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**Guidance to check compliance with the exposure scenario:**

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

## 2. ES 2 Consumer use; Various products (PC39, PC28)

### 2.1 TITLE SECTION

Exposure Scenario name	Cosumer other uses
Date - Version	22/07/2019 - 1.0
Life Cycle Stage	Consumer use
Main user group	Consumer uses
Sector(s) of use	Consumer uses (SU21)
Product Categories	Cosmetics, personal care products (PC39) - Perfumes, fragrances (PC28)

#### Environment Contributing Scenario

CS1 Covered by	ERC8a
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#### Consumer Contributing Scenario

CS2 Consumer	PC39 - PC28
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## 2.2 Conditions of use affecting exposure

### 2.2. CS1: Environment Contributing Scenario: Covered by (ERC8a)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a)
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#### *Product (article) characteristics*

##### Physical form of product:

Liquid

##### Vapour pressure:

5726 Pa

#### *Conditions and measures related to treatment of waste (including article waste)*

##### Waste treatment

No specific measures identified.

### 2.2. CS2: Consumer Contributing Scenario: Consumer (PC39, PC28)

Product Categories	Cosmetics, personal care products - Perfumes, fragrances (PC39, PC28)
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## 2.3 Exposure estimation and reference to its source

### 2.3. CS1: Environment Contributing Scenario: Covered by (ERC8a)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	0.00236 mg/L	N/A	0.00246
freshwater sediment	0.00904 mg/kg bw/day	N/A	0.00246
marine water	0.000301 mg/L	N/A	0.000381
marine sediment	0.00115 mg/kg bw/day	N/A	0.00038
soil	0.00115 mg/kg bw/day	N/A	0.00676

## 2.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

### **Guidance to check compliance with the exposure scenario:**

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

### 3. ES 3 Use at industrial site

#### 3.1 TITLE SECTION

Exposure Scenario name	Solvent
Date - Version	22/07/2019 - 1.0
Life Cycle Stage	Use at industrial site
Main user group	Industrial uses
Sector(s) of use	Industrial uses (SU3)

#### Environment Contributing Scenario

CS1 Covered by	ERC4
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#### Worker Contributing Scenario

CS2 Industrial	PROC1
CS3 Industrial	PROC2
CS4 Industrial	PROC3
CS5 Industrial	PROC4
CS6 Industrial	PROC5
CS7 Industrial	PROC7
CS8 Industrial	PROC8a
CS9 Industrial	PROC8b
CS10 Industrial	PROC10
CS11 Industrial	PROC13
CS12 Industrial	PROC15

### 3.2 Conditions of use affecting exposure

#### 3.2. CS1: Environment Contributing Scenario: Covered by (ERC4)

Environmental release categories	Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)
----------------------------------	--

#### *Product (article) characteristics*

**Vapour pressure:**  
< 10 kPa

#### *Amount used, frequency and duration of use (or from service life)*

**Amounts used:**

Annual site tonnage 3000 t(tonnes)/year

**Maximum allowable site tonnage (MSafe):** 124000 kg/day

**Release type:** Continuous release

**Emission days:** 300 days per year

#### *Technical and organisational conditions and measures*

**Control measures to prevent releases**

Treat air emission to provide the required removal efficiency of (%):	Air - minimum efficiency of: 90 %
Prevent discharge of undissolved substance to or recover from onsite wastewater.	Water - minimum efficiency of: 87 %

### *Conditions and measures related to sewage treatment plant*

#### **STP type:**

Municipal Sewage Treatment Plant

**STP effluent (m<sup>3</sup>/day):** 2000

### *Conditions and measures related to treatment of waste (including article waste)*

#### **Waste treatment**

Incineration, disposal or recycling at specific offsite provider Contain and dispose of waste according to local regulations.	Waste - minimum efficiency of: 99.98 %
--	--

### *Other conditions affecting environmental exposure*

**Local marine water dilution factor:** 100

**Local freshwater dilution factor:** 10

**Receiving surface water flow:** 2000 m<sup>3</sup>/h

*Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.*

#### **Additional Good Practice Advice:**

Contain leaks or spills within cabinets with removable trays.

### **3.2. CS2: Worker Contributing Scenario: Industrial (PROC1)**

<b>Process Categories</b>	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)
---------------------------	--

### *Product (article) characteristics*

#### **Physical form of product:**

Liquid

#### **Vapour pressure:**

< 10 kPa

#### **Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Amount used, frequency and duration of use/exposure*

#### **Duration:**

Covers daily exposures up to 8 hours

### *Technical and organisational conditions and measures*

#### **Technical and organisational measures**

Use in contained systems

Store substance within a closed system.

### *Conditions and measures related to personal protection, hygiene and health evaluation*

#### **Personal protection**

Use suitable eye protection.

### *Other conditions affecting worker exposure*

**Temperature:** Covers use at ambient temperatures.

### **3.2. CS3: Worker Contributing Scenario: Industrial (PROC2)**

<b>Process Categories</b>	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)
---------------------------	--

<b>Product (article) characteristics</b>	
<b>Physical form of product:</b> Liquid	
<b>Vapour pressure:</b> < 10 kPa	
<b>Concentration of substance in product:</b> Covers percentage substance in the product up to 100 %.	
<b>Amount used, frequency and duration of use/exposure</b>	
<b>Duration:</b> Covers daily exposures up to 8 hours	
<b>Technical and organisational conditions and measures</b>	
<b>Technical and organisational measures</b> Use in contained systems Store substance within a closed system.	
<b>Conditions and measures related to personal protection, hygiene and health evaluation</b>	
<b>Personal protection</b> Use suitable eye protection.	
<b>Other conditions affecting worker exposure</b>	
<b>Temperature:</b> Covers use at ambient temperatures.	
<b>3.2. CS4: Worker Contributing Scenario: Industrial (PROC3)</b>	
<b>Process Categories</b>	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)
<b>Product (article) characteristics</b>	
<b>Physical form of product:</b> Liquid	
<b>Vapour pressure:</b> < 10 kPa	
<b>Concentration of substance in product:</b> Covers percentage substance in the product up to 100 %.	
<b>Amount used, frequency and duration of use/exposure</b>	
<b>Duration:</b> Covers daily exposures up to 8 hours	
<b>Technical and organisational conditions and measures</b>	
<b>Technical and organisational measures</b> Use in contained systems Store substance within a closed system.	
<b>Conditions and measures related to personal protection, hygiene and health evaluation</b>	
<b>Personal protection</b> Use suitable eye protection.	
<b>Other conditions affecting worker exposure</b>	
<b>Temperature:</b> Covers use at ambient temperatures.	
<b>3.2. CS5: Worker Contributing Scenario: Industrial (PROC4)</b>	
<b>Process Categories</b>	Chemical production where opportunity for exposure arises (PROC4)
<b>Product (article) characteristics</b>	

<b>Physical form of product:</b> Liquid	
<b>Vapour pressure:</b> < 10 kPa	
<b>Concentration of substance in product:</b> Covers percentage substance in the product up to 100 %.	
<i>Amount used, frequency and duration of use/exposure</i>	
<b>Duration:</b> Covers daily exposures up to 8 hours	
<i>Technical and organisational conditions and measures</i>	
<b>Technical and organisational measures</b> Use in contained systems Store substance within a closed system.	
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>	
<b>Personal protection</b> Use suitable eye protection.	
<i>Other conditions affecting worker exposure</i>	
<b>Temperature:</b> Covers use at ambient temperatures.	
<b>3.2. CS6: Worker Contributing Scenario: Industrial (PROC5)</b>	
<b>Process Categories</b>	Mixing or blending in batch processes (PROC5)
<i>Product (article) characteristics</i>	
<b>Physical form of product:</b> Liquid	
<b>Vapour pressure:</b> < 10 kPa	
<b>Concentration of substance in product:</b> Covers percentage substance in the product up to 100 %.	
<i>Amount used, frequency and duration of use/exposure</i>	
<b>Duration:</b> Covers daily exposures up to 8 hours	
<i>Technical and organisational conditions and measures</i>	
<b>Technical and organisational measures</b> Use in contained systems Store substance within a closed system.	
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>	
<b>Personal protection</b> Use suitable eye protection.	
<i>Other conditions affecting worker exposure</i>	
<b>Temperature:</b> Covers use at ambient temperatures.	
<b>3.2. CS7: Worker Contributing Scenario: Industrial (PROC7)</b>	
<b>Process Categories</b>	Industrial spraying (PROC7)
<i>Product (article) characteristics</i>	
<b>Physical form of product:</b> Liquid	



**Vapour pressure:**

< 10 kPa

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

***Amount used, frequency and duration of use/exposure*****Duration:**

Covers daily exposures up to 8 hours

***Technical and organisational conditions and measures*****Technical and organisational measures**

Use in contained systems

Store substance within a closed system.

Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

***Conditions and measures related to personal protection, hygiene and health evaluation*****Personal protection**

Use suitable eye protection.

***Other conditions affecting worker exposure***

**Temperature:** Covers use at ambient temperatures.

**3.2. CS8: Worker Contributing Scenario: Industrial (PROC8a)****Process Categories**

Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)

***Product (article) characteristics*****Physical form of product:**

Liquid

**Vapour pressure:**

< 10 kPa

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

***Amount used, frequency and duration of use/exposure*****Duration:**

Covers daily exposures up to 8 hours

***Technical and organisational conditions and measures*****Technical and organisational measures**

Use in contained systems

Store substance within a closed system.

***Conditions and measures related to personal protection, hygiene and health evaluation*****Personal protection**

Use suitable eye protection.

***Other conditions affecting worker exposure***

**Temperature:** Covers use at ambient temperatures.

**3.2. CS9: Worker Contributing Scenario: Industrial (PROC8b)****Process Categories**

Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)

***Product (article) characteristics*****Physical form of product:**

Liquid

**Vapour pressure:**

< 10 kPa

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

*Amount used, frequency and duration of use/exposure***Duration:**

Covers daily exposures up to 8 hours

*Technical and organisational conditions and measures***Technical and organisational measures**

Use in contained systems

Store substance within a closed system.

*Conditions and measures related to personal protection, hygiene and health evaluation***Personal protection**

Use suitable eye protection.

*Other conditions affecting worker exposure*

**Temperature:** Covers use at ambient temperatures.

**3.2. CS10: Worker Contributing Scenario: Industrial (PROC10)****Process Categories**

Roller application or brushing (PROC10)

*Product (article) characteristics***Physical form of product:**

Liquid

**Vapour pressure:**

< 10 kPa

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

*Amount used, frequency and duration of use/exposure***Duration:**

Covers daily exposures up to 8 hours

*Technical and organisational conditions and measures***Technical and organisational measures**

Use in contained systems

Store substance within a closed system.

*Conditions and measures related to personal protection, hygiene and health evaluation***Personal protection**

Use suitable eye protection.

*Other conditions affecting worker exposure*

**Temperature:** Covers use at ambient temperatures.

**3.2. CS11: Worker Contributing Scenario: Industrial (PROC13)****Process Categories**

Treatment of articles by dipping and pouring (PROC13)

*Product (article) characteristics***Physical form of product:**

Liquid

**Vapour pressure:**

< 10 kPa

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

***Amount used, frequency and duration of use/exposure*****Duration:**

Covers daily exposures up to 8 hours

***Technical and organisational conditions and measures*****Technical and organisational measures**

Use in contained systems

Store substance within a closed system.

***Conditions and measures related to personal protection, hygiene and health evaluation*****Personal protection**

Use suitable eye protection.

***Other conditions affecting worker exposure*****Temperature:** Covers use at ambient temperatures.**3.2. CS12: Worker Contributing Scenario: Industrial (PROC15)****Process Categories**

Use as laboratory reagent (PROC15)

***Product (article) characteristics*****Physical form of product:**

Liquid

**Vapour pressure:**

&lt; 10 kPa

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

***Amount used, frequency and duration of use/exposure*****Duration:**

Covers daily exposures up to 8 hours

***Technical and organisational conditions and measures*****Technical and organisational measures**

Use in contained systems

Store substance within a closed system.

***Conditions and measures related to personal protection, hygiene and health evaluation*****Personal protection**

Use suitable eye protection.

***Other conditions affecting worker exposure*****Temperature:** Covers use at ambient temperatures.**3.3 Exposure estimation and reference to its source****3.3. CS1: Environment Contributing Scenario: Covered by (ERC4)**

Release route	Release rate	Release estimation method
Air	0.98 %	N/A
Water	0.01 %	N/A
soil	0 %	N/A

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
wastewater treatment plant microbes	6.32 mg/L	N/A	0.0109
freshwater	0.577 mg/L	N/A	0.601
freshwater sediment	2.21 mg/kg bw/day	N/A	0.601
marine water	0.0635 mg/L	N/A	0.0804
marine sediment	0.0635 mg/kg bw/day	N/A	0.0805
soil	0.0525 mg/kg bw/day	N/A	0.309

### 3.3. CS2: Worker Contributing Scenario: Industrial (PROC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	9.6 mg/m <sup>3</sup>	N/A	< 0.01
dermal, systemic, long-term	0.03 mg/kg bw/day	N/A	< 0.01
combined routes, systemic, long-term	N/A	N/A	< 0.01

### 3.3. CS3: Worker Contributing Scenario: Industrial (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	9.6 mg/m <sup>3</sup>	N/A	0.01
dermal, systemic, long-term	1.4 mg/kg bw/day	N/A	0.004
combined routes, systemic, long-term	N/A	N/A	0.0141

### 3.3. CS4: Worker Contributing Scenario: Industrial (PROC3)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	19 mg/m <sup>3</sup>	N/A	0.02
dermal, systemic, long-term	0.69 mg/kg bw/day	N/A	0.002
combined routes, systemic, long-term	N/A	N/A	0.0222

### 3.3. CS5: Worker Contributing Scenario: Industrial (PROC4)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
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inhalative, systemic, long-term	38 mg/m <sup>3</sup>	N/A	0.04
dermal, systemic, long-term	6.9 mg/kg bw/day	N/A	0.02
combined routes, systemic, long-term	N/A	N/A	0.0603

### 3.3. CS6: Worker Contributing Scenario: Industrial (PROC5)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	96 mg/m <sup>3</sup>	N/A	0.101
dermal, systemic, long-term	14 mg/kg bw/day	N/A	0.04
combined routes, systemic, long-term	N/A	N/A	0.141

### 3.3. CS7: Worker Contributing Scenario: Industrial (PROC7)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	140 mg/m <sup>3</sup>	N/A	0.151
dermal, systemic, long-term	43 mg/kg bw/day	N/A	0.125
combined routes, systemic, long-term	N/A	N/A	0.276

### 3.3. CS8: Worker Contributing Scenario: Industrial (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	96 mg/m <sup>3</sup>	N/A	0.101
dermal, systemic, long-term	96 mg/kg bw/day	N/A	0.04
combined routes, systemic, long-term	N/A	N/A	0.141

### 3.3. CS9: Worker Contributing Scenario: Industrial (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	48 mg/m <sup>3</sup>	N/A	0.05
dermal, systemic, long-term	14 mg/kg bw/day	N/A	0.04
combined routes, systemic, long-term	N/A	N/A	0.0904

### 3.3. CS10: Worker Contributing Scenario: Industrial (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
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inhalative, systemic, long-term	96 mg/m <sup>3</sup>	N/A	0.101
dermal, systemic, long-term	27 mg/kg bw/day	N/A	0.08
combined routes, systemic, long-term	N/A	N/A	0.181

### 3.3. CS11: Worker Contributing Scenario: Industrial (PROC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	96 mg/m <sup>3</sup>	N/A	0.101
dermal, systemic, long-term	14 mg/kg bw/day	N/A	0.04
combined routes, systemic, long-term	N/A	N/A	0.141

### 3.3. CS12: Worker Contributing Scenario: Industrial (PROC15)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	19 mg/m <sup>3</sup>	N/A	0.02
dermal, systemic, long-term	0.34 mg/kg bw/day	N/A	< 0.01
combined routes, systemic, long-term	N/A	N/A	0.0212

## 3.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

### Guidance to check compliance with the exposure scenario:

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

## 4. ES 4 Use at industrial site

### 4.1 TITLE SECTION

Exposure Scenario name	Fuel
Date - Version	22/07/2019 - 1.0
Life Cycle Stage	Use at industrial site
Main user group	Industrial uses
Sector(s) of use	Industrial uses (SU3)

### Environment Contributing Scenario

CS1 Covered by	ERC7
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### Worker Contributing Scenario

CS2 Industrial	PROC1
CS3 Industrial	PROC2
CS4 Industrial	PROC3
CS5 Industrial	PROC8a
CS6 Industrial	PROC8b
CS7 Industrial	PROC15
CS8 Industrial	PROC16

## 4.2 Conditions of use affecting exposure

### 4.2. CS1: Environment Contributing Scenario: Covered by (ERC7)

Environmental release categories	Use of functional fluid at industrial site (ERC7)
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#### *Product (article) characteristics*

#### Physical form of product:

Liquid

#### Vapour pressure:

< 10 kPa

#### *Amount used, frequency and duration of use (or from service life)*

#### Amounts used:

Annual site tonnage 20000 t(tonnes)/year

**Maximum allowable site tonnage (MSafe):** 14500000 kg/day

**Release type:** Continuous release

**Emission days:** 300 days per year

#### *Technical and organisational conditions and measures*

#### Control measures to prevent releases

Provide onsite wastewater removal efficiency of <sup>3</sup> (%):

Water - minimum efficiency of: 87 %

### *Conditions and measures related to sewage treatment plant*

**STP type:**

Municipal Sewage Treatment Plant  
Water - minimum efficiency of: = 87 %

**STP effluent (m<sup>3</sup>/day):** 2000

### *Conditions and measures related to treatment of waste (including article waste)*

**Waste treatment**

Product residual disposal complies with applicable regulations.

