SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form	: Substance
Name	: DIMETHYLETHER
Chemical name	: dimethyl ether
EC Index-No.	: 603-019-00-8
EC-No.	: 204-065-8
CAS-No.	: 115-10-6
REACH registration No	: 01-2119472128-37
Product code	: 101304500
Synonyms	: Novaspray DME

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Use of the substance/mixture : Aerosol jet

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier

Dehon Service SAS
26 Avenue du Petit Parc
94683 VINCENNES Cedex - France
T 01 43 98 75 00 - F 01 43 98 21 51
ContactFDS@climalife.dehon.com

Other

Climalife Hongrie Kft
Villányi út 47
1118 Budaörs - Hungary
T (36) 23 431 660 - F (36) 23 431 661
ContactFDS@climalife.dehon.com

Other

Climalife Kft Budepesta sucurcala Bucuresti Romania
Bulevardul Hristo Botev, Nr. 28,
Biroul NR 4, Modulul I
Bucuresti Sectorul 3 - Romania
ContactFDS@climalife.dehon.com

Other

Climalife Supplied by Inventec Performance Chemicals Italia SRL
Via del Lavoro, 10/G
20874 Busnago MB - Italia
T +39 39-5973480 - F +39 39-5973490
ContactFDS@climalife.dehon.com

Other

Dehon Kälte-Fachvertriebs GmbH
Robert-Bosch-Strasse 14
40668 MEERBUSCH - Germany
T 00 49 2150 7073 0 - F 00 49 2150 7073 17
ContactFDS@climalife.dehon.com

Other

Dehon nordic service
Östra Hamngatan 50B 3tr
41109 GÖTEBORG - Sweden
T 00 46 44 21 58 80 - F 00 46 44 21 58 80
ContactFDS@climalife.dehon.com

Other

Dehon Service Belgium s.a/n.v.
Avenue Carton de Wiart, 79
1090 Bruxelles - Belgium
T 00 32 2 421 01 70 - F 00 32 2 426 96 62
ContactFDS@climalife.dehon.com

Other

Dehon Service Nerderland B.V.
Van Konijnenburgweg 84
NL-4612 PL Bergen Op Zoom - Netherlands
T 00 31 164 212 830 - F 00 31 164 212 831
ContactFDS@climalife.dehon.com

Other

Friogas sa
Poligono Industrial SEPES
Parcela 10
46500 SAGUNTO (Valencia) - Spain
T 00 34 9 6 266 36 32 - F 00 34 9 6 266 50 25
ContactFDS@climalife.dehon.com

Other

Galco s.a/n.v.
Avenue Carton de Wiart, 79
1090 BRUSSELS - Belgium
T 00 32 2 421 01 84 - F 00 32 2 421 01 84 / 00 32 2 425 38 12
ContactFDS@climalife.dehon.com

Other

Prochimac SA
Rue du Château 10
CH-2000 NEUCHATEL - Switzerland
T 00 41 32 727 36 00 - F 00 41 32 727 36 19
ContactFDS@climalife.dehon.com

Other

IDS Refrigeration Limited
22 Apex Court, Woodlands, Bradley Stoke
BS32 4JT Bristol - United Kingdom
T 00 44 1179 802520 - F 00 44 1179 802521
ContactFDS@climalife.dehon.com

1.4. Emergency telephone number

Emergency number : +33 (0) 1 72 11 00 03

Country	Organisation/Company	Address	Emergency number	Comment
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH Birmingham	0344 892 0111	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Press. Gas (Liq.) H280

Full text of hazard classes and H-statements : see section 16

Adverse physicochemical, human health and environmental effects

Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing. Contact with the liquid may cause frostbite and serious damage to eyes.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

GHS02

Signal word (CLP) : Danger

Hazard statements (CLP) : H220 - Extremely flammable gas.
H280 - Contains gas under pressure; may explode if heated.