### *Other conditions affecting environmental exposure*

**Local marine water dilution factor:** 100

**Local freshwater dilution factor:** 10

**Receiving surface water flow:** 2000 m<sup>3</sup>/day

### *Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.*

**Additional Good Practice Advice:**

Adequate closed storage facilities (e.g., bulk storage tanks, intermediate bulk containers, drums) are required.

### **4.2. CS2: Worker Contributing Scenario: Industrial (PROC1)**

**Process Categories**

Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

### *Product (article) characteristics*

**Physical form of product:**

Liquid

**Vapour pressure:**

< 10 kPa

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Amount used, frequency and duration of use/exposure*

**Duration:**

Covers daily exposures up to 8 hours

### *Technical and organisational conditions and measures*

**Technical and organisational measures**

Handle substance within a closed system.  
Store substance within a closed system.

### *Conditions and measures related to personal protection, hygiene and health evaluation*

**Personal protection**

Use suitable eye protection.

### **4.2. CS3: Worker Contributing Scenario: Industrial (PROC2)**

**Process Categories**

Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

### *Product (article) characteristics*

**Physical form of product:**

Liquid

**Vapour pressure:**

< 10 kPa

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Amount used, frequency and duration of use/exposure*



**Duration:**

Covers daily exposures up to 8 hours

***Technical and organisational conditions and measures*****Technical and organisational measures**

Handle substance within a closed system.  
Store substance within a closed system.

***Conditions and measures related to personal protection, hygiene and health evaluation*****Personal protection**

Use suitable eye protection.

**4.2. CS4: Worker Contributing Scenario: Industrial (PROC3)****Process Categories**

Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

***Product (article) characteristics*****Physical form of product:**

Liquid

**Vapour pressure:**

< 10 kPa

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

***Amount used, frequency and duration of use/exposure*****Duration:**

Covers daily exposures up to 8 hours

***Technical and organisational conditions and measures*****Technical and organisational measures**

Handle substance within a closed system.  
Store substance within a closed system.

***Conditions and measures related to personal protection, hygiene and health evaluation*****Personal protection**

Use suitable eye protection.

**4.2. CS5: Worker Contributing Scenario: Industrial (PROC8a)****Process Categories**

Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)

***Product (article) characteristics*****Physical form of product:**

Liquid

**Vapour pressure:**

< 10 kPa

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

***Amount used, frequency and duration of use/exposure*****Duration:**

Covers daily exposures up to 8 hours

***Technical and organisational conditions and measures*****Technical and organisational measures**

Handle substance within a closed system.  
Store substance within a closed system.

***Conditions and measures related to personal protection, hygiene and health evaluation***

**Personal protection**

Use suitable eye protection.

**4.2. CS6: Worker Contributing Scenario: Industrial (PROC8b)****Process Categories**

Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)

*Product (article) characteristics***Physical form of product:**

Liquid

**Vapour pressure:**

< 10 kPa

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

*Amount used, frequency and duration of use/exposure***Duration:**

Covers daily exposures up to 8 hours

*Technical and organisational conditions and measures***Technical and organisational measures**

Handle substance within a closed system.

Store substance within a closed system.

*Conditions and measures related to personal protection, hygiene and health evaluation***Personal protection**

Use suitable eye protection.

**4.2. CS7: Worker Contributing Scenario: Industrial (PROC15)****Process Categories**

Use as laboratory reagent (PROC15)

*Product (article) characteristics***Physical form of product:**

Liquid

**Vapour pressure:**

< 10 kPa

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

*Amount used, frequency and duration of use/exposure***Duration:**

Covers daily exposures up to 8 hours

*Technical and organisational conditions and measures***Technical and organisational measures**

Handle substance within a closed system.

Store substance within a closed system.

*Conditions and measures related to personal protection, hygiene and health evaluation***Personal protection**

Use suitable eye protection.

**4.2. CS8: Worker Contributing Scenario: Industrial (PROC16)****Process Categories**

Use of fuels (PROC16)

*Product (article) characteristics***Physical form of product:**

Liquid

**Vapour pressure:**

&lt; 10 kPa

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

**Amount used, frequency and duration of use/exposure****Duration:**

Covers daily exposures up to 8 hours

**Technical and organisational conditions and measures****Technical and organisational measures**

Handle substance within a closed system.  
Store substance within a closed system.

**Conditions and measures related to personal protection, hygiene and health evaluation****Personal protection**

Use suitable eye protection.

**4.3 Exposure estimation and reference to its source****4.3. CS1: Environment Contributing Scenario: Covered by (ERC7)**

Release route	Release rate	Release estimation method
Air	0.0025 %	N/A
Water	1E-05 %	N/A
soil	0 %	N/A

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
wastewater treatment plant microbes	0.0421 mg/L	N/A	7.26E-05
freshwater	0.00657 mg/L	N/A	0.00684
freshwater sediment	0.00685 mg/kg bw/day	N/A	0.00685
marine water	0.00363 mg/L	N/A	0.00459
marine sediment	0.0139 mg/kg bw/day	N/A	0.00459
soil	0.00694 mg/kg bw/day	N/A	0.0408

**4.3. CS2: Worker Contributing Scenario: Industrial (PROC1)**

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.019 mg/m <sup>3</sup>	N/A	< 0.001
dermal, systemic, long-term	0.03 mg/kg bw/day	N/A	< 0.001
combined routes, systemic, long-term	N/A	N/A	< 0.001

#### 4.3. CS3: Worker Contributing Scenario: Industrial (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	9.6 mg/m <sup>3</sup>	N/A	0.01
dermal, systemic, long-term	1.4 mg/kg bw/day	N/A	0.004
combined routes, systemic, long-term	N/A	N/A	0.0222

#### 4.3. CS4: Worker Contributing Scenario: Industrial (PROC3)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	19 mg/m <sup>3</sup>	N/A	0.02
dermal, systemic, long-term	0.69 mg/kg bw/day	N/A	0.002
combined routes, systemic, long-term	N/A	N/A	0.222

#### 4.3. CS5: Worker Contributing Scenario: Industrial (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	96 mg/m <sup>3</sup>	N/A	0.101
dermal, systemic, long-term	14 mg/m <sup>3</sup>	N/A	0.04
combined routes, systemic, long-term	N/A	N/A	0.141

#### 4.3. CS6: Worker Contributing Scenario: Industrial (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	48 mg/m <sup>3</sup>	N/A	0.05
dermal, systemic, long-term	14 mg/kg bw/day	N/A	0.04
combined routes, systemic, long-term	N/A	N/A	0.0904

#### 4.3. CS7: Worker Contributing Scenario: Industrial (PROC15)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	19 mg/m <sup>3</sup>	N/A	0.02
dermal, systemic, long-term	0.34 mg/kg bw/day	N/A	< 0.001

combined routes, systemic, long-term	N/A	N/A	0.0112
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### 4.3. CS8: Worker Contributing Scenario: Industrial (PROC16)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	9.6 mg/m <sup>3</sup>	N/A	0.01
dermal, systemic, long-term	0.34 mg/kg bw/day	N/A	< 0.001
combined routes, systemic, long-term	N/A	N/A	0.0111

### 4.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

#### Guidance to check compliance with the exposure scenario:

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

## 5. ES 5 Widespread use by professional workers

### 5.1 TITLE SECTION

Exposure Scenario name	Solvent
Date - Version	23/07/2019 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)

### Environment Contributing Scenario

CS1 Covered by	ERC8a - ERC8d
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### Worker Contributing Scenario

CS2 General use from professional operators	PROC1
CS3 General use from professional operators	PROC2
CS4 General use from professional operators	PROC3
CS5 General use from professional operators	PROC4
CS6 General use from professional operators	PROC5 - PROC8a
CS7 General use from professional operators	PROC8b
CS8 General use from professional operators	PROC10
CS9 General use from professional operators	PROC11
CS10 General use from professional operators	PROC11
CS11 General use from professional operators	PROC13
CS12 General use from professional operators	PROC19

## 5.2 Conditions of use affecting exposure

### 5.2. CS1: Environment Contributing Scenario: Covered by (ERC8a, ERC8d)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8a, ERC8d)
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### *Product (article) characteristics*

#### Physical form of product:

Liquid, vapour pressure 0,5 - 10 kPa at STP

### *Amount used, frequency and duration of use (or from service life)*

#### Amounts used:

Annual site tonnage 0.1 t(tonnes)/year

**Maximum allowable site tonnage (MSafe):** 715 kg/day

**Release type:** Continuous release

**Emission days:** 365 days per year

### *Technical and organisational conditions and measures*

## Control measures to prevent releases

Treat air emission to provide the required removal efficiency of (%):	Air - minimum efficiency of: 90 %
Prevent discharge of undissolved substance to or recover from onsite wastewater.	

## Conditions and measures related to treatment of waste (including article waste)

### Waste treatment

Hazardous waste incineration	Waste - minimum efficiency of: 99.98 %
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## 5.2. CS2: Worker Contributing Scenario: General use from professional operators (PROC1)

Process Categories	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)
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### Product (article) characteristics

#### Physical form of product:

Liquid, vapour pressure 0,5 - 10 kPa at STP

#### Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

### Amount used, frequency and duration of use/exposure

#### Duration:

Covers daily exposures up to 8 hours

### Conditions and measures related to personal protection, hygiene and health evaluation

#### Personal protection

Use suitable eye protection.

## 5.2. CS3: Worker Contributing Scenario: General use from professional operators (PROC2)

Process Categories	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)
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### Product (article) characteristics

#### Physical form of product:

Liquid, vapour pressure 0,5 - 10 kPa at STP

#### Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

### Amount used, frequency and duration of use/exposure

#### Duration:

Covers daily exposures up to 8 hours

### Conditions and measures related to personal protection, hygiene and health evaluation

#### Personal protection

Use suitable eye protection.

## 5.2. CS4: Worker Contributing Scenario: General use from professional operators (PROC3)

Process Categories	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)
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### Product (article) characteristics

#### Physical form of product:

Liquid, vapour pressure 0,5 - 10 kPa at STP

#### Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

### *Amount used, frequency and duration of use/exposure*

#### **Duration:**

Covers daily exposures up to 8 hours

### *Conditions and measures related to personal protection, hygiene and health evaluation*

#### **Personal protection**

Use suitable eye protection.

## **5.2. CS5: Worker Contributing Scenario: General use from professional operators (PROC4)**

#### **Process Categories**

Chemical production where opportunity for exposure arises (PROC4)

### *Product (article) characteristics*

#### **Physical form of product:**

Liquid, vapour pressure 0,5 - 10 kPa at STP

#### **Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Amount used, frequency and duration of use/exposure*

#### **Duration:**

Covers daily exposures up to 8 hours

### *Conditions and measures related to personal protection, hygiene and health evaluation*

#### **Personal protection**

Use suitable eye protection.

## **5.2. CS6: Worker Contributing Scenario: General use from professional operators (PROC5, PROC8a)**

#### **Process Categories**

Mixing or blending in batch processes - Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC5, PROC8a)

### *Product (article) characteristics*

#### **Physical form of product:**

Liquid, vapour pressure 0,5 - 10 kPa at STP

#### **Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Amount used, frequency and duration of use/exposure*

#### **Duration:**

Covers daily exposures up to 8 hours

### *Conditions and measures related to personal protection, hygiene and health evaluation*

#### **Personal protection**

Use suitable eye protection.

## **5.2. CS7: Worker Contributing Scenario: General use from professional operators (PROC8b)**

#### **Process Categories**

Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)

### *Product (article) characteristics*

#### **Physical form of product:**

Liquid, vapour pressure 0,5 - 10 kPa at STP

#### **Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Amount used, frequency and duration of use/exposure*

#### **Duration:**

Covers daily exposures up to 8 hours

### *Conditions and measures related to personal protection, hygiene and health evaluation*



**Personal protection**

Use suitable eye protection.

**5.2. CS8: Worker Contributing Scenario: General use from professional operators (PROC10)****Process Categories**

Roller application or brushing (PROC10)

*Product (article) characteristics***Physical form of product:**

Liquid, vapour pressure 0,5 - 10 kPa at STP

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

*Amount used, frequency and duration of use/exposure***Duration:**

Covers daily exposures up to 8 hours

*Conditions and measures related to personal protection, hygiene and health evaluation***Personal protection**

Use suitable eye protection.

**5.2. CS9: Worker Contributing Scenario: General use from professional operators (PROC11)****Process Categories**

Non industrial spraying (PROC11)

*Product (article) characteristics***Physical form of product:**

Liquid, vapour pressure 0,5 - 10 kPa at STP

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

*Amount used, frequency and duration of use/exposure***Duration:**

Covers daily exposures up to 8 hours

*Technical and organisational conditions and measures***Technical and organisational measures**

Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

*Conditions and measures related to personal protection, hygiene and health evaluation***Personal protection**

Use suitable eye protection.

Wear suitable gloves tested to EN374.

*Other conditions affecting worker exposure*

Indoor use

**5.2. CS10: Worker Contributing Scenario: General use from professional operators (PROC11)****Process Categories**

Non industrial spraying (PROC11)

*Product (article) characteristics***Physical form of product:**

Liquid, vapour pressure 0,5 - 10 kPa at STP

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

*Amount used, frequency and duration of use/exposure***Duration:**

Covers daily exposures up to 8 hours

### *Technical and organisational conditions and measures*

#### **Technical and organisational measures**

Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

### *Conditions and measures related to personal protection, hygiene and health evaluation*

#### **Personal protection**

Use suitable eye protection.

Wear suitable gloves tested to EN374.

Wear a respirator conforming to EN140.

### *Other conditions affecting worker exposure*

Outdoor use

## **5.2. CS11: Worker Contributing Scenario: General use from professional operators (PROC13)**

#### **Process Categories**

Treatment of articles by dipping and pouring (PROC13)

### *Product (article) characteristics*

#### **Physical form of product:**

Liquid, vapour pressure 0,5 - 10 kPa at STP

#### **Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Amount used, frequency and duration of use/exposure*

#### **Duration:**

Covers daily exposures up to 8 hours

### *Conditions and measures related to personal protection, hygiene and health evaluation*

#### **Personal protection**

Use suitable eye protection.

Wear suitable gloves tested to EN374.

## **5.2. CS12: Worker Contributing Scenario: General use from professional operators (PROC19)**

#### **Process Categories**

Manual activities involving hand contact (PROC19)

### *Product (article) characteristics*

#### **Physical form of product:**

Liquid, vapour pressure 0,5 - 10 kPa at STP

#### **Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Amount used, frequency and duration of use/exposure*

#### **Duration:**

Covers daily exposures up to 8 hours

### *Conditions and measures related to personal protection, hygiene and health evaluation*

#### **Personal protection**

Use suitable eye protection.

Wear suitable gloves tested to EN374.

## **5.3 Exposure estimation and reference to its source**

### **5.3. CS1: Environment Contributing Scenario: Covered by (ERC8a, ERC8d)**

Release route	Release rate	Release estimation method
Air	0.98 %	N/A
Water	0.01 %	N/A

soil	0.01 %	N/A
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protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
wastewater treatment plant microbes	0.000173 mg/L	N/A	2.98E-07
freshwater	0.00238 mg/L	N/A	0.00248
freshwater sediment	0.00912 mg/kg bw/day	N/A	0.00248
marine sediment	0.000303 mg/L	N/A	0.000384
marine sediment	0.00116 mg/kg bw/day	N/A	0.000383
soil	0.00116 mg/kg bw/day	N/A	0.00682

### 5.3. CS2: Worker Contributing Scenario: General use from professional operators (PROC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.019 mg/m <sup>3</sup>	N/A	< 0.001
dermal, systemic, long-term	0.03 mg/kg bw/day	N/A	< 0.001
combined routes, systemic, long-term	N/A	N/A	< 0.001

### 5.3. CS3: Worker Contributing Scenario: General use from professional operators (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	38 mg/m <sup>3</sup>	N/A	0.04
dermal, systemic, long-term	1.4 mg/kg bw/day	N/A	0.004
combined routes, systemic, long-term	N/A	N/A	0.0443

### 5.3. CS4: Worker Contributing Scenario: General use from professional operators (PROC3)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	48 mg/m <sup>3</sup>	N/A	0.05
dermal, systemic, long-term	0.69 mg/kg bw/day	N/A	0.002
combined routes, systemic, long-term	N/A	N/A	0.0524

### 5.3. CS5: Worker Contributing Scenario: General use from professional operators (PROC4)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	96 mg/m <sup>3</sup>	N/A	0.101
dermal, systemic, long-term	6.9 mg/kg bw/day	N/A	0.02
combined routes, systemic, long-term	N/A	N/A	0.121

### 5.3. CS6: Worker Contributing Scenario: General use from professional operators (PROC5, PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	190 mg/m <sup>3</sup>	N/A	0.202
dermal, systemic, long-term	14 mg/kg bw/day	N/A	0.04
combined routes, systemic, long-term	N/A	N/A	0.242

### 5.3. CS7: Worker Contributing Scenario: General use from professional operators (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	96 mg/m <sup>3</sup>	N/A	0.202
dermal, systemic, long-term	14 mg/kg bw/day	N/A	0.04
combined routes, systemic, long-term	N/A	N/A	0.141

### 5.3. CS8: Worker Contributing Scenario: General use from professional operators (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	190 mg/m <sup>3</sup>	N/A	0.202
dermal, systemic, long-term	27 mg/kg bw/day	N/A	0.08
combined routes, systemic, long-term	N/A	N/A	0.282

### 5.3. CS9: Worker Contributing Scenario: General use from professional operators (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	290 mg/m <sup>3</sup>	N/A	0.303
dermal, systemic, long-term	21 mg/kg bw/day	N/A	0.062
combined routes, systemic, long-term	N/A	N/A	0.365

### 5.3. CS10: Worker Contributing Scenario: General use from professional operators (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	67 mg/m <sup>3</sup>	N/A	0.071
dermal, systemic, long-term	21 mg/kg bw/day	N/A	0.062
combined routes, systemic, long-term	N/A	N/A	0.133

### 5.3. CS11: Worker Contributing Scenario: General use from professional operators (PROC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	190 mg/m <sup>3</sup>	N/A	0.202
dermal, systemic, long-term	2.7 mg/kg bw/day	N/A	0.008
combined routes, systemic, long-term	N/A	N/A	0.21

### 5.3. CS12: Worker Contributing Scenario: General use from professional operators (PROC19)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	190 mg/m <sup>3</sup>	N/A	0.202
dermal, systemic, long-term	28 mg/kg bw/day	N/A	0.082
combined routes, systemic, long-term	N/A	N/A	0.284

## 5.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

### Guidance to check compliance with the exposure scenario:

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

## 6. ES 6 Widespread use by professional workers

### 6.1 TITLE SECTION

Exposure Scenario name	Fuel
Date - Version	23/07/2019 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)

#### Environment Contributing Scenario

CS1 Covered by	ERC9a - ERC9b
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#### Worker Contributing Scenario

CS2 General use from professional operators	PROC1
CS3 General use from professional operators	PROC2
CS4 General use from professional operators	PROC3
CS5 General use from professional operators	PROC8a
CS6 General use from professional operators	PROC8b
CS7 General use from professional operators	PROC16

## 6.2 Conditions of use affecting exposure

### 6.2. CS1: Environment Contributing Scenario: Covered by (ERC9a, ERC9b)

Environmental release categories	Widespread use of functional fluid (indoor) - Widespread use of functional fluid (outdoor) (ERC9a, ERC9b)
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#### *Product (article) characteristics*

##### Physical form of product:

Liquid, vapour pressure 0,5 - 10 kPa at STP

#### *Amount used, frequency and duration of use (or from service life)*

##### Amounts used:

Annual site tonnage 1 t(onnes)/year

**Maximum allowable site tonnage (MSafe):** 7190 kg/day

**Release type:** Continuous release

**Emission days:** 365 days per year

#### *Technical and organisational conditions and measures*

##### Control measures to prevent releases

Prevent discharge of undissolved substance to or recover from onsite wastewater.

#### *Conditions and measures related to treatment of waste (including article waste)*

##### Waste treatment

Product residual disposal complies with applicable regulations.

### 6.2. CS2: Worker Contributing Scenario: General use from professional operators (PROC1)

Process Categories	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)
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### *Product (article) characteristics*

**Physical form of product:**

Liquid, vapour pressure 0,5 - 10 kPa at STP

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Technical and organisational conditions and measures*

**Technical and organisational measures**

Handle substance within a closed system.  
Store substance within a closed system.

### *Conditions and measures related to personal protection, hygiene and health evaluation*

**Personal protection**

Use suitable eye protection.

## **6.2. CS3: Worker Contributing Scenario: General use from professional operators (PROC2)**

<b>Process Categories</b>	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)
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### *Product (article) characteristics*

**Physical form of product:**

Liquid, vapour pressure 0,5 - 10 kPa at STP

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Technical and organisational conditions and measures*

**Technical and organisational measures**

Handle substance within a closed system.  
Store substance within a closed system.

### *Conditions and measures related to personal protection, hygiene and health evaluation*

**Personal protection**

Use suitable eye protection.

## **6.2. CS4: Worker Contributing Scenario: General use from professional operators (PROC3)**

<b>Process Categories</b>	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)
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### *Product (article) characteristics*

**Physical form of product:**

Liquid, vapour pressure 0,5 - 10 kPa at STP

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Technical and organisational conditions and measures*

**Technical and organisational measures**

Handle substance within a closed system.  
Store substance within a closed system.

### *Conditions and measures related to personal protection, hygiene and health evaluation*

**Personal protection**

Use suitable eye protection.

## **6.2. CS5: Worker Contributing Scenario: General use from professional operators (PROC8a)**

<b>Process Categories</b>	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)
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### *Product (article) characteristics*

**Physical form of product:**

Liquid, vapour pressure 0,5 - 10 kPa at STP

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

*Technical and organisational conditions and measures***Technical and organisational measures**

Handle substance within a closed system.  
Store substance within a closed system.

*Conditions and measures related to personal protection, hygiene and health evaluation***Personal protection**

Use suitable eye protection.

**6.2. CS6: Worker Contributing Scenario: General use from professional operators (PROC8b)****Process Categories**

Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)

*Product (article) characteristics***Physical form of product:**

Liquid, vapour pressure 0,5 - 10 kPa at STP

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

*Technical and organisational conditions and measures***Technical and organisational measures**

Handle substance within a closed system.  
Store substance within a closed system.

*Conditions and measures related to personal protection, hygiene and health evaluation***Personal protection**

Use suitable eye protection.

**6.2. CS7: Worker Contributing Scenario: General use from professional operators (PROC16)****Process Categories**

Use of fuels (PROC16)

*Product (article) characteristics***Physical form of product:**

Liquid, vapour pressure 0,5 - 10 kPa at STP

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

*Technical and organisational conditions and measures***Technical and organisational measures**

Handle substance within a closed system.  
Store substance within a closed system.

*Conditions and measures related to personal protection, hygiene and health evaluation***Personal protection**

Use suitable eye protection.

**6.3 Exposure estimation and reference to its source****6.3. CS1: Environment Contributing Scenario: Covered by (ERC9a, ERC9b)**

Release route	Release rate	Release estimation method
Air	0.01 %	N/A
Water	1E-05 %	N/A



soil	0 %	N/A
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### 6.3. CS2: Worker Contributing Scenario: General use from professional operators (PROC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.019 mg/m <sup>3</sup>	N/A	< 0.001
dermal, systemic, long-term	0.03 mg/kg bw/day	N/A	< 0.001
combined routes, systemic, long-term	N/A	N/A	< 0.001

### 6.3. CS3: Worker Contributing Scenario: General use from professional operators (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	38 mg/m <sup>3</sup>	N/A	0.04
dermal, systemic, long-term	1.4 mg/kg bw/day	N/A	0.004
combined routes, systemic, long-term	N/A	N/A	0.0443

### 6.3. CS4: Worker Contributing Scenario: General use from professional operators (PROC3)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	48 mg/m <sup>3</sup>	N/A	0.05
dermal, systemic, long-term	0.69 mg/kg bw/day	N/A	0.002
combined routes, systemic, long-term	N/A	N/A	0.0524

### 6.3. CS5: Worker Contributing Scenario: General use from professional operators (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	190 mg/m <sup>3</sup>	N/A	0.202
dermal, systemic, long-term	14 mg/kg bw/day	N/A	0.04
combined routes, systemic, long-term	N/A	N/A	0.242

### 6.3. CS6: Worker Contributing Scenario: General use from professional operators (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	96 mg/m <sup>3</sup>	N/A	0.101
dermal, systemic, long-term	14 mg/kg bw/day	N/A	0.04

combined routes, systemic, long-term	N/A	N/A	0.141
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### 6.3. CS7: Worker Contributing Scenario: General use from professional operators (PROC16)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	19 mg/m <sup>3</sup>	N/A	0.02
dermal, systemic, long-term	0.34 mg/kg bw/day	N/A	< 0.001
combined routes, systemic, long-term	N/A	N/A	0.0212

### 6.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

#### Guidance to check compliance with the exposure scenario:

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

## 7. ES 7 Consumer use; Fuels (PC13)

### 7.1 TITLE SECTION

Exposure Scenario name	Fuel
Date - Version	23/07/2019 - 1.0
Life Cycle Stage	Consumer use
Main user group	Consumer uses
Sector(s) of use	Consumer uses (SU21)
Product Categories	Fuels (PC13)

### Environment Contributing Scenario

CS1 Covered by	ERC9b
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### Consumer Contributing Scenario

CS2 Consumer	PC13 - PC13_1
CS3 Consumer	PC13 - PC13_2
CS4 Consumer	PC13 - PC13_3
CS5 Consumer	PC13 - PC13_4

## 7.2 Conditions of use affecting exposure

### 7.2. CS1: Environment Contributing Scenario: Covered by (ERC9b)

Environmental release categories	Widespread use of functional fluid (outdoor) (ERC9b)
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#### *Product (article) characteristics*

#### Physical form of product:

Liquid

#### Vapour pressure:

5726 Pa

#### *Conditions and measures related to treatment of waste (including article waste)*

#### Waste treatment

Product residual disposal complies with applicable regulations.

#### *Other conditions affecting environmental exposure*

Local marine water dilution factor: 100

Local freshwater dilution factor: 10

### 7.2. CS2: Consumer Contributing Scenario: Consumer (PC13)

Product Categories	Fuels (PC13)
Product (Sub-)Categories	Liquid: Automotive Refuelling (PC13_1)

#### *Product (article) characteristics*

#### Concentration of substance in product:

Covers concentrations up to 85 %

#### *Amount used, frequency and duration of use/exposure*

#### Amounts used:

Amount per use 37500 g

**Duration:**

Exposure duration 0.05 h/event

**Frequency:**

Covers use up to 51 times per year

*Other conditions affecting consumers exposure*

Outdoor use

**Additional conditions human health**Covers skin contact area up to 210 cm<sup>2</sup>**7.2. CS3: Consumer Contributing Scenario: Consumer (PC13)****Product Categories**

Fuels (PC13)

**Product (Sub-)Categories**

Liquid Scooter Refuelling (PC13\_2)

*Product (article) characteristics***Concentration of substance in product:**

Covers concentrations up to 85 %

*Amount used, frequency and duration of use/exposure***Amounts used:**

Amount per use 37500 g

**Duration:**

Exposure duration 0.033 h/event

**Frequency:**

Covers use up to 51 times per year

*Other conditions affecting consumers exposure*

Outdoor use

**Additional conditions human health**Covers skin contact area up to 210 cm<sup>2</sup>**7.2. CS4: Consumer Contributing Scenario: Consumer (PC13)****Product Categories**

Fuels (PC13)

**Product (Sub-)Categories**

Liquid, Garden equipment - Use (PC13\_3)

*Product (article) characteristics***Concentration of substance in product:**

Covers concentrations up to 15 %

*Amount used, frequency and duration of use/exposure***Amounts used:**

Amount per use 750 g

**Duration:**

Exposure duration 2 h/event

**Frequency:**

Covers use up to 25 times per year

*Other conditions affecting consumers exposure*

Outdoor use

**Additional conditions human health**Covers skin contact area up to 210 cm<sup>2</sup>**7.2. CS5: Consumer Contributing Scenario: Consumer (PC13)****Product Categories**

Fuels (PC13)

<b>Product (Sub-)Categories</b>	Liquid: Garden equipment - Refuelling (PC13_4)
<b>Product (article) characteristics</b>	
<b>Concentration of substance in product:</b> Covers concentrations up to 85 %	
<b>Amount used, frequency and duration of use/exposure</b>	
<b>Amounts used:</b> Amount per use 750 g	
<b>Duration:</b> Exposure duration 0.05 h/event	
<b>Frequency:</b> Covers use up to 25 times per year	
<b>Other conditions affecting consumers exposure</b>	
<b>Room size:</b> Covers use in a one car garage (>34 m <sup>3</sup> ) under typical ventilation.	
<b>Temperature:</b> Covers use at ambient temperatures.	
<b>Additional conditions human health</b> Covers skin contact area up to 210 cm <sup>2</sup>	

## 7.3 Exposure estimation and reference to its source

### 7.3. CS1: Environment Contributing Scenario: Covered by (ERC9b)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	0.0236 mg/L	N/A	0.00246
freshwater sediment	0.00905 mg/kg bw/day	N/A	0.00246
marine water	0.0003 mg/L	N/A	0.00038
marine sediment	0.0015 mg/kg bw/day	N/A	0.00038
marine sediment	0.0015 mg/kg bw/day	N/A	0.00676

### 7.2. CS2: Consumer Contributing Scenario: Consumer (PC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.187 mg/m <sup>3</sup>	N/A	0.00164
inhalative, local, short-term	1.3 mg/m <sup>3</sup>	N/A	0.0114
dermal, systemic, long-term	0.117 mg/kg bw/day	N/A	8.1E-05
combined routes, systemic, long-term	N/A	N/A	0.0114

### 7.2. CS3: Consumer Contributing Scenario: Consumer (PC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.0612 mg/m <sup>3</sup>	N/A	0.000544

inhalative, local, short-term	0.434 mg/m <sup>3</sup>	N/A	0.0038
dermal, systemic, long-term	0.117 mg/kg bw/day	N/A	8.1E-05
combined routes, systemic, long-term	N/A	N/A	0.00388

## 7.2. CS4: Consumer Contributing Scenario: Consumer (PC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.0764 mg/m <sup>3</sup>	N/A	0.00067
inhalative, local, short-term	1.09 mg/m <sup>3</sup>	N/A	0.00956
dermal, systemic, long-term	4.13 mg/kg bw/day	N/A	0.0014
combined routes, systemic, long-term	N/A	N/A	0.0109

## 7.2. CS5: Consumer Contributing Scenario: Consumer (PC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.079 mg/m <sup>3</sup>	N/A	0.000692
inhalative, local, short-term	1.12 mg/m <sup>3</sup>	N/A	0.00982
dermal, systemic, long-term	0.117 mg/kg bw/day	N/A	3.98E-05
combined routes, systemic, long-term	N/A	N/A	0.00986

## 7.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

### Guidance to check compliance with the exposure scenario:

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

## 8. ES 8 Consumer use; Various products (PC1, PC3, PC8, PC18, PC23)

### 8.1 TITLE SECTION

Exposure Scenario name	Cosumer other uses
Date - Version	23/07/2019 - 1.0
Life Cycle Stage	Consumer use
Main user group	Consumer uses
Sector(s) of use	Consumer uses (SU21)
Product Categories	Adhesives, sealants (PC1) - Air care products (PC3) - Biocidal products (PC8) - Ink and toners (PC18) - Leather treatment products (PC23) - Lubricants, greases, release products (PC24) - Plant protection products (PC27) - Polishes and wax blends (PC31) - Textile dyes and impregnating products (PC34)

### Environment Contributing Scenario

CS1 Covered by	ERC8a - ERC8d
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### Consumer Contributing Scenario

CS2 Consumer	PC1 - PC1_1
CS3 Consumer	PC1 - PC1_3
CS4 Consumer	PC1 - PC1_4
CS5 Consumer	PC3 - PC3_1
CS6 Consumer	PC3 - PC3_2
CS7 Consumer	PC8 - PC35_1, PC8_1
CS8 Consumer	PC8 - PC8_2, PC35_2
CS9 Consumer	PC8 - PC8_3, PC35_3
CS10 Consumer	PC18
CS11 Consumer	PC23 - PC23_1, PC31_1
CS12 Consumer	PC23 - PC23_2, PC31_2
CS13 Consumer	PC24 - PC16_1, PC17_1, PC24_1, 36
CS14 Consumer	PC27
CS15 Consumer	PC31 - PC23_1, PC31_1
CS16 Consumer	PC31 - PC23_2, PC31_2

## 8.2 Conditions of use affecting exposure

### 8.2. CS1: Environment Contributing Scenario: Covered by (ERC8a, ERC8d)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8a, ERC8d)
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### *Product (article) characteristics*

#### Physical form of product:

Liquid, vapour pressure > 10 kPa at STP

### *Conditions and measures related to treatment of waste (including article waste)*

## Waste treatment

Hazardous waste incineration

Waste - minimum efficiency of: 99.8 %

### *Other conditions affecting environmental exposure*

**Local marine water dilution factor:** 100

**Local freshwater dilution factor:** 10

**Receiving surface water flow:** 2000 m<sup>3</sup>/day

### 8.2. CS2: Consumer Contributing Scenario: Consumer (PC1)

**Product Categories** Adhesives, sealants (PC1)

**Product (Sub-)Categories** Glues, hobby use (PC1\_1)

### *Product (article) characteristics*

**Concentration of substance in product:**

Covers concentrations up to 70 %

### *Amount used, frequency and duration of use/exposure*

**Amounts used:**

Amount per use 50 g

**Duration:**

Exposure duration 4 h/event

**Frequency:**

Covers exposure up to 1 events per day

### *Other conditions affecting consumers exposure*

**Room size:** Covers use in room size of 20 m<sup>3</sup>

**Additional conditions human health**

Covers skin contact area up to 35 cm<sup>2</sup>

### 8.2. CS3: Consumer Contributing Scenario: Consumer (PC1)

**Product Categories** Adhesives, sealants (PC1)

**Product (Sub-)Categories** Glue from spray (PC1\_3)

### *Product (article) characteristics*

**Concentration of substance in product:**

Covers concentrations up to 30 %

### *Amount used, frequency and duration of use/exposure*

**Amounts used:**

Amount per use 50 g

**Duration:**

Exposure duration 4 h/event

**Frequency:**

Covers exposure up to 6 times per year

### *Other conditions affecting consumers exposure*

**Room size:** Covers use in room size of 20 m<sup>3</sup>

**Additional conditions human health**

Covers skin contact area up to 35 cm<sup>2</sup>

### 8.2. CS4: Consumer Contributing Scenario: Consumer (PC1)

**Product Categories** Adhesives, sealants (PC1)



<b>Product (Sub-)Categories</b>	Sealants (PC1_4)
<i>Product (article) characteristics</i>	
<b>Concentration of substance in product:</b> Covers concentrations up to 30 %	
<i>Amount used, frequency and duration of use/exposure</i>	
<b>Amounts used:</b> Amount per use 50 g	
<b>Duration:</b> Exposure duration 1 h/event	
<b>Frequency:</b> Covers exposure up to 1 events per day	
<i>Other conditions affecting consumers exposure</i>	
<b>Room size:</b> Covers use in room size of 20 m <sup>3</sup>	
<b>Additional conditions human health</b> Covers skin contact area up to 35 cm <sup>2</sup>	
<b>8.2. CS5: Consumer Contributing Scenario: Consumer (PC3)</b>	
<b>Product Categories</b>	Air care products (PC3)
<b>Product (Sub-)Categories</b>	Air care, instant action (aerosol sprays) (PC3_1)
<i>Product (article) characteristics</i>	
<b>Concentration of substance in product:</b> Covers concentrations up to 40 %	
<i>Amount used, frequency and duration of use/exposure</i>	
<b>Amounts used:</b> Amount per use 50 g	
<b>Duration:</b> Exposure duration 0.3 h/event	
<b>Frequency:</b> Covers exposure up to 4 events per day	
<i>Other conditions affecting consumers exposure</i>	
<b>Room size:</b> Covers use in room size of 20 m <sup>3</sup>	
<b>Additional conditions human health</b> Covers skin contact area up to 35 cm <sup>2</sup>	
<b>8.2. CS6: Consumer Contributing Scenario: Consumer (PC3)</b>	
<b>Product Categories</b>	Air care products (PC3)
<b>Product (Sub-)Categories</b>	Air care, continuous action (solid and liquid) (PC3_2)
<i>Product (article) characteristics</i>	
<b>Concentration of substance in product:</b> Covers concentrations up to 10 %	
<i>Amount used, frequency and duration of use/exposure</i>	
<b>Amounts used:</b> Amount per use 50 g	
<b>Duration:</b> Exposure duration 8 h/event	
<b>Frequency:</b>	

Covers exposure up to 1 events per day

### *Other conditions affecting consumers exposure*

**Room size:** Covers use in room size of 20 m<sup>3</sup>

### **Additional conditions human health**

Covers skin contact area up to 35 cm<sup>2</sup>

## **8.2. CS7: Consumer Contributing Scenario: Consumer (PC8)**

<b>Product Categories</b>	Biocidal products (PC8)
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<b>Product (Sub-)Categories</b>	Laundry and dish washing products (PC35_1, PC8_1)
---------------------------------	---

### *Product (article) characteristics*

### **Concentration of substance in product:**

Covers percentage substance in the product up to 5 %.