Precautionary statements (CLP) : P210 - Keep away from heat, hot surfaces, sparks, open flames. No smoking.
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 - In case of leakage, eliminate all ignition sources.
P410+P403 - Protect from sunlight. Store in a well-ventilated place.

2.3. Other hazards

Other hazards not contributing to the classification : Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

PBT: not relevant – no registration required

vPvB: not relevant – no registration required

SECTION 3: Composition/information on ingredients

3.1. Substances

Name : DIMETHYLETHER

CAS-No. : 115-10-6

EC-No. : 204-065-8

EC Index-No. : 603-019-00-8

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
dimethyl ether	(CAS-No.) 115-10-6 (EC-No.) 204-065-8 (EC Index-No.) 603-019-00-8 (REACH-no) 01-2119472128-37	100	Press. Gas (Liq.), H280

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Move the affected person away from the contaminated area and into the fresh air. If you feel unwell, seek medical advice.

First-aid measures after skin contact : In the event of contact with the liquid: treat resulting frostbite as a burn. Immediately remove contaminated clothing or footwear. Rinse with plenty of water. If skin burns appear, call a doctor immediately.

First-aid measures after eye contact : Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 minutes minimum). Consult an eye specialist immediately, even if there are no immediate symptoms.

First-aid measures after ingestion : Not specifically applicable (gas).

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects : Headache. Loss of co-ordination. Nausea. CNS depression. Disturbances of consciousness. Cardiac disorders.

4.3. Indication of any immediate medical attention and special treatment needed

Do not administer medicines from the adrenalin-ephedrine group.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Powders. Carbon dioxide. Water spray.

5.2. Special hazards arising from the substance or mixture

Explosion hazard : Vapour/air mixtures are explosive. The vapours are denser than air and may travel along the ground. Distance ignition possible.

5.3. Advice for firefighters

Precautionary measures fire : Close the valve if possible. Cool down the containers exposed to heat with a water spray. Do not attempt to take action without suitable protective equipment.

Protection during firefighting : Self-contained breathing apparatus. Impermeable protective equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Stop the leak. Evacuate the danger area. Only qualified personnel equipped with suitable protective equipment may intervene. Remove all sources of ignition.

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate area.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent the product from entering cellars, basements or pits. Control the vapours with a fine water spray. Prevent the product from entering drains (risk of explosion).

6.3. Methods and material for containment and cleaning up

Other information : Mechanically ventilate the spillage area.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For disposal of solid materials or residues refer to section 13 : "Disposal considerations".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ventilation. Material and equipment suitable for use under explosive conditions. Use non-sparking tools. Smoking is forbidden. Avoid the build-up of electrostatic charge. Work in a well-ventilated area.

Hygiene measures : Do not drink, eat or smoke in the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed. Keep in a cool, well-ventilated place away from heat.

Incompatible materials : Oxidizing materials. Strong oxidizing agents. Strong bases.

Packaging materials : Recommended materials. Teflon. Steel. Do not use : Rubbers. Viton. Neoprene. Hypalon.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

DIMETHYLETHER (115-10-6)	
EU - Occupational Exposure Limits	
IOELV TWA (mg/m³)	1920 mg/m³
IOELV TWA (ppm)	1000 ppm
Belgium - Occupational Exposure Limits	
Limit value (mg/m³)	1920 mg/m³ GWBB

Limit value (ppm)	1000 ppm GWBB
France - Occupational Exposure Limits	
VME (mg/m³)	1920 mg/m³ (8 Hours)
VME (ppm)	1000 ppm (15 minutes)
Germany - Occupational Exposure Limits (TRGS 900)	
Occupational exposure limit value (mg/m³)	1900 mg/m³ MAK-TWA
Occupational exposure limit value (ppm)	1000 ppm MAK-TWA
Limitation of exposure peaks (mg/m³)	15200 mg/m³ MAK-STEL
Limitation of exposure peaks (ppm)	8000 ppm MAK-STEL
United Kingdom - Occupational Exposure Limits	
WEL TWA (mg/m³)	766 mg/m³ (8 Hours)
WEL TWA (ppm)	400 ppm (8 Hours)
WEL STEL (mg/m³)	958 mg/m³ (15 minutes)
WEL STEL (ppm)	500 ppm (15 minutes)

dimethyl ether (115-10-6)	
EU - Occupational Exposure Limits	
Local name	Dimethylether
IOELV TWA (mg/m³)	1920 mg/m³
IOELV TWA (ppm)	1000 ppm
Austria - Occupational Exposure Limits	
Local name	Dimethylether
MAK (mg/m³)	1910 mg/m³
MAK (ppm)	1000 ppm
MAK Short time value (mg/m³)	3820 mg/m³
MAK Short time value (ppm)	2000 ppm
Regulatory reference	BGBl. II Nr. 186/2015
Belgium - Occupational Exposure Limits	
Local name	Oxyde de diméthyle # Dimethylether
Limit value (mg/m³)	1920 mg/m³
Limit value (ppm)	1000 ppm
Regulatory reference	Koninklijk besluit/Arrêté royal 21/01/2020
Finland - Occupational Exposure Limits	
Local name	Dimetyylieetteri
HTP-arvo (8h) (mg/m³)	2000 mg/m³
HTP-arvo (8h) (ppm)	1000 ppm
Regulatory reference	HTP-ARVOT 2018 (Sosiaali- ja terveysministeriö)
France - Occupational Exposure Limits	
Local name	Oxyde de diméthyle
VME (mg/m³)	1920 mg/m³
VME (ppm)	1000 ppm
Germany - Occupational Exposure Limits (TRGS 900)	
TRGS 900 Local name	Dimethylether
Occupational exposure limit value (mg/m³)	1900 mg/m³
Occupational exposure limit value (ppm)	1000 ppm
Limitation of exposure peaks (mg/m³)	15200 mg/m³

Limitation of exposure peaks (ppm)	8000 ppm
TRGS 900 Remark	DFG,EU
Italy - Occupational Exposure Limits	
Local name	Etere dimetilico
OEL TWA (mg/m³)	1920 mg/m³
OEL TWA (ppm)	1000 ppm
Regulatory reference	Allegato XXXVIII del D.Lgs. 9 aprile 2008, n. 81 e s.m.i.
Netherlands - Occupational Exposure Limits	
Local name	Dimethylether
Grenswaarde TGG 8H (mg/m³)	950 mg/m³
Grenswaarde TGG 15MIN (mg/m³)	1500 mg/m³
Regulatory reference	Arbeidsomstandighedenregeling 2018
Slovakia - Occupational Exposure Limits	
NPHV (priemerná) (mg/m³)	1920 mg/m³
NPHV (priemerná) (ppm)	1000 ppm
Spain - Occupational Exposure Limits	
Local name	Metiléter
VLA-ED (mg/m³)	1920 mg/m³
VLA-ED (ppm)	1000 ppm
Notes	VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo).
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2019. INSHT
Sweden - Occupational Exposure Limits	
Local name	Dimetyleter
nivågränsvärde (NVG) (mg/m³)	950 mg/m³
nivågränsvärde (NVG) (ppm)	500 ppm
kortidsvärde (KTV) (mg/m³)	1500 mg/m³
kortidsvärde (KTV) (ppm)	800 ppm
Anmärkning (SE)	V (Vägledande korttidsgränsvärde ska användas som ett rekommenderat högsta värde som inte bör överskridas)
Regulatory reference	Hygieniska gränsvärden (AFS 2018:1)
United Kingdom - Occupational Exposure Limits	
Local name	Dimethyl ether
WEL TWA (mg/m³)	766 mg/m³
WEL TWA (ppm)	400 ppm
WEL STEL (mg/m³)	958 mg/m³
WEL STEL (ppm)	500 ppm
Norway - Occupational Exposure Limits	
Local name	Dimetyleter
Grenseverdier (AN) (mg/m³)	384 mg/m³
Grenseverdier (AN) (ppm)	200 ppm
Merknader (NO)	E (EU har en veiledende grenseverdi for stoffet)
Regulatory reference	FOR-2018-08-21-1255
Switzerland - Occupational Exposure Limits	
Local name	Ether diméthylique
MAK (mg/m³)	1910 mg/m³
MAK (ppm)	1000 ppm