### *Amount used, frequency and duration of use/exposure*

#### **Amounts used:**

Amount per use 15 g

#### **Duration:**

Exposure duration 0.5 h/event

#### **Frequency:**

Covers exposure up to 1 events per day

### *Other conditions affecting consumers exposure*

**Room size:** Covers use in room size of 20 m<sup>3</sup>

### **Additional conditions human health**

Covers skin contact area up to 857 cm<sup>2</sup>

## **8.2. CS8: Consumer Contributing Scenario: Consumer (PC8)**

<b>Product Categories</b>	Biocidal products (PC8)
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<b>Product (Sub-)Categories</b>	Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) (PC8_2, PC35_2)
---------------------------------	--

### *Product (article) characteristics*

### **Concentration of substance in product:**

Covers percentage substance in the product up to 5 %.

### *Amount used, frequency and duration of use/exposure*

#### **Amounts used:**

Amount per use 50 g

#### **Duration:**

Exposure duration 0.3 h/event

#### **Frequency:**

Covers exposure up to 125 times per year

### *Other conditions affecting consumers exposure*

**Room size:** Covers use in room size of 20 m<sup>3</sup>

### **Additional conditions human health**

Covers skin contact area up to 857 cm<sup>2</sup>

## **8.2. CS9: Consumer Contributing Scenario: Consumer (PC8)**

<b>Product Categories</b>	Biocidal products (PC8)
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<b>Product (Sub-)Categories</b>	Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) (PC8_3, PC35_3)
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### *Product (article) characteristics*

**Concentration of substance in product:**

Covers concentrations up to 15 %

### *Amount used, frequency and duration of use/exposure*

**Amounts used:**

Amount per use 50 g

**Duration:**

Exposure duration 0.2 h/event

**Frequency:**

Covers exposure up to 125 times per year

### *Other conditions affecting consumers exposure*

**Room size:** Covers use in room size of 20 m<sup>3</sup>

**Ventilation rate:** Covers use under typical household ventilation.

**Additional conditions human health**

Covers skin contact area up to 428 cm<sup>2</sup>

## 8.2. CS10: Consumer Contributing Scenario: Consumer (PC18)

**Product Categories**

Ink and toners (PC18)

### *Product (article) characteristics*

**Concentration of substance in product:**

Covers concentrations up to 50 %

### *Amount used, frequency and duration of use/exposure*

**Amounts used:**

Amount per use 50 g

**Duration:**

Exposure duration 8 h/event

**Frequency:**

Covers exposure up to 1 uses per day

### *Other conditions affecting consumers exposure*

**Room size:** Covers use in room size of 20 m<sup>3</sup>

**Ventilation rate:** Covers use under typical household ventilation.

**Additional conditions human health**

Covers skin contact area up to 71 cm<sup>2</sup>

## 8.2. CS11: Consumer Contributing Scenario: Consumer (PC23)

**Product Categories**

Leather treatment products (PC23)

**Product (Sub-)Categories**

Polishes, wax/cream (floor, furniture, shoes) (PC23\_1, PC31\_1)

### *Product (article) characteristics*

**Concentration of substance in product:**

Covers concentrations up to 50 %

### *Amount used, frequency and duration of use/exposure*

**Amounts used:**

Amount per use 50 g

**Duration:**

Exposure duration 1.2 h/event

**Frequency:**

Covers exposure up to 29 times per year

### *Other conditions affecting consumers exposure*

**Room size:** Covers use in room size of 20 m<sup>3</sup>

**Ventilation rate:** Covers use under typical household ventilation.

#### **Additional conditions human health**

Covers skin contact area up to 430 cm<sup>2</sup>

### **8.2. CS12: Consumer Contributing Scenario: Consumer (PC23)**

<b>Product Categories</b>	Leather treatment products (PC23)
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<b>Product (Sub-)Categories</b>	Polishes, spray (furniture, shoes) (PC23_2, PC31_2)
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### *Product (article) characteristics*

#### **Concentration of substance in product:**

Covers concentrations up to 20 %

### *Amount used, frequency and duration of use/exposure*

#### **Amounts used:**

Amount per use 50 g

#### **Duration:**

Exposure duration 0.3 h/event

#### **Frequency:**

Covers exposure up to 8 times per year

### *Other conditions affecting consumers exposure*

**Room size:** Covers use in room size of 20 m<sup>3</sup>

**Ventilation rate:** Covers use under typical household ventilation.

#### **Additional conditions human health**

Covers skin contact area up to 430 cm<sup>2</sup>

### **8.2. CS13: Consumer Contributing Scenario: Consumer (PC24)**

<b>Product Categories</b>	Lubricants, greases, release products (PC24)
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<b>Product (Sub-)Categories</b>	Liquids (PC16_1, PC17_1, PC24_1, 36)
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### *Product (article) characteristics*

#### **Concentration of substance in product:**

Covers concentrations up to 20 %

### *Amount used, frequency and duration of use/exposure*

#### **Amounts used:**

Amount per use 50 g

#### **Duration:**

Exposure duration 0.2 h/event

#### **Frequency:**

Covers exposure up to 4 times per year

### *Other conditions affecting consumers exposure*

**Room size:** Covers use in room size of 20 m<sup>3</sup>

**Ventilation rate:** Covers use under typical household ventilation.

#### **Additional conditions human health**

Covers skin contact area up to 468 cm<sup>2</sup>

### **8.2. CS14: Consumer Contributing Scenario: Consumer (PC27)**

<b>Product Categories</b>	Plant protection products (PC27)
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### *Product (article) characteristics*

**Concentration of substance in product:**

Covers concentrations up to 50 %

**Amount used, frequency and duration of use/exposure****Amounts used:**

Amount per use 50 g

**Duration:**

Exposure duration 0.3 h/event

**Frequency:**

Covers exposure up to 29 times per year

**Other conditions affecting consumers exposure****Room size:** Covers use in room size of 20 m<sup>3</sup>**Ventilation rate:** Covers use under typical household ventilation.**Additional conditions human health**Covers skin contact area up to 857 cm<sup>2</sup>**8.2. CS15: Consumer Contributing Scenario: Consumer (PC31)****Product Categories**

Polishes and wax blends (PC31)

**Product (Sub-)Categories**

Polishes, wax/cream (floor, furniture, shoes) (PC23\_1, PC31\_1)

**Product (article) characteristics****Concentration of substance in product:**

Covers concentrations up to 50 %

**Amount used, frequency and duration of use/exposure****Amounts used:**

Amount per use 50 g

**Duration:**

Exposure duration 1.2 h/event

**Frequency:**

Covers exposure up to 29 times per year

**Other conditions affecting consumers exposure****Room size:** Covers use in room size of 20 m<sup>3</sup>**Ventilation rate:** Covers use under typical household ventilation.**Additional conditions human health**Covers skin contact area up to 430 cm<sup>2</sup>**8.2. CS16: Consumer Contributing Scenario: Consumer (PC31)****Product Categories**

Polishes and wax blends (PC31)

**Product (Sub-)Categories**

Polishes, spray (furniture, shoes) (PC23\_2, PC31\_2)

**Product (article) characteristics****Concentration of substance in product:**

Covers concentrations up to 10 %

**Amount used, frequency and duration of use/exposure****Amounts used:**

Amount per use 50 g

**Duration:**

Exposure duration 0.3 h/event

**Frequency:**

Covers exposure up to 8 times per year

### *Other conditions affecting consumers exposure*

**Room size:** Covers use in room size of 20 m<sup>3</sup>

**Ventilation rate:** Covers use under typical household ventilation.

#### **Additional conditions human health**

Covers skin contact area up to 430 cm<sup>2</sup>

## 8.3 Exposure estimation and reference to its source

### 8.3. CS1: Environment Contributing Scenario: Covered by (ERC8a, ERC8d)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
wastewater treatment plant microbes	0.273 mg/L	N/A	0.000471
freshwater	0.0297 mg/L	N/A	0.0309
freshwater sediment	0.114 mg/kg bw/day	N/A	0.031
marine water	0.00304 mg/L	N/A	0.00385
marine sediment	0.0116 mg/kg bw/day	N/A	0.00383
soil	0.116 mg/kg bw/day	N/A	0.00676

### 8.2. CS2: Consumer Contributing Scenario: Consumer (PC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	111 mg/m <sup>3</sup>	N/A	0.973
inhalative, local, short-term	111 mg/m <sup>3</sup>	N/A	0.973
dermal, systemic, long-term	3.28 mg/kg bw/day	N/A	0.0159
combined routes, systemic, long-term	N/A	N/A	0.989

### 8.2. CS3: Consumer Contributing Scenario: Consumer (PC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.788 mg/m <sup>3</sup>	N/A	0.00682
inhalative, local, short-term	47.3 mg/m <sup>3</sup>	N/A	0.414
dermal, systemic, long-term	1.4 mg/kg bw/day	N/A	0.000112
combined routes, systemic, long-term	N/A	N/A	0.212

### 8.2. CS4: Consumer Contributing Scenario: Consumer (PC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
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inhalative, systemic, long-term	23.5 mg/m <sup>3</sup>	N/A	0.206
inhalative, local, short-term	23.5 mg/m <sup>3</sup>	N/A	0.206
dermal, systemic, long-term	1.4 mg/kg bw/day	N/A	0.00679
combined routes, systemic, long-term	N/A	N/A	0.212

### 8.2. CS5: Consumer Contributing Scenario: Consumer (PC3)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	38.7 mg/m <sup>3</sup>	N/A	0.339
inhalative, local, short-term	38.7 mg/m <sup>3</sup>	N/A	0.339
dermal, systemic, long-term	7.51 mg/kg bw/day	N/A	0.0364
combined routes, systemic, long-term	N/A	N/A	0.375

### 8.2. CS6: Consumer Contributing Scenario: Consumer (PC3)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	17.1 mg/m <sup>3</sup>	N/A	0.15
inhalative, local, short-term	17.1 mg/m <sup>3</sup>	N/A	0.15
dermal, systemic, long-term	0.469 mg/kg bw/day	N/A	0.00227
combined routes, systemic, long-term	N/A	N/A	0.152

### 8.2. CS7: Consumer Contributing Scenario: Consumer (PC8)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.672 mg/m <sup>3</sup>	N/A	0.00589
inhalative, local, short-term	0.672 mg/m <sup>3</sup>	N/A	0.00589
dermal, systemic, long-term	5.63 mg/kg bw/day	N/A	0.000273
combined routes, systemic, long-term	N/A	N/A	0.00616

### 8.2. CS8: Consumer Contributing Scenario: Consumer (PC8)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.543 mg/m <sup>3</sup>	N/A	0.00476
inhalative, local, short-term	1.55 mg/m <sup>3</sup>	N/A	0.0135

dermal, systemic, long-term	5.63 mg/kg bw/day	N/A	0.00956
combined routes, systemic, long-term	N/A	N/A	0.0231

### 8.2. CS9: Consumer Contributing Scenario: Consumer (PC8)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.885 mg/m <sup>3</sup>	N/A	0.00776
inhalative, local, short-term	2.52 mg/m <sup>3</sup>	N/A	0.0221
dermal, systemic, long-term	8.43 mg/kg bw/day	N/A	0.0143
combined routes, systemic, long-term	N/A	N/A	0.0364

### 8.2. CS10: Consumer Contributing Scenario: Consumer (PC18)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	86 mg/m <sup>3</sup>	N/A	0.754
inhalative, local, short-term	86 mg/m <sup>3</sup>	N/A	0.754
dermal, systemic, long-term	4.69 mg/kg bw/day	N/A	0.0227
combined routes, systemic, long-term	N/A	N/A	0.777

### 8.2. CS11: Consumer Contributing Scenario: Consumer (PC23)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	3.62 mg/m <sup>3</sup>	N/A	0.0317
inhalative, local, short-term	45.3 mg/m <sup>3</sup>	N/A	0.397
dermal, systemic, long-term	28.2 mg/kg bw/day	N/A	0.0109
combined routes, systemic, long-term	N/A	N/A	0.408

### 8.2. CS12: Consumer Contributing Scenario: Consumer (PC23)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.136 mg/m <sup>3</sup>	N/A	0.00119
inhalative, local, short-term	6.24 mg/m <sup>3</sup>	N/A	0.0547
dermal, systemic, long-term	1.23 mg/kg bw/day	N/A	6.5E-05
combined routes, systemic, long-term	N/A	N/A	0.0295



**8.2. CS13: Consumer Contributing Scenario: Consumer (PC24)**

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.0368 mg/m <sup>3</sup>	N/A	0.000322
inhalative, local, short-term	3.36 mg/m <sup>3</sup>	N/A	0.0294
dermal, systemic, long-term	1.23 mg/kg bw/day	N/A	6.5E-05
combined routes, systemic, long-term	N/A	N/A	0.0295

**8.2. CS14: Consumer Contributing Scenario: Consumer (PC27)**

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	15.7 mg/m <sup>3</sup>	N/A	0.137
inhalative, local, short-term	15.7 mg/m <sup>3</sup>	N/A	0.137
dermal, systemic, long-term	11.2 mg/kg bw/day	N/A	0.0543
combined routes, systemic, long-term	N/A	N/A	0.226
oral, systemic, long-term	131.2 mg/kg bw/day	N/A	0.0344

**8.2. CS15: Consumer Contributing Scenario: Consumer (PC31)**

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	3.62 mg/m <sup>3</sup>	N/A	0.0317
inhalative, local, short-term	45.3 mg/m <sup>3</sup>	N/A	0.397
dermal, systemic, long-term	28.2 mg/kg bw/day	N/A	0.0109
combined routes, systemic, long-term	N/A	N/A	0.408

**8.2. CS16: Consumer Contributing Scenario: Consumer (PC31)**

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.0684 mg/m <sup>3</sup>	N/A	0.0006
inhalative, local, short-term	3.12 mg/m <sup>3</sup>	N/A	0.0273
dermal, systemic, long-term	5.65 mg/kg bw/day	N/A	0.000597
combined routes, systemic, long-term	N/A	N/A	0.0279

## 8.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

### **Guidance to check compliance with the exposure scenario:**

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

# Exposure Scenario, 19/07/2019

Substance identity	
Chemical name	ETHYLENE GLYCOL
CAS No.	107-21-1
EINECS No.	203-473-3

## Table of contents

1. **ES 1** Use at industrial site
2. **ES 2** Widespread use by professional workers
3. **ES 3** Widespread use by professional workers
4. **ES 4** Consumer use; Various products (PC9a, PC1, PC4, PC8, PC15)

## 1. ES 1 Use at industrial site

### 1.1 TITLE SECTION

Exposure Scenario name	Use in cleaning agents
Date - Version	18/07/2019 - 1.0
Life Cycle Stage	Use at industrial site
Main user group	Industrial uses
Sector(s) of use	Industrial uses (SU3)

#### Environment Contributing Scenario

CS1 Covered by	ERC4
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#### Worker Contributing Scenario

CS2 Industrial	PROC1
CS3 Industrial	PROC2
CS4 Industrial	PROC3
CS5 Industrial	PROC4
CS6 Industrial	PROC8b
CS7 Industrial	PROC7
CS8 Industrial	PROC8a
CS9 Industrial	PROC10
CS10 Industrial	PROC13

## 1.2 Conditions of use affecting exposure

### 1.2. CS1: Environment Contributing Scenario: Covered by (ERC4)

Environmental release categories	Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)
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#### *Product (article) characteristics*

##### Physical form of product:

Liquid

##### Vapour pressure:

0.123 hPa

### 1.2. CS2: Worker Contributing Scenario: Industrial (PROC1)

Process Categories	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)
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#### *Product (article) characteristics*

##### Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

#### *Amount used, frequency and duration of use/exposure*

##### Duration:

Covers daily exposures up to 8 hours

##### Frequency:

Use frequency 240 days per year

#### *Conditions and measures related to personal protection, hygiene and health evaluation*

##### Personal protection

Wear suitable gloves tested to EN374.