Turkey - Occupational Exposure Limits	
Local name	Dimetileter
OEL TWA (mg/m³)	1920 mg/m³
OEL TWA (ppm)	1000 ppm
Regulatory reference	12 Ağustos 2013 Tarihli ve 28733 Sayılı Resmî Gazete

DIMETHYLETHER (115-10-6)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, inhalation	1894 mg/m³
DNEL/DMEL (General population)	
Long-term - systemic effects, inhalation	471 mg/m³
PNEC (Water)	
PNEC aqua (freshwater)	0.155 mg/l
PNEC aqua (marine water)	0.016 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	0.681 mg/kg dwt
PNEC sediment (marine water)	0.069 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.045 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	180 mg/l

8.2. Exposure controls

Hand protection:

Nitrile-rubber protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Antistatic clothing

Respiratory protection:

In a confined area : Self-contained breathing apparatus. If necessary, wear a mask with canister for organic vapours, type AX

Personal protective equipment symbol(s):

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gas
Colour	: Colourless.
Odour	: Ethereal.
Odour threshold	: No data
pH	: Not applicable
Relative evaporation rate (butylacetate=1)	: No data
Melting point	: No data available
Freezing point	: -141 °C
Boiling point	: -25 °C
Flash point	: -41 °C (Open cup)
Auto-ignition temperature	: 350 °C

Decomposition temperature	: No data
Flammability (solid, gas)	: No data available
Vapour pressure	: 5.2 bar (20°C)
Vapour pressure at 50 °C	: 11.3 bar
Relative vapour density at 20 °C	: 1.6
Relative density	: No data available
Density	: 0.666 g/cm³
Solubility	: Soluble in water. Soluble in organic solvents. Water: 70 g/l (18°C)
Log Pow	: 0.18
Viscosity, kinematic	: No data available
Viscosity, dynamic	: Not applicable
Explosive properties	: Not explosive material according to EC criteria.
Oxidising properties	: Non oxidizing material according to EC criteria.
Lower explosive limit (LEL)	: 3.4 vol %
Upper explosive limit (UEL)	: 18.6 vol %

9.2. Other information

VOC content : 100 %

SECTION 10: Stability and reactivity

10.1. Reactivity

Vapour mixes readily with air, forming explosive mixtures.

10.2. Chemical stability

Can form explosive peroxides by prolonged contact with air.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

High temperature.

10.5. Incompatible materials

oxidizing materials. organic anhydrides. Acids. air. Strong oxidizing agents. Oxygen.

10.6. Hazardous decomposition products

In case of fire: Toxic vapours are released (CO, CO2).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

DIMETHYLETHER (115-10-6)	
LC50 inhalation rat (ppm)	164000 ppm
LC50 inhalation rat (Vapours - mg/l/4h)	312 mg/l/4h

dimethyl ether (115-10-6)	
LC50 inhalation rat (ppm)	164000 ppm/4h

Skin corrosion/irritation	: Not irritating to skin. Gaseous : Slightly irritating to the skin pH: Not applicable
Additional information	: Contact with the liquid causes frostbite
Serious eye damage/irritation	: Not irritating to eyes. Gaseous : Slightly irritating to the eyes pH: Not applicable
Additional information	: Contact with the liquefied gas may cause severe ocular lesions
Respiratory or skin sensitisation	: Not classified
Additional information	: May be irritating to the respiratory system
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
Additional information	: No specific data

STOT-repeated exposure : Not classified
Additional information : No specific data
Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute) : Not classified
Hazardous to the aquatic environment, long-term (chronic) : Not classified