### *Other conditions affecting worker exposure*

Indoor use

## **1.2. CS3: Worker Contributing Scenario: Industrial (PROC2)**

### **Process Categories**

Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

### *Product (article) characteristics*

#### **Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Amount used, frequency and duration of use/exposure*

#### **Duration:**

Covers daily exposures up to 8 hours

#### **Frequency:**

Use frequency 240 days per year

### *Conditions and measures related to personal protection, hygiene and health evaluation*

#### **Personal protection**

Wear suitable gloves tested to EN374.

### *Other conditions affecting worker exposure*

Indoor use

## **1.2. CS4: Worker Contributing Scenario: Industrial (PROC3)**

### **Process Categories**

Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

### *Product (article) characteristics*

#### **Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Amount used, frequency and duration of use/exposure*

#### **Duration:**

Covers daily exposures up to 8 hours

#### **Frequency:**

Use frequency 240 days per year

### *Conditions and measures related to personal protection, hygiene and health evaluation*

#### **Personal protection**

Wear suitable gloves tested to EN374.

### *Other conditions affecting worker exposure*

Indoor use

## **1.2. CS5: Worker Contributing Scenario: Industrial (PROC4)**

### **Process Categories**

Chemical production where opportunity for exposure arises (PROC4)

### *Product (article) characteristics*

#### **Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Amount used, frequency and duration of use/exposure*

#### **Duration:**

Covers daily exposures up to 8 hours

#### **Frequency:**

Use frequency 240 days per year

### *Conditions and measures related to personal protection, hygiene and health evaluation*

**Personal protection**

Wear suitable gloves tested to EN374.

***Other conditions affecting worker exposure***

Indoor use

**1.2. CS6: Worker Contributing Scenario: Industrial (PROC8b)****Process Categories**

Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)

***Product (article) characteristics*****Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

***Amount used, frequency and duration of use/exposure*****Duration:**

Covers daily exposures up to 8 hours

**Frequency:**

Use frequency 240 days per year

***Conditions and measures related to personal protection, hygiene and health evaluation*****Personal protection**

Wear suitable gloves tested to EN374.

***Other conditions affecting worker exposure***

Indoor use

**1.2. CS7: Worker Contributing Scenario: Industrial (PROC7)****Process Categories**

Industrial spraying (PROC7)

***Product (article) characteristics*****Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

***Amount used, frequency and duration of use/exposure*****Amounts used:**

Amount per use 1 L/min

**Duration:**

Covers daily exposures up to 8 hours

**Frequency:**

Use frequency 5 days per week

***Conditions and measures related to personal protection, hygiene and health evaluation*****Personal protection**

Wear suitable gloves tested to EN374.

Dermal - minimum efficiency of: 90 %

***Other conditions affecting worker exposure***

Indoor use

**Room size:** Covers use in room size of > 1000 m<sup>3</sup>**1.2. CS8: Worker Contributing Scenario: Industrial (PROC8a)****Process Categories**

Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)

***Product (article) characteristics*****Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Amount used, frequency and duration of use/exposure*

**Duration:**

Covers daily exposures up to 8 hours

**Frequency:**

Use frequency 240 days per year

### *Conditions and measures related to personal protection, hygiene and health evaluation*

**Personal protection**

Wear suitable gloves tested to EN374.

### *Other conditions affecting worker exposure*

Indoor use

**Ventilation rate:** > 90 %

## 1.2. CS9: Worker Contributing Scenario: Industrial (PROC10)

**Process Categories**

Roller application or brushing (PROC10)

### *Product (article) characteristics*

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Amount used, frequency and duration of use/exposure*

**Duration:**

Covers daily exposures up to 8 hours

**Frequency:**

Use frequency 240 days per year

### *Conditions and measures related to personal protection, hygiene and health evaluation*

**Personal protection**

Wear suitable gloves tested to EN374.

Use suitable eye protection.

### *Other conditions affecting worker exposure*

Indoor use

## 1.2. CS10: Worker Contributing Scenario: Industrial (PROC13)

**Process Categories**

Treatment of articles by dipping and pouring (PROC13)

### *Product (article) characteristics*

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Amount used, frequency and duration of use/exposure*

**Duration:**

Covers daily exposures up to 8 hours

**Frequency:**

Use frequency 240 days per year

### *Conditions and measures related to personal protection, hygiene and health evaluation*

**Personal protection**

Wear suitable gloves tested to EN374.

Use suitable eye protection.

### *Other conditions affecting worker exposure*

Indoor use

## 1.3 Exposure estimation and reference to its source

### 1.3. CS2: Worker Contributing Scenario: Industrial (PROC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.001
inhalative, local, long-term	N/A	EASY TRA v2.0	0.001
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.003
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.004

### 1.3. CS3: Worker Contributing Scenario: Industrial (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.07
inhalative, local, long-term	N/A	EASY TRA v2.0	0.07
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.01
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.08

### 1.3. CS4: Worker Contributing Scenario: Industrial (PROC3)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.22
inhalative, local, long-term	N/A	EASY TRA v2.0	0.22
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.003
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.223

### 1.3. CS5: Worker Contributing Scenario: Industrial (PROC4)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.37
inhalative, local, long-term	N/A	EASY TRA v2.0	0.37
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.06
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.43

### 1.3. CS6: Worker Contributing Scenario: Industrial (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.37



inhalative, local, long-term	N/A	EASY TRA v2.0	0.37
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.06
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.43

### 1.3. CS7: Worker Contributing Scenario: Industrial (PROC7)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.28
inhalative, local, long-term	N/A	EASY TRA v2.0	0.28
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.52
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.8

### 1.3. CS8: Worker Contributing Scenario: Industrial (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.37
inhalative, local, long-term	N/A	EASY TRA v2.0	0.37
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.06
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.43

### 1.3. CS9: Worker Contributing Scenario: Industrial (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.74
inhalative, local, long-term	N/A	EASY TRA v2.0	0.74
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.03
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.77

### 1.3. CS10: Worker Contributing Scenario: Industrial (PROC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.74
inhalative, local, long-term	N/A	EASY TRA v2.0	0.74
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.01

combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.75
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## 1.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**Guidance to check compliance with the exposure scenario:**  
Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

## 2. ES 2 Widespread use by professional workers

### 2.1 TITLE SECTION

Exposure Scenario name	Use in cleaning agents
Date - Version	19/07/2019 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)

#### Environment Contributing Scenario

CS1 Covered by	ERC8a - ERC8d
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#### Worker Contributing Scenario

CS2 General use from professional operators	PROC1
CS3 General use from professional operators	PROC2
CS4 General use from professional operators	PROC3
CS5 General use from professional operators	PROC4
CS6 General use from professional operators	PROC8b
CS7 General use from professional operators	PROC8a
CS8 General use from professional operators	PROC10
CS9 General use from professional operators	PROC11
CS10 General use from professional operators	PROC13

## 2.2 Conditions of use affecting exposure

### 2.2. CS1: Environment Contributing Scenario: Covered by (ERC8a, ERC8d)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8a, ERC8d)
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#### *Product (article) characteristics*

##### Physical form of product:

Liquid

##### Vapour pressure:

0.123 hPa

### 2.2. CS2: Worker Contributing Scenario: General use from professional operators (PROC1)

Process Categories	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)
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#### *Product (article) characteristics*

##### Physical form of product:

Liquid

##### Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

#### *Amount used, frequency and duration of use/exposure*

**Duration:**

Covers daily exposures up to 8 hours

**Frequency:**

Use frequency 240 days per year

***Conditions and measures related to personal protection, hygiene and health evaluation*****Personal protection**

Wear suitable gloves tested to EN374.

Use suitable eye protection.

***Other conditions affecting worker exposure***

Indoor use

**2.2. CS3: Worker Contributing Scenario: General use from professional operators (PROC2)****Process Categories**

Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

***Product (article) characteristics*****Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

***Amount used, frequency and duration of use/exposure*****Duration:**

Covers daily exposures up to 8 hours

**Frequency:**

Use frequency 240 days per year

***Conditions and measures related to personal protection, hygiene and health evaluation*****Personal protection**

Wear suitable gloves tested to EN374.

Use suitable eye protection.

***Other conditions affecting worker exposure***

Indoor use

**2.2. CS4: Worker Contributing Scenario: General use from professional operators (PROC3)****Process Categories**

Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

***Product (article) characteristics*****Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

***Amount used, frequency and duration of use/exposure*****Duration:**

Covers daily exposures up to 8 hours

**Frequency:**

Use frequency 240 days per year

***Conditions and measures related to personal protection, hygiene and health evaluation*****Personal protection**

Wear suitable gloves tested to EN374.

Use suitable eye protection.

***Other conditions affecting worker exposure***

Indoor use

## 2.2. CS5: Worker Contributing Scenario: General use from professional operators (PROC4)

**Process Categories** Chemical production where opportunity for exposure arises (PROC4)

### *Product (article) characteristics*

**Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Amount used, frequency and duration of use/exposure*

**Duration:**

Covers daily exposures up to 8 hours

**Frequency:**

Use frequency 240 days per year

### *Conditions and measures related to personal protection, hygiene and health evaluation*

**Personal protection**

Wear suitable gloves tested to EN374.

Use suitable eye protection.

### *Other conditions affecting worker exposure*

Indoor use

## 2.2. CS6: Worker Contributing Scenario: General use from professional operators (PROC8b)

**Process Categories** Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)

### *Product (article) characteristics*

**Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Amount used, frequency and duration of use/exposure*

**Duration:**

Covers daily exposures up to 8 hours

**Frequency:**

Use frequency 240 days per year

### *Conditions and measures related to personal protection, hygiene and health evaluation*

**Personal protection**

Wear suitable gloves tested to EN374.

Use suitable eye protection.

### *Other conditions affecting worker exposure*

Indoor use

## 2.2. CS7: Worker Contributing Scenario: General use from professional operators (PROC8a)

**Process Categories** Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)

### *Product (article) characteristics*

**Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Amount used, frequency and duration of use/exposure*

**Duration:**

Covers daily exposures up to 8 hours

**Frequency:**

Use frequency 240 days per year

***Conditions and measures related to personal protection, hygiene and health evaluation*****Personal protection**

Wear suitable gloves tested to EN374.

Use suitable eye protection.

***Other conditions affecting worker exposure***

Indoor use

**Ventilation rate:** 80 %**2.2. CS8: Worker Contributing Scenario: General use from professional operators (PROC10)****Process Categories**

Roller application or brushing (PROC10)

***Product (article) characteristics*****Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

***Amount used, frequency and duration of use/exposure*****Duration:**

Covers daily exposures up to 8 hours

**Frequency:**

Use frequency 240 days per year

***Conditions and measures related to personal protection, hygiene and health evaluation*****Personal protection**

Wear suitable gloves tested to EN374.

Use suitable eye protection.

Wear suitable respiratory protection.

Inhalation - minimum efficiency of: 80 %

***Other conditions affecting worker exposure***

Indoor use

**Ventilation rate:** 80 %**2.2. CS9: Worker Contributing Scenario: General use from professional operators (PROC11)****Process Categories**

Non industrial spraying (PROC11)

***Product (article) characteristics*****Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

***Amount used, frequency and duration of use/exposure*****Amounts used:**

Amount per use 0.05 L/min

**Duration:**

Exposure duration 180 min

**Frequency:**

Use frequency < 5 days per week

### *Technical and organisational conditions and measures*

#### **Technical and organisational measures**

Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

### *Conditions and measures related to personal protection, hygiene and health evaluation*

#### **Personal protection**

Wear suitable gloves tested to EN374. Use suitable eye protection.	Inhalation - minimum efficiency of: 90 %
Wear suitable respiratory protection.	Inhalation - minimum efficiency of: 80 %

### *Other conditions affecting worker exposure*

Indoor use

**Room size:** Covers use in room size of > 100 m<sup>3</sup>

**Ventilation rate:** 80 %

## **2.2. CS10: Worker Contributing Scenario: General use from professional operators (PROC13)**

**Process Categories** Treatment of articles by dipping and pouring (PROC13)

### *Product (article) characteristics*

#### **Physical form of product:**

Liquid

#### **Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Amount used, frequency and duration of use/exposure*

#### **Duration:**

Covers daily exposures up to 8 hours

#### **Frequency:**

Use frequency < 240 days per year

### *Conditions and measures related to personal protection, hygiene and health evaluation*

#### **Personal protection**

Wear suitable gloves tested to EN374. Use suitable eye protection.	Inhalation - minimum efficiency of: 90 %
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### *Other conditions affecting worker exposure*

Indoor use

## **2.3 Exposure estimation and reference to its source**

### **2.3. CS2: Worker Contributing Scenario: General use from professional operators (PROC1)**

<b>Exposure route, Health effect, Exposure indicator</b>	<b>Exposure level</b>	<b>Calculation method</b>	<b>Risk Characterization Ratio (RCR)</b>
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.001
dermal, local, long-term	N/A	ECETOC TRA worker v2.0	0.001
inhalative, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.003

dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.004
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### 2.3. CS3: Worker Contributing Scenario: General use from professional operators (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.37
dermal, local, long-term	N/A	ECETOC TRA worker v2.0	0.37
inhalative, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.01
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.38

### 2.3. CS4: Worker Contributing Scenario: General use from professional operators (PROC3)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.22
dermal, local, long-term	N/A	ECETOC TRA worker v2.0	0.22
inhalative, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.003
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.223

### 2.3. CS5: Worker Contributing Scenario: General use from professional operators (PROC4)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.74
dermal, local, long-term	N/A	ECETOC TRA worker v2.0	0.74
inhalative, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.006
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.8

### 2.3. CS6: Worker Contributing Scenario: General use from professional operators (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.74
dermal, local, long-term	N/A	ECETOC TRA worker v2.0	0.74
inhalative, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.06
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.8



### 2.3. CS7: Worker Contributing Scenario: General use from professional operators (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.37
dermal, local, long-term	N/A	ECETOC TRA worker v2.0	0.37
inhalative, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.13
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.5

### 2.3. CS8: Worker Contributing Scenario: General use from professional operators (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.37
dermal, local, long-term	N/A	ECETOC TRA worker v2.0	0.37
inhalative, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.3
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.4

### 2.3. CS9: Worker Contributing Scenario: General use from professional operators (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.4
dermal, local, long-term	N/A	ECETOC TRA worker v2.0	0.4
inhalative, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.51
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.91

### 2.3. CS10: Worker Contributing Scenario: General use from professional operators (PROC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.74
dermal, local, long-term	N/A	ECETOC TRA worker v2.0	0.74
inhalative, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.01
dermal, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.75

## 2.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**Guidance to check compliance with the exposure scenario:**

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

### 3. ES 3 Widespread use by professional workers

#### 3.1 TITLE SECTION

Exposure Scenario name	Use in antifreeze products
Date - Version	19/07/2019 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)

#### Environment Contributing Scenario

CS1 Covered by	ERC8d
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#### Worker Contributing Scenario

CS2 General use from professional operators	PROC1
CS3 General use from professional operators	PROC2
CS4 General use from professional operators	PROC8a
CS5 General use from professional operators	PROC8b
CS6 General use from professional operators	PROC11

### 3.2 Conditions of use affecting exposure

#### 3.2. CS1: Environment Contributing Scenario: Covered by (ERC8d)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d)
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#### *Product (article) characteristics*

##### Physical form of product:

Liquid

##### Vapour pressure:

0.123 hPa

#### 3.2. CS2: Worker Contributing Scenario: General use from professional operators (PROC1)

Process Categories	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)
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#### *Product (article) characteristics*

##### Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

#### *Amount used, frequency and duration of use/exposure*

##### Duration:

Covers daily exposures up to 8 hours

##### Frequency:

Covers exposure up to 240 days per year

#### *Technical and organisational conditions and measures*

##### Technical and organisational measures

Use in contained systems

#### *Conditions and measures related to personal protection, hygiene and health evaluation*

##### Personal protection

Wear suitable gloves tested to EN374.

### *Other conditions affecting worker exposure*

Indoor use

### **3.2. CS3: Worker Contributing Scenario: General use from professional operators (PROC2)**

#### **Process Categories**

Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

#### *Product (article) characteristics*

#### **Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

#### *Amount used, frequency and duration of use/exposure*

#### **Duration:**

Covers daily exposures up to 8 hours

#### **Frequency:**

Covers exposure up to 240 days per year

#### *Technical and organisational conditions and measures*

#### **Technical and organisational measures**

Use in contained systems

#### *Conditions and measures related to personal protection, hygiene and health evaluation*

#### **Personal protection**

Wear suitable gloves tested to EN374.

### *Other conditions affecting worker exposure*

Indoor use

### **3.2. CS4: Worker Contributing Scenario: General use from professional operators (PROC8a)**

#### **Process Categories**

Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)

#### *Product (article) characteristics*

#### **Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

#### *Amount used, frequency and duration of use/exposure*

#### **Duration:**

Covers daily exposures up to 8 hours

#### **Frequency:**

Covers exposure up to 240 days per year

#### *Technical and organisational conditions and measures*

#### **Technical and organisational measures**

Use in contained systems

#### *Conditions and measures related to personal protection, hygiene and health evaluation*

#### **Personal protection**

Wear suitable gloves tested to EN374.

Wear suitable respiratory protection.

Inhalation - minimum efficiency of: 80 %

### *Other conditions affecting worker exposure*

Indoor use

**Ventilation rate:** 80 %

### **3.2. CS5: Worker Contributing Scenario: General use from professional operators (PROC8b)**

#### **Process Categories**

Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)

### *Product (article) characteristics*

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Amount used, frequency and duration of use/exposure*

**Duration:**

Covers daily exposures up to 8 hours

**Frequency:**

Covers exposure up to 240 days per year

### *Technical and organisational conditions and measures*

**Technical and organisational measures**

Use in contained systems

### *Conditions and measures related to personal protection, hygiene and health evaluation*

**Personal protection**

Wear suitable gloves tested to EN374.

### *Other conditions affecting worker exposure*

Indoor use

## 3.2. CS6: Worker Contributing Scenario: General use from professional operators (PROC11)

**Process Categories**

Non industrial spraying (PROC11)

### *Product (article) characteristics*

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### *Amount used, frequency and duration of use/exposure*

**Duration:**

Exposure duration 180 min

**Frequency:**

Covers exposure up to 5 days per week

### *Technical and organisational conditions and measures*

**Technical and organisational measures**

Use in contained systems

### *Conditions and measures related to personal protection, hygiene and health evaluation*

**Personal protection**

Wear suitable gloves tested to EN374.

Dermal - minimum efficiency of: 90 %

### *Other conditions affecting worker exposure*

Indoor use

**Room size:** Covers use in room size of > 100 m<sup>3</sup>

## 3.3 Exposure estimation and reference to its source

### 3.3. CS2: Worker Contributing Scenario: General use from professional operators (PROC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.001
inhalative, local, long-term	N/A	EASY TRA v2.0	0.001
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.003

combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.004
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### 3.3. CS3: Worker Contributing Scenario: General use from professional operators (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.37
inhalative, local, long-term	N/A	EASY TRA v2.0	0.37
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.01
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.38

### 3.3. CS4: Worker Contributing Scenario: General use from professional operators (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.37
inhalative, local, long-term	N/A	EASY TRA v2.0	0.37
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.13
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.5

### 3.3. CS5: Worker Contributing Scenario: General use from professional operators (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.74
inhalative, local, long-term	N/A	EASY TRA v2.0	0.74
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.06
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.8

### 3.3. CS6: Worker Contributing Scenario: General use from professional operators (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	EASY TRA v2.0	0.4
inhalative, local, long-term	N/A	EASY TRA v2.0	0.4
dermal, systemic, long-term	N/A	EASY TRA v2.0	0.51
combined routes, systemic, long-term	N/A	EASY TRA v2.0	0.91

## 3.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

### **Guidance to check compliance with the exposure scenario:**

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

## 4. ES 4 Consumer use; Various products (PC9a, PC1, PC4, PC8, PC15)

### 4.1 TITLE SECTION

<b>Exposure Scenario name</b>	Consumer goods
<b>Date - Version</b>	19/07/2019 - 1.0
<b>Life Cycle Stage</b>	Consumer use
<b>Main user group</b>	Consumer uses
<b>Product Categories</b>	Coatings and paints, thinners, paint removers (PC9a) - Adhesives, sealants (PC1) - Anti-freeze and de-icing products (PC4) - Biocidal products (PC8) - Non-metal surface treatment products (PC15) - Heat transfer fluids (PC16) - Hydraulic fluids (PC17) - Ink and toners (PC18) - Leather treatment products (PC23) - Polishes and wax blends (PC31) - Polymer preparations and compounds (PC32) - Textile dyes and impregnating products (PC34) - Washing and cleaning products (PC35)

### Environment Contributing Scenario

<b>CS1 Covered by</b>	ERC8a - ERC8c - ERC8d - ERC8f - ERC9a - ERC9b
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### Consumer Contributing Scenario

<b>CS2 Consumer</b>	PC1
<b>CS3 Consumer</b>	PC4 - PC16 - PC17 - PC4_1
<b>CS4 Consumer</b>	PC4 - PC4_2
<b>CS5 Consumer</b>	PC9a - PC15 - PC9a_2, PC15_2
<b>CS6 Consumer</b>	PC8
<b>CS7 Consumer</b>	PC18
<b>CS8 Consumer</b>	PC31
<b>CS9 Consumer</b>	PC32
<b>CS10 Consumer</b>	PC35 - PC8_2, PC35_2
<b>CS11 Consumer</b>	PC35 - PC8_3, PC35_3
<b>CS12 Consumer</b>	PC15 - PC23 - PC34 - PC9a_1, PC15_1

## 4.2 Conditions of use affecting exposure

### 4.2. CS1: Environment Contributing Scenario: Covered by (ERC8a, ERC8c, ERC8d, ERC8f, ERC9a, ERC9b)

<b>Environmental release categories</b>	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use leading to inclusion into/onto article (indoor) - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) - Widespread use leading to inclusion into/onto article (outdoor) - Widespread use of functional fluid (indoor) - Widespread use of functional fluid (outdoor) (ERC8a, ERC8c, ERC8d, ERC8f, ERC9a, ERC9b)
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### *Product (article) characteristics*

#### **Physical form of product:**

Liquid

#### **Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

### 4.2. CS2: Consumer Contributing Scenario: Consumer (PC1)

<b>Product Categories</b>	Adhesives, sealants (PC1)
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<i>Product (article) characteristics</i>	
<b>Concentration of substance in product:</b> Covers concentrations up to 0.75 %	
<b>4.2. CS3: Consumer Contributing Scenario: Consumer (PC4, PC16, PC17)</b>	
<b>Product Categories</b>	Anti-freeze and de-icing products - Heat transfer fluids - Hydraulic fluids (PC4, PC16, PC17)
<b>Product (Sub-)Categories</b>	Washing car window (PC4_1)
<i>Product (article) characteristics</i>	
<b>Concentration of substance in product:</b> Covers concentrations up to 45 %	
<i>Amount used, frequency and duration of use/exposure</i>	
<b>Duration:</b> Exposure duration < 15 min	
<b>4.2. CS4: Consumer Contributing Scenario: Consumer (PC4)</b>	
<b>Product Categories</b>	Anti-freeze and de-icing products (PC4)
<b>Product (Sub-)Categories</b>	Pouring into radiator (PC4_2)
<i>Product (article) characteristics</i>	
<b>Concentration of substance in product:</b> Covers percentage substance in the product up to 100 %.	
<b>4.2. CS5: Consumer Contributing Scenario: Consumer (PC9a, PC15)</b>	
<b>Product Categories</b>	Coatings and paints, thinners, paint removers - Non-metal surface treatment products (PC9a, PC15)
<b>Product (Sub-)Categories</b>	Solvent rich, high solid, water borne paint (PC9a_2, PC15_2)
<i>Product (article) characteristics</i>	
<b>Concentration of substance in product:</b> Covers concentrations up to 10 %	
<b>4.2. CS6: Consumer Contributing Scenario: Consumer (PC8)</b>	
<b>Product Categories</b>	Biocidal products (PC8)
<b>4.2. CS7: Consumer Contributing Scenario: Consumer (PC18)</b>	
<b>Product Categories</b>	Ink and toners (PC18)
<i>Product (article) characteristics</i>	
<b>Concentration of substance in product:</b> Covers percentage substance in the product up to 5 %.	
<b>4.2. CS8: Consumer Contributing Scenario: Consumer (PC31)</b>	
<b>Product Categories</b>	Polishes and wax blends (PC31)
<i>Product (article) characteristics</i>	
<b>Concentration of substance in product:</b> Covers concentrations up to 10 %	
<b>4.2. CS9: Consumer Contributing Scenario: Consumer (PC32)</b>	
<b>Product Categories</b>	Polymer preparations and compounds (PC32)
<i>Product (article) characteristics</i>	
<b>Concentration of substance in product:</b> Covers percentage substance in the product up to 5 %.	
<b>4.2. CS10: Consumer Contributing Scenario: Consumer (PC35)</b>	

<b>Product Categories</b>	Washing and cleaning products (PC35)
<b>Product (Sub-)Categories</b>	Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) (PC8_2, PC35_2)

*Product (article) characteristics*

**Concentration of substance in product:**

Covers concentrations up to 20 %

**4.2. CS11: Consumer Contributing Scenario: Consumer (PC35)**

<b>Product Categories</b>	Washing and cleaning products (PC35)
<b>Product (Sub-)Categories</b>	Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) (PC8_3, PC35_3)

*Product (article) characteristics*

**Concentration of substance in product:**

Covers percentage substance in the product up to 5 %.

**4.2. CS12: Consumer Contributing Scenario: Consumer (PC15, PC23, PC34)**

<b>Product Categories</b>	Non-metal surface treatment products - Leather treatment products - Textile dyes and impregnating products (PC15, PC23, PC34)
<b>Product (Sub-)Categories</b>	Waterborne latex wall paint (PC9a_1, PC15_1)

**4.3 Exposure estimation and reference to its source**

**4.2. CS2: Consumer Contributing Scenario: Consumer (PC1)**

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	N/A	0.59
dermal, systemic, long-term	N/A	N/A	0.005
combined routes, systemic, long-term	N/A	N/A	0.505

**4.2. CS3: Consumer Contributing Scenario: Consumer (PC4, PC16, PC17)**

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	N/A	0.28
dermal, systemic, long-term	N/A	N/A	0.08
combined routes, systemic, long-term	N/A	N/A	0.36

**4.2. CS4: Consumer Contributing Scenario: Consumer (PC4)**

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	N/A	0
dermal, systemic, long-term	N/A	N/A	0.09
combined routes, systemic, long-term	N/A	N/A	0.09

#### 4.2. CS5: Consumer Contributing Scenario: Consumer (PC9a, PC15)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	N/A	0.04
dermal, systemic, long-term	N/A	N/A	0.02
combined routes, systemic, long-term	N/A	N/A	0.06

#### 4.2. CS6: Consumer Contributing Scenario: Consumer (PC8)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	N/A	0
dermal, systemic, long-term	N/A	N/A	0.006
combined routes, systemic, long-term	N/A	N/A	0.006

#### 4.2. CS7: Consumer Contributing Scenario: Consumer (PC18)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	N/A	0.18
dermal, systemic, long-term	N/A	N/A	0
combined routes, systemic, long-term	N/A	N/A	0.18

#### 4.2. CS8: Consumer Contributing Scenario: Consumer (PC31)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	N/A	0.56
dermal, systemic, long-term	N/A	N/A	0.04
combined routes, systemic, long-term	N/A	N/A	0.6

#### 4.2. CS9: Consumer Contributing Scenario: Consumer (PC32)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	N/A	0.009
dermal, systemic, long-term	N/A	N/A	0.001
combined routes, systemic, long-term	N/A	N/A	0.01

#### 4.2. CS10: Consumer Contributing Scenario: Consumer (PC35)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	N/A	0.09
dermal, systemic, long-term	N/A	N/A	0.22
combined routes, systemic, long-term	N/A	N/A	0.31

#### 4.2. CS11: Consumer Contributing Scenario: Consumer (PC35)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	N/A	N/A	0.02
dermal, systemic, long-term	N/A	N/A	0.002
combined routes, systemic, long-term	N/A	N/A	0.022

### 4.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

#### Guidance to check compliance with the exposure scenario:

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

# Exposure Scenario, 24/07/2019

Substance identity	
Chemical name	propan-2-olo; alcool isopropilico
CAS No.	67-63-0
EINECS No.	200-661-7

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1. **ES 1** Widespread use by professional workers
2. **ES 2** Widespread use by professional workers
3. **ES 3** Consumer use; Various products (PC9b, PC9a, PC3, PC4, PC8)

## 1. ES 1 Widespread use by professional workers

### 1.1 TITLE SECTION

Exposure Scenario name	Use in cleaning agents
Date - Version	24/07/2019 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Industrial uses
Sector(s) of use	Industrial uses (SU3)

#### Worker Contributing Scenario

CS1 Industrial	PROC8a
CS2 Industrial	PROC2
CS3 Industrial	PROC3
CS4 Industrial	PROC8b
CS5 Industrial	PROC4
CS6 Industrial	PROC13
CS7 Industrial	PROC10
CS8 Industrial	PROC7

### 1.2 Conditions of use affecting exposure

#### 1.2. CS1: Worker Contributing Scenario: Industrial (PROC8a)

Process Categories	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)
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#### *Product (article) characteristics*

##### Physical form of product:

Liquid

#### *Amount used, frequency and duration of use/exposure*

##### Duration:

Covers daily exposures up to 8 hours

#### *Technical and organisational conditions and measures*

##### Technical and organisational measures

Clear transfer lines prior to de-coupling.  
Provide extract ventilation to points where emissions occur.

#### *Conditions and measures related to personal protection, hygiene and health evaluation*

##### Personal protection

Wear suitable gloves tested to EN374.

#### *Other conditions affecting worker exposure*

**Temperature:** Covers use at ambient temperatures.

#### 1.2. CS2: Worker Contributing Scenario: Industrial (PROC2)

Process Categories	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)
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#### *Product (article) characteristics*

##### Physical form of product:

Liquid

#### *Amount used, frequency and duration of use/exposure*

<b>Duration:</b> Covers daily exposures up to 8 hours	
<i>Technical and organisational conditions and measures</i>	
<b>Technical and organisational measures</b> Clear transfer lines prior to de-coupling.	
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>	
<b>Personal protection</b> Wear suitable gloves tested to EN374.	
<i>Other conditions affecting worker exposure</i>	
<b>Temperature:</b> Covers use at ambient temperatures.	
<b>1.2. CS3: Worker Contributing Scenario: Industrial (PROC3)</b>	
<b>Process Categories</b>	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)
<i>Product (article) characteristics</i>	
<b>Physical form of product:</b> Liquid	
<i>Amount used, frequency and duration of use/exposure</i>	
<b>Duration:</b> Covers daily exposures up to 8 hours	
<i>Technical and organisational conditions and measures</i>	
<b>Technical and organisational measures</b> Clear transfer lines prior to de-coupling.	
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>	
<b>Personal protection</b> Wear suitable gloves tested to EN374.	
<i>Other conditions affecting worker exposure</i>	
<b>Temperature:</b> Covers use at ambient temperatures.	
<b>1.2. CS4: Worker Contributing Scenario: Industrial (PROC8b)</b>	
<b>Process Categories</b>	Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)
<i>Product (article) characteristics</i>	
<b>Physical form of product:</b> Liquid	
<i>Amount used, frequency and duration of use/exposure</i>	
<b>Duration:</b> Covers daily exposures up to 8 hours	
<i>Technical and organisational conditions and measures</i>	
<b>Technical and organisational measures</b> Clear transfer lines prior to de-coupling.	
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>	
<b>Personal protection</b> Wear suitable gloves tested to EN374.	
<i>Other conditions affecting worker exposure</i>	
<b>Temperature:</b> Covers use at ambient temperatures.	
<b>1.2. CS5: Worker Contributing Scenario: Industrial (PROC4)</b>	
<b>Process Categories</b>	Chemical production where opportunity for exposure arises (PROC4)

<b>Product (article) characteristics</b>	
<b>Physical form of product:</b> Liquid	
<b>Amount used, frequency and duration of use/exposure</b>	
<b>Duration:</b> Covers daily exposures up to 8 hours	
<b>Technical and organisational conditions and measures</b>	
<b>Technical and organisational measures</b> Clear transfer lines prior to de-coupling. Provide extract ventilation to points where emissions occur.	
<b>Conditions and measures related to personal protection, hygiene and health evaluation</b>	
<b>Personal protection</b> Wear suitable gloves tested to EN374.	
<b>Other conditions affecting worker exposure</b>	
<b>Temperature:</b> Covers use at ambient temperatures.	
<b>1.2. CS6: Worker Contributing Scenario: Industrial (PROC13)</b>	
<b>Process Categories</b>	Treatment of articles by dipping and pouring (PROC13)
<b>Product (article) characteristics</b>	
<b>Physical form of product:</b> Liquid	
<b>Amount used, frequency and duration of use/exposure</b>	
<b>Duration:</b> Covers daily exposures up to 8 hours	
<b>Technical and organisational conditions and measures</b>	
<b>Technical and organisational measures</b> Provide extract ventilation to points where emissions occur.	
<b>Conditions and measures related to personal protection, hygiene and health evaluation</b>	
<b>Personal protection</b> Wear suitable gloves tested to EN374.	
<b>Other conditions affecting worker exposure</b>	
<b>Temperature:</b> Covers use at ambient temperatures.	
<b>1.2. CS7: Worker Contributing Scenario: Industrial (PROC10)</b>	
<b>Process Categories</b>	Roller application or brushing (PROC10)
<b>Product (article) characteristics</b>	
<b>Physical form of product:</b> Liquid	
<b>Amount used, frequency and duration of use/exposure</b>	
<b>Duration:</b> Covers daily exposures up to 8 hours	
<b>Conditions and measures related to personal protection, hygiene and health evaluation</b>	
<b>Personal protection</b> Wear suitable gloves tested to EN374.	
<b>Other conditions affecting worker exposure</b>	
<b>Temperature:</b> Covers use at ambient temperatures.	
<b>1.2. CS8: Worker Contributing Scenario: Industrial (PROC7)</b>	



<b>Process Categories</b>	Industrial spraying (PROC7)
<b>Product (article) characteristics</b>	
<b>Physical form of product:</b> Liquid	
<b>Amount used, frequency and duration of use/exposure</b>	
<b>Duration:</b> Covers daily exposures up to 8 hours	
<b>Frequency:</b> Covers exposure up to 4 h/event	
<b>Technical and organisational conditions and measures</b>	
<b>Technical and organisational measures</b> Provide a good standard of controlled ventilation (5 to 10 air changes per hour).	
<b>Conditions and measures related to personal protection, hygiene and health evaluation</b>	
<b>Personal protection</b> Wear suitable gloves tested to EN374. Wear a respirator conforming to EN140.	
<b>Other conditions affecting worker exposure</b>	
<b>Temperature:</b> Covers use at ambient temperatures.	
<b>Ventilation rate:</b> 70 %	

## 1.3 Exposure estimation and reference to its source

### 1.3. CS1: Worker Contributing Scenario: Industrial (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	50 mg/m <sup>3</sup>	N/A	0.246
dermal, systemic, long-term	13.71 mg/m <sup>3</sup>	N/A	0.015
combined routes, systemic, long-term	N/A	N/A	0.261

### 1.3. CS2: Worker Contributing Scenario: Industrial (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	10 mg/m <sup>3</sup>	N/A	0.049
dermal, systemic, long-term	1.37 mg/m <sup>3</sup>	N/A	0.002
combined routes, systemic, long-term	N/A	N/A	0.051

### 1.3. CS3: Worker Contributing Scenario: Industrial (PROC3)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	25 mg/m <sup>3</sup>	N/A	0.123
dermal, systemic, long-term	0.34 mg/m <sup>3</sup>	N/A	0
combined routes, systemic, long-term	N/A	N/A	0.123

### 1.3. CS4: Worker Contributing Scenario: Industrial (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	50 mg/m <sup>3</sup>	N/A	0.246
dermal, systemic, long-term	6.86 mg/m <sup>3</sup>	N/A	0.008
combined routes, systemic, long-term	N/A	N/A	0.254

### 1.3. CS5: Worker Contributing Scenario: Industrial (PROC4)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	100 mg/m <sup>3</sup>	N/A	0.492
dermal, systemic, long-term	6.86 mg/m <sup>3</sup>	N/A	0.008
combined routes, systemic, long-term	N/A	N/A	0.5

### 1.3. CS6: Worker Contributing Scenario: Industrial (PROC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	50 mg/m <sup>3</sup>	N/A	0.246
dermal, systemic, long-term	13.71 mg/m <sup>3</sup>	N/A	0.015
combined routes, systemic, long-term	N/A	N/A	0.261

### 1.3. CS7: Worker Contributing Scenario: Industrial (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	50 mg/m <sup>3</sup>	N/A	0.246
dermal, systemic, long-term	27.43 mg/m <sup>3</sup>	N/A	0.031
combined routes, systemic, long-term	N/A	N/A	0.277

### 1.3. CS8: Worker Contributing Scenario: Industrial (PROC7)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	50 mg/m <sup>3</sup>	N/A	0.246
dermal, systemic, long-term	27.43 mg/m <sup>3</sup>	N/A	0.031

combined routes, systemic, long-term	N/A	N/A	0.277
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## 1.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**Guidance to check compliance with the exposure scenario:**  
Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

## 2. ES 2 Widespread use by professional workers

### 2.1 TITLE SECTION

Exposure Scenario name	Use in cleaning agents
Date - Version	24/07/2019 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)

#### Worker Contributing Scenario

CS1 General use from professional operators	PROC8b
CS2 General use from professional operators	PROC2
CS3 General use from professional operators	PROC3
CS4 General use from professional operators	PROC4
CS5 General use from professional operators	PROC8a
CS6 General use from professional operators	PROC13
CS7 General use from professional operators	PROC10
CS8 General use from professional operators	PROC11
CS9 General use from professional operators	PROC11
CS10 General use from professional operators	PROC10
CS11 General use from professional operators	PROC10
CS12 General use from professional operators	PROC4

### 2.2 Conditions of use affecting exposure

#### 2.2. CS1: Worker Contributing Scenario: General use from professional operators (PROC8b)

Process Categories	Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)
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#### *Product (article) characteristics*

##### Physical form of product:

Liquid

#### *Amount used, frequency and duration of use/exposure*

##### Duration:

Covers daily exposures up to 8 hours

#### *Conditions and measures related to personal protection, hygiene and health evaluation*

##### Personal protection

Wear suitable gloves tested to EN374.

#### *Other conditions affecting worker exposure*

**Temperature:** Covers use at ambient temperatures.

#### 2.2. CS2: Worker Contributing Scenario: General use from professional operators (PROC2)

Process Categories	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)
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#### *Product (article) characteristics*

<b>Physical form of product:</b> Liquid	
<i>Amount used, frequency and duration of use/exposure</i>	
<b>Duration:</b> Covers daily exposures up to 8 hours	
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>	
<b>Personal protection</b> Wear suitable gloves tested to EN374.	
<i>Other conditions affecting worker exposure</i>	
<b>Temperature:</b> Covers use at ambient temperatures.	
<b>2.2. CS3: Worker Contributing Scenario: General use from professional operators (PROC3)</b>	
<b>Process Categories</b>	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)
<i>Product (article) characteristics</i>	
<b>Physical form of product:</b> Liquid	
<i>Amount used, frequency and duration of use/exposure</i>	
<b>Duration:</b> Covers daily exposures up to 8 hours	
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>	
<b>Personal protection</b> Wear suitable gloves tested to EN374.	
<i>Other conditions affecting worker exposure</i>	
<b>Temperature:</b> Covers use at ambient temperatures.	
<b>2.2. CS4: Worker Contributing Scenario: General use from professional operators (PROC4)</b>	
<b>Process Categories</b>	Chemical production where opportunity for exposure arises (PROC4)
<i>Product (article) characteristics</i>	
<b>Physical form of product:</b> Liquid	
<i>Amount used, frequency and duration of use/exposure</i>	
<b>Duration:</b> Covers daily exposures up to 8 hours	
<i>Technical and organisational conditions and measures</i>	
<b>Technical and organisational measures</b> Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.	
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>	
<b>Personal protection</b> Wear suitable gloves tested to EN374.	
<i>Other conditions affecting worker exposure</i>	
<b>Temperature:</b> Covers use at ambient temperatures.	
<b>2.2. CS5: Worker Contributing Scenario: General use from professional operators (PROC8a)</b>	
<b>Process Categories</b>	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)
<i>Product (article) characteristics</i>	
<b>Physical form of product:</b> Liquid	

*Amount used, frequency and duration of use/exposure*

**Duration:**

Covers daily exposures up to 8 hours

*Technical and organisational conditions and measures*

**Technical and organisational measures**

Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

*Conditions and measures related to personal protection, hygiene and health evaluation*

**Personal protection**

Wear suitable gloves tested to EN374.

*Other conditions affecting worker exposure*

**Temperature:** Covers use at ambient temperatures.

**2.2. CS6: Worker Contributing Scenario: General use from professional operators (PROC13)**

**Process Categories**

Treatment of articles by dipping and pouring (PROC13)

*Product (article) characteristics*

**Physical form of product:**

Liquid

*Amount used, frequency and duration of use/exposure*

**Duration:**

Covers daily exposures up to 8 hours

*Technical and organisational conditions and measures*

**Technical and organisational measures**

Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

*Conditions and measures related to personal protection, hygiene and health evaluation*

**Personal protection**

Wear suitable gloves tested to EN374.

*Other conditions affecting worker exposure*

**Temperature:** Covers use at ambient temperatures.

**2.2. CS7: Worker Contributing Scenario: General use from professional operators (PROC10)**

**Process Categories**

Roller application or brushing (PROC10)

*Product (article) characteristics*

**Physical form of product:**

Liquid

*Amount used, frequency and duration of use/exposure*

**Duration:**

Covers daily exposures up to 8 hours

*Technical and organisational conditions and measures*

**Technical and organisational measures**

Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

*Conditions and measures related to personal protection, hygiene and health evaluation*

**Personal protection**

Wear suitable gloves tested to EN374.

*Other conditions affecting worker exposure*

**Temperature:** Covers use at ambient temperatures.

**2.2. CS8: Worker Contributing Scenario: General use from professional operators (PROC11)**

<b>Process Categories</b>	Non industrial spraying (PROC11)
<b><i>Product (article) characteristics</i></b>	
<b>Physical form of product:</b> Liquid	
<b>Concentration of substance in product:</b> Covers percentage substance in the product up to 5 %.	
<b><i>Amount used, frequency and duration of use/exposure</i></b>	
<b>Duration:</b> Covers daily exposures up to 8 hours	
<b><i>Technical and organisational conditions and measures</i></b>	
<b>Technical and organisational measures</b> Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.	
<b><i>Conditions and measures related to personal protection, hygiene and health evaluation</i></b>	
<b>Personal protection</b> Wear suitable gloves tested to EN374.	
<b><i>Other conditions affecting worker exposure</i></b>	
<b>Temperature:</b> Covers use at ambient temperatures. <b>Ventilation rate:</b> 30 %	
<b>2.2. CS9: Worker Contributing Scenario: General use from professional operators (PROC11)</b>	
<b>Process Categories</b>	Non industrial spraying (PROC11)
<b><i>Product (article) characteristics</i></b>	
<b>Physical form of product:</b> Liquid	
<b>Concentration of substance in product:</b> Covers concentrations up to 1 %	
<b><i>Amount used, frequency and duration of use/exposure</i></b>	
<b>Duration:</b> Covers daily exposures up to 8 hours	
<b><i>Technical and organisational conditions and measures</i></b>	
<b>Technical and organisational measures</b> Provide extract ventilation to material transfer points and other openings.	
<b><i>Conditions and measures related to personal protection, hygiene and health evaluation</i></b>	
<b>Personal protection</b> Wear suitable gloves tested to EN374.	
<b><i>Other conditions affecting worker exposure</i></b>	
<b>Temperature:</b> Covers use at ambient temperatures. <b>Ventilation rate:</b> Provide forced ventilation 70 %	
<b>2.2. CS10: Worker Contributing Scenario: General use from professional operators (PROC10)</b>	
<b>Process Categories</b>	Roller application or brushing (PROC10)
<b><i>Product (article) characteristics</i></b>	
<b>Physical form of product:</b> Liquid	
<b><i>Amount used, frequency and duration of use/exposure</i></b>	
<b>Duration:</b> Covers daily exposures up to 8 hours	

### *Technical and organisational conditions and measures*

#### **Technical and organisational measures**

Provide extract ventilation to material transfer points and other openings.

### *Conditions and measures related to personal protection, hygiene and health evaluation*

#### **Personal protection**

Wear suitable gloves tested to EN374.

### *Other conditions affecting worker exposure*

**Temperature:** Covers use at ambient temperatures.

## **2.2. CS11: Worker Contributing Scenario: General use from professional operators (PROC10)**

#### **Process Categories**

Roller application or brushing (PROC10)

### *Product (article) characteristics*

#### **Physical form of product:**

Liquid

#### **Concentration of substance in product:**

Covers percentage substance in the product up to 25 %.

### *Amount used, frequency and duration of use/exposure*

#### **Duration:**

Covers daily exposures up to 8 hours

### *Technical and organisational conditions and measures*

#### **Technical and organisational measures**

Provide extract ventilation to points where emissions occur.

### *Conditions and measures related to personal protection, hygiene and health evaluation*

#### **Personal protection**

Wear suitable gloves tested to EN374.

### *Other conditions affecting worker exposure*

**Temperature:** Covers use at ambient temperatures.

## **2.2. CS12: Worker Contributing Scenario: General use from professional operators (PROC4)**

#### **Process Categories**

Chemical production where opportunity for exposure arises (PROC4)

### *Product (article) characteristics*

#### **Physical form of product:**

Liquid

### *Amount used, frequency and duration of use/exposure*

#### **Duration:**

Covers daily exposures up to 8 hours

### *Conditions and measures related to personal protection, hygiene and health evaluation*

#### **Personal protection**

Wear suitable gloves tested to EN374.

### *Other conditions affecting worker exposure*

**Temperature:** Covers use at ambient temperatures.

## **2.3 Exposure estimation and reference to its source**

### **2.3. CS1: Worker Contributing Scenario: General use from professional operators (PROC8b)**

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
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inhalative, systemic, long-term	50 mg/m <sup>3</sup>	N/A	0.246
dermal, systemic, long-term	13.71 mg/kg bw/day	N/A	0.015
combined routes, systemic, long-term	N/A	N/A	0.261

### 2.3. CS2: Worker Contributing Scenario: General use from professional operators (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	20 mg/m <sup>3</sup>	N/A	0.098
dermal, systemic, long-term	1.37 mg/kg bw/day	N/A	0.002
combined routes, systemic, long-term	N/A	N/A	0.1

### 2.3. CS3: Worker Contributing Scenario: General use from professional operators (PROC3)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	25 mg/m <sup>3</sup>	N/A	0.123
dermal, systemic, long-term	0.34 mg/kg bw/day	N/A	0
combined routes, systemic, long-term	N/A	N/A	0.123

### 2.3. CS4: Worker Contributing Scenario: General use from professional operators (PROC4)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	50 mg/m <sup>3</sup>	N/A	0.246
dermal, systemic, long-term	6.84 mg/kg bw/day	N/A	0.008
combined routes, systemic, long-term	N/A	N/A	0.254

### 2.3. CS5: Worker Contributing Scenario: General use from professional operators (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	100 mg/m <sup>3</sup>	N/A	0.492
dermal, systemic, long-term	13.71 mg/kg bw/day	N/A	0.015
combined routes, systemic, long-term	N/A	N/A	0.507

### 2.3. CS6: Worker Contributing Scenario: General use from professional operators (PROC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
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inhalative, systemic, long-term	100 mg/m <sup>3</sup>	N/A	0.492
dermal, systemic, long-term	13.71 mg/kg bw/day	N/A	0.015
combined routes, systemic, long-term	N/A	N/A	0.507

### 2.3. CS7: Worker Contributing Scenario: General use from professional operators (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	100 mg/m <sup>3</sup>	N/A	0.492
dermal, systemic, long-term	27.5 mg/kg bw/day	N/A	0.031
combined routes, systemic, long-term	N/A	N/A	0.523

### 2.3. CS8: Worker Contributing Scenario: General use from professional operators (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	150 mg/m <sup>3</sup>	N/A	0.737
dermal, systemic, long-term	107.14 mg/kg bw/day	N/A	0.121
combined routes, systemic, long-term	N/A	N/A	0.858

### 2.3. CS9: Worker Contributing Scenario: General use from professional operators (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	35 mg/m <sup>3</sup>	N/A	0.172
dermal, systemic, long-term	107.14 mg/kg bw/day	N/A	0.121
combined routes, systemic, long-term	N/A	N/A	0.293

### 2.3. CS10: Worker Contributing Scenario: General use from professional operators (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	100 mg/m <sup>3</sup>	N/A	0.492
dermal, systemic, long-term	27.43 mg/kg bw/day	N/A	0.031
combined routes, systemic, long-term	N/A	N/A	0.523

### 2.3. CS11: Worker Contributing Scenario: General use from professional operators (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
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inhalative, systemic, long-term	100 mg/m <sup>3</sup>	N/A	0.492
dermal, systemic, long-term	27.43 mg/kg bw/day	N/A	0.031
combined routes, systemic, long-term	N/A	N/A	0.523

### 2.3. CS12: Worker Contributing Scenario: General use from professional operators (PROC4)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	50 mg/m <sup>3</sup>	N/A	0.246
dermal, systemic, long-term	6.86 mg/kg bw/day	N/A	0.008
combined routes, systemic, long-term	N/A	N/A	0.254

### 2.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

#### Guidance to check compliance with the exposure scenario:

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

### 3. ES 3 Consumer use; Various products (PC9b, PC9a, PC3, PC4, PC8)

#### 3.1 TITLE SECTION

Exposure Scenario name	Cleaning agent
Date - Version	24/07/2019 - 1.0
Life Cycle Stage	Consumer use
Main user group	Consumer uses
Sector(s) of use	Consumer uses (SU21)
Product Categories	Fillers, putties, plasters, modelling clay (PC9b) - Coatings and paints, thinners, paint removers (PC9a) - Air care products (PC3) - Anti-freeze and de-icing products (PC4) - Biocidal products (PC8) - Lubricants, greases, release products (PC24) - Washing and cleaning products (PC35) - Welding and soldering products, flux products (PC38)

#### Consumer Contributing Scenario

CS1 Consumer	PC3
CS2 Consumer	PC3
CS3 Consumer	PC4
CS4 Consumer	PC4
CS5 Consumer	PC4
CS6 Consumer	PC8
CS7 Consumer	PC8
CS8 Consumer	PC8
CS9 Consumer	PC9a
CS10 Consumer	PC9a
CS11 Consumer	PC9a
CS12 Consumer	PC9a
CS13 Consumer	PC9b
CS14 Consumer	PC9b
CS15 Consumer	PC9b
CS16 Consumer	PC9c
CS17 Consumer	PC24
CS18 Consumer	PC24
CS19 Consumer	PC24
CS20 Consumer	PC35
CS21 Consumer	PC35
CS22 Consumer	PC35
CS23 Consumer	PC35

#### 3.2 Conditions of use affecting exposure

### 3.2. CS1: Consumer Contributing Scenario: Consumer (PC3)

**Product Categories** Air care products (PC3)

#### *Product (article) characteristics*

**Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers concentrations up to 50 %

#### *Amount used, frequency and duration of use/exposure*

**Amounts used:**

Amount per use 0.5 g

**Frequency:**

Use frequency 365 days per year

**Frequency:**

1 events per day

#### *Other conditions affecting consumers exposure*

**Additional conditions human health**

Covers skin contact area up to 428 cm<sup>2</sup>

### 3.2. CS2: Consumer Contributing Scenario: Consumer (PC3)

**Product Categories** Air care products (PC3)

#### *Product (article) characteristics*

**Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers concentrations up to 50 %

#### *Amount used, frequency and duration of use/exposure*

**Amounts used:**

Amount per use 0.5 g

**Frequency:**

Use frequency 365 days per year

**Frequency:**

1 events per day

#### *Other conditions affecting consumers exposure*

**Additional conditions human health**

Covers skin contact area up to 37.5 cm<sup>2</sup>

### 3.2. CS3: Consumer Contributing Scenario: Consumer (PC4)

**Product Categories** Anti-freeze and de-icing products (PC4)

#### *Product (article) characteristics*

**Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers concentrations up to 50 %

#### *Amount used, frequency and duration of use/exposure*

**Amounts used:**

Amount per use 0.5 g

**Frequency:**

Use frequency 365 days per year

**Frequency:**

1 events per day

***Other conditions affecting consumers exposure*****Room size:** Covers use in a one car garage (>34 m<sup>3</sup>) under typical ventilation.**3.2. CS4: Consumer Contributing Scenario: Consumer (PC4)****Product Categories**

Anti-freeze and de-icing products (PC4)

***Product (article) characteristics*****Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers concentrations up to 50 %

***Amount used, frequency and duration of use/exposure*****Frequency:**

Use frequency 365 days per year

**Frequency:**

1 events per day

***Other conditions affecting consumers exposure*****Additional conditions human health**Covers skin contact area up to 420 cm<sup>2</sup>**3.2. CS5: Consumer Contributing Scenario: Consumer (PC4)****Product Categories**

Anti-freeze and de-icing products (PC4)

***Product (article) characteristics*****Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers concentrations up to 50 %

***Amount used, frequency and duration of use/exposure*****Frequency:**

Use frequency 365 days per year

**Frequency:**

1 events per day

***Other conditions affecting consumers exposure*****Additional conditions human health**Covers skin contact area up to 214.4 cm<sup>2</sup>**3.2. CS6: Consumer Contributing Scenario: Consumer (PC8)****Product Categories**

Biocidal products (PC8)

***Product (article) characteristics*****Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers concentrations up to 50 %

***Amount used, frequency and duration of use/exposure*****Frequency:**

Use frequency 365 days per year

**Frequency:**

1 events per day

***Other conditions affecting consumers exposure*****Additional conditions human health**Covers skin contact area up to 857.5 cm<sup>2</sup>**3.2. CS7: Consumer Contributing Scenario: Consumer (PC8)****Product Categories**

Biocidal products (PC8)

***Product (article) characteristics*****Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers concentrations up to 50 %

***Amount used, frequency and duration of use/exposure*****Frequency:**

Use frequency 365 days per year

**Frequency:**

1 events per day

***Other conditions affecting consumers exposure*****Additional conditions human health**Covers skin contact area up to 857.5 cm<sup>2</sup>**3.2. CS8: Consumer Contributing Scenario: Consumer (PC8)****Product Categories**

Biocidal products (PC8)

***Product (article) characteristics*****Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers concentrations up to 50 %

***Amount used, frequency and duration of use/exposure*****Frequency:**

Use frequency 365 days per year

**Frequency:**

1 events per day

***Other conditions affecting consumers exposure*****Additional conditions human health**Covers skin contact area up to 428 cm<sup>2</sup>**3.2. CS9: Consumer Contributing Scenario: Consumer (PC9a)****Product Categories**

Coatings and paints, thinners, paint removers (PC9a)

***Product (article) characteristics***

**Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers concentrations up to 50 %

*Amount used, frequency and duration of use/exposure***Amounts used:**

Amount per use 27 g

**Frequency:**

Use frequency 4 days per year

**Frequency:**

1 events per day

*Other conditions affecting consumers exposure***Additional conditions human health**Covers skin contact area up to 428.75 cm<sup>2</sup>**3.2. CS10: Consumer Contributing Scenario: Consumer (PC9a)****Product Categories**

Coatings and paints, thinners, paint removers (PC9a)

*Product (article) characteristics***Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers concentrations up to 50 %

*Amount used, frequency and duration of use/exposure***Amounts used:**

Amount per use 74 g

**Frequency:**

Use frequency 6 days per year

**Frequency:**

1 events per day

*Other conditions affecting consumers exposure***Additional conditions human health**Covers skin contact area up to 428.75 cm<sup>2</sup>**3.2. CS11: Consumer Contributing Scenario: Consumer (PC9a)****Product Categories**

Coatings and paints, thinners, paint removers (PC9a)

*Product (article) characteristics***Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers concentrations up to 50 %

*Amount used, frequency and duration of use/exposure***Amounts used:**

Amount per use 215 g

**Frequency:**

Use frequency 2 days per year



**Frequency:**

1 events per day

*Other conditions affecting consumers exposure***Room size:** Covers use in a one car garage (>34 m<sup>3</sup>) under typical ventilation.**3.2. CS12: Consumer Contributing Scenario: Consumer (PC9a)****Product Categories**

Coatings and paints, thinners, paint removers (PC9a)

*Product (article) characteristics***Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers concentrations up to 50 %

*Amount used, frequency and duration of use/exposure***Amounts used:**

Amount per use 49 g

**Frequency:**

Use frequency 3 days per year

**Frequency:**

1 events per day

*Other conditions affecting consumers exposure***Additional conditions human health**Covers skin contact area up to 857.5 cm<sup>2</sup>**3.2. CS13: Consumer Contributing Scenario: Consumer (PC9b)****Product Categories**

Fillers, putties, plasters, modelling clay (PC9b)

*Product (article) characteristics***Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers concentrations up to 20 %

*Amount used, frequency and duration of use/exposure***Amounts used:**

Amount per use 85 g

**Frequency:**

Use frequency 12 days per year

**Frequency:**

1 events per day

*Other conditions affecting consumers exposure***Additional conditions human health**Covers skin contact area up to 37.5 cm<sup>2</sup>**3.2. CS14: Consumer Contributing Scenario: Consumer (PC9b)****Product Categories**

Fillers, putties, plasters, modelling clay (PC9b)

*Product (article) characteristics*

**Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers concentrations up to 2 %

*Amount used, frequency and duration of use/exposure***Amounts used:**

Amount per use 13 g

**Frequency:**

Use frequency 12 days per year

**Frequency:**

1 events per day

*Other conditions affecting consumers exposure***Additional conditions human health**Covers skin contact area up to 37.5 cm<sup>2</sup>**3.2. CS15: Consumer Contributing Scenario: Consumer (PC9b)****Product Categories**

Fillers, putties, plasters, modelling clay (PC9b)

*Product (article) characteristics***Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers concentrations up to 20 %

*Amount used, frequency and duration of use/exposure***Frequency:**

Use frequency 365 days per year

**Frequency:**

1 events per day

*Other conditions affecting consumers exposure***Additional conditions human health**Covers skin contact area up to 254.5 cm<sup>2</sup>**3.2. CS16: Consumer Contributing Scenario: Consumer****Product (Sub-)Categories**

Finger paints (PC9c)

*Product (article) characteristics***Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers concentrations up to 20 %

*Amount used, frequency and duration of use/exposure***Frequency:**

Use frequency 365 days per year

**Frequency:**

1 events per day

*Other conditions affecting consumers exposure***Additional conditions human health**Covers skin contact area up to 254.5 cm<sup>2</sup>

### 3.2. CS17: Consumer Contributing Scenario: Consumer (PC24)

**Product Categories** Lubricants, greases, release products (PC24)

#### *Product (article) characteristics*

**Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

#### *Amount used, frequency and duration of use/exposure*

**Amounts used:**

Amount per use 2 g

**Frequency:**

Use frequency 4 days per year

**Frequency:**

1 events per day

#### *Other conditions affecting consumers exposure*

**Additional conditions human health**

Covers skin contact area up to 468 cm<sup>2</sup>

### 3.2. CS18: Consumer Contributing Scenario: Consumer (PC24)

**Product Categories** Lubricants, greases, release products (PC24)

#### *Product (article) characteristics*

**Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers concentrations up to 20 %

#### *Amount used, frequency and duration of use/exposure*

**Amounts used:**

Amount per use 3 g

**Frequency:**

Use frequency 10 days per year

**Frequency:**

1 events per day

#### *Other conditions affecting consumers exposure*

**Additional conditions human health**

Covers skin contact area up to 468 cm<sup>2</sup>

### 3.2. CS19: Consumer Contributing Scenario: Consumer (PC24)

**Product Categories** Lubricants, greases, release products (PC24)

#### *Product (article) characteristics*

**Physical form of product:**

Liquid

#### *Amount used, frequency and duration of use/exposure*

**Amounts used:**

Amount per use 73 g

**Frequency:**

Use frequency 6 days per year

**Frequency:**

1 events per day

*Other conditions affecting consumers exposure***Additional conditions human health**Covers skin contact area up to 428.75 cm<sup>2</sup>**3.2. CS20: Consumer Contributing Scenario: Consumer (PC35)****Product Categories**

Washing and cleaning products (PC35)

*Product (article) characteristics***Physical form of product:**

Liquid

*Amount used, frequency and duration of use/exposure***Frequency:**

Use frequency 6 days per year

**Frequency:**

1 events per day

*Other conditions affecting consumers exposure***Additional conditions human health**Covers skin contact area up to 857.5 cm<sup>2</sup>**3.2. CS21: Consumer Contributing Scenario: Consumer (PC35)****Product Categories**

Washing and cleaning products (PC35)

*Product (article) characteristics***Physical form of product:**

Liquid

*Amount used, frequency and duration of use/exposure***Frequency:**

Use frequency 128 days per year

**Frequency:**

1 events per day

*Other conditions affecting consumers exposure***Additional conditions human health**Covers skin contact area up to 857.5 cm<sup>2</sup>**3.2. CS22: Consumer Contributing Scenario: Consumer (PC35)****Product Categories**

Washing and cleaning products (PC35)

*Product (article) characteristics***Physical form of product:**

Liquid

*Amount used, frequency and duration of use/exposure***Frequency:**

Use frequency 128 days per year

**Frequency:**

1 events per day

*Other conditions affecting consumers exposure*

**Additional conditions human health**Covers skin contact area up to 428 cm<sup>2</sup>**3.2. CS23: Consumer Contributing Scenario: Consumer (PC35)****Product Categories** Washing and cleaning products (PC35)*Product (article) characteristics***Physical form of product:**

Liquid

*Amount used, frequency and duration of use/exposure***Amounts used:**

Amount per use 12 g

**Frequency:**

Use frequency 365 days per year

**Frequency:**

1 events per day

*Other conditions affecting consumers exposure***Room size:** Covers use in room size of 20 m<sup>3</sup>**3.3 Exposure estimation and reference to its source****3.2. CS1: Consumer Contributing Scenario: Consumer (PC3)**

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.1 mg/m <sup>3</sup>	N/A	0.001
dermal, systemic, long-term	142.67 mg/kg bw/day	N/A	0.447
combined routes, systemic, long-term	N/A	N/A	0.448

**3.2. CS2: Consumer Contributing Scenario: Consumer (PC3)**

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.83 mg/m <sup>3</sup>	N/A	0.009
dermal, systemic, long-term	N/A	N/A	0
combined routes, systemic, long-term	N/A	N/A	0.009

**3.2. CS3: Consumer Contributing Scenario: Consumer (PC4)**

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.01 mg/m <sup>3</sup>	N/A	0
dermal, systemic, long-term	N/A	N/A	0
combined routes, systemic, long-term	N/A	N/A	0

### 3.2. CS4: Consumer Contributing Scenario: Consumer (PC4)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	9.04 mg/m <sup>3</sup>	N/A	0.102
dermal, systemic, long-term	35.67 mg/kg bw/day	N/A	0.112
combined routes, systemic, long-term	N/A	N/A	0.214

### 3.2. CS5: Consumer Contributing Scenario: Consumer (PC4)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.51 mg/m <sup>3</sup>	N/A	0.006
dermal, systemic, long-term	17.87 mg/kg bw/day	N/A	0.056
combined routes, systemic, long-term	N/A	N/A	0.177

### 3.2. CS6: Consumer Contributing Scenario: Consumer (PC8)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	6.75 mg/m <sup>3</sup>	N/A	0.076
dermal, systemic, long-term	0.71 mg/kg bw/day	N/A	0.002
combined routes, systemic, long-term	N/A	N/A	0.078

### 3.2. CS7: Consumer Contributing Scenario: Consumer (PC8)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	8.42 mg/m <sup>3</sup>	N/A	0.095
dermal, systemic, long-term	71.46 mg/kg bw/day	N/A	0.224
combined routes, systemic, long-term	N/A	N/A	0.319

### 3.2. CS8: Consumer Contributing Scenario: Consumer (PC8)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	5.78 mg/m <sup>3</sup>	N/A	0.065
dermal, systemic, long-term	35.87 mg/kg bw/day	N/A	0.112
combined routes, systemic, long-term	N/A	N/A	0.177

### 3.2. CS9: Consumer Contributing Scenario: Consumer (PC9a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	38.53 mg/m <sup>3</sup>	N/A	0.433
dermal, systemic, long-term	0.39 mg/kg bw/day	N/A	0.001
combined routes, systemic, long-term	N/A	N/A	0.434

### 3.2. CS10: Consumer Contributing Scenario: Consumer (PC9a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	15.15 mg/m <sup>3</sup>	N/A	0.17
dermal, systemic, long-term	0.57 mg/kg bw/day	N/A	0.002
combined routes, systemic, long-term	N/A	N/A	0.172

### 3.2. CS11: Consumer Contributing Scenario: Consumer (PC9a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	34.29 mg/m <sup>3</sup>	N/A	0.385
dermal, systemic, long-term	0 mg/kg bw/day	N/A	0
combined routes, systemic, long-term	N/A	N/A	0.385

### 3.2. CS12: Consumer Contributing Scenario: Consumer (PC9a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	4.9 mg/m <sup>3</sup>	N/A	0.055
dermal, systemic, long-term	0.59 mg/kg bw/day	N/A	0.002
combined routes, systemic, long-term	N/A	N/A	0.057

### 3.2. CS13: Consumer Contributing Scenario: Consumer (PC9b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	53.63 mg/m <sup>3</sup>	N/A	0.603
dermal, systemic, long-term	1.19 mg/kg bw/day	N/A	0.004
combined routes, systemic, long-term	N/A	N/A	0.607

### 3.2. CS14: Consumer Contributing Scenario: Consumer (PC9b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	22.02 mg/m <sup>3</sup>	N/A	0.247
dermal, systemic, long-term	0.09 mg/kg bw/day	N/A	0
combined routes, systemic, long-term	N/A	N/A	0.247

### 3.2. CS15: Consumer Contributing Scenario: Consumer (PC9b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
oral, systemic, long-term	20 mg/kg bw/day	N/A	0.769
dermal, systemic, long-term	2.54 mg/kg bw/day	N/A	0.008
combined routes, systemic, long-term	N/A	N/A	0.777

### 3.2. CS16: Consumer Contributing Scenario: Consumer

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
oral, systemic, long-term	20.25 mg/kg bw/day	N/A	0.779
dermal, systemic, long-term	38.16 mg/kg bw/day	N/A	0.12
combined routes, systemic, long-term	N/A	N/A	0.899

### 3.2. CS17: Consumer Contributing Scenario: Consumer (PC24)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	3.98 mg/m <sup>3</sup>	N/A	0.045
dermal, systemic, long-term	78 mg/kg bw/day	N/A	0.245
combined routes, systemic, long-term	N/A	N/A	0.29

### 3.2. CS18: Consumer Contributing Scenario: Consumer (PC24)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0 mg/m <sup>3</sup>	N/A	0
dermal, systemic, long-term	15.6 mg/kg bw/day	N/A	0.049
combined routes, systemic, long-term	N/A	N/A	0.049



### 3.2. CS19: Consumer Contributing Scenario: Consumer (PC24)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	12.06 mg/m <sup>3</sup>	N/A	0.136
dermal, systemic, long-term	35.73 mg/kg bw/day	N/A	0.112
combined routes, systemic, long-term	N/A	N/A	0.29

### 3.2. CS20: Consumer Contributing Scenario: Consumer (PC35)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.75 mg/m <sup>3</sup>	N/A	0.008
dermal, systemic, long-term	0.71 mg/kg bw/day	N/A	0.002
combined routes, systemic, long-term	N/A	N/A	0.01

### 3.2. CS21: Consumer Contributing Scenario: Consumer (PC35)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	8.42 mg/m <sup>3</sup>	N/A	0.095
dermal, systemic, long-term	71.46 mg/kg bw/day	N/A	0.224
combined routes, systemic, long-term	N/A	N/A	0.319

### 3.2. CS22: Consumer Contributing Scenario: Consumer (PC35)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	5.78 mg/m <sup>3</sup>	N/A	0.065
dermal, systemic, long-term	35.67 mg/kg bw/day	N/A	0.112
combined routes, systemic, long-term	N/A	N/A	0.177

### 3.2. CS23: Consumer Contributing Scenario: Consumer (PC35)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	9.4 mg/m <sup>3</sup>	N/A	0.106
dermal, systemic, long-term	0 mg/kg bw/day	N/A	0
combined routes, systemic, long-term	N/A	N/A	0.106

## 3.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

### **Guidance to check compliance with the exposure scenario:**

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