DIMETHYLETHER (115-10-6)	
LC50 fish 1	> 4000 mg/l 96 Hours (Poecilia reticulata)
EC50 Daphnia 1	> 4000 mg/l 48 Hours (Daphnia magna)

dimethyl ether (115-10-6)	
LC50 fish 1	> 4000 mg/l 96 Hours (Poecilia reticulata)
EC50 Daphnia 1	> 4000 mg/l 48 Hours (Daphnia magna)
EC50 96h algae (1)	154.9 mg/l

12.2. Persistence and degradability

DIMETHYLETHER (115-10-6)	
Persistence and degradability	Not readily biodegradable.

dimethyl ether (115-10-6)	
Persistence and degradability	Not readily biodegradable. 5 % biodegradation after 28 days.

12.3. Bioaccumulative potential

DIMETHYLETHER (115-10-6)	
Log Pow	0.18
Bioaccumulative potential	Bioaccumulation unlikely.

dimethyl ether (115-10-6)	
Log Pow	0.07
Bioaccumulative potential	Bioaccumulation unlikely.

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

DIMETHYLETHER (115-10-6)
PBT: not relevant – no registration required
vPvB: not relevant – no registration required

Component	
dimethyl ether (115-10-6)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Other adverse effects

Other adverse effects : Ozone depletion potential. ODP (R-11=1)=0.
Additional information : Global warming potential (GWP). GWP (CO2=1/100 years) = 1

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Sewage disposal recommendations : Dispose of at an licensed site.
Product/Packaging disposal recommendations : The user's attention is drawn to the possible existence of specific european, national or local regulations regarding disposal.

SECTION 14: Transport information

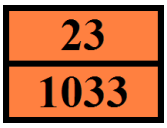
In accordance with ADR / IATA / IMDG / RID

ADR	IMDG	IATA	RID
14.1. UN number			
UN 1033	UN 1033	UN 1033	UN 1033
14.2. UN proper shipping name			
DIMETHYL ETHER	DIMETHYL ETHER	Dimethyl ether	DIMETHYL ETHER
Transport document description			
UN 1033 DIMETHYL ETHER, 2.1, (B/D)	UN 1033 DIMETHYL ETHER, 2.1	UN 1033 Dimethyl ether, 2.1	UN 1033 DIMETHYL ETHER, 2.1
14.3. Transport hazard class(es)			
2.1	2.1	2.1	2.1
			
14.4. Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards			
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available			

14.6. Special precautions for user

Overland transport

Classification code (ADR) : 2F
Special provisions (ADR) : 662
Limited quantities (ADR) : 0
Tank code (ADR) : PxBN(M)
Transport category (ADR) : 2
Hazard identification number (Kemler No.) : 23
Orange plates :



Tunnel restriction code (ADR) : B/D
EAC code : 2YE

Transport by sea

Limited quantities (IMDG) : 0
EmS-No. (Fire) : F-D
EmS-No. (Spillage) : S-U

Air transport

PCA Limited quantities (IATA) : Forbidden
PCA limited quantity max net quantity (IATA) : Forbidden
PCA packing instructions (IATA) : Forbidden
PCA max net quantity (IATA) : Forbidden
CAO packing instructions (IATA) : 200
CAO max net quantity (IATA) : 150kg
Special provisions (IATA) : A1

Rail transport

Classification code (RID) : 2F
Limited quantities (RID) : 0
Tank codes for RID tanks (RID) : PxBN(M)
Transport category (RID) : 2

Colis express (express parcels) (RID) : CE3

Hazard identification number (RID) : 23

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

DIMETHYLETHER is not on the REACH Candidate List

DIMETHYLETHER is not on the REACH Annex XIV List

DIMETHYLETHER is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 july 2012 concerning the export and import of hazardous chemicals.

DIMETHYLETHER is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

VOC content : 100 %

15.1.2. National regulations

Germany

Reference to AwSV : Water hazard class (WGK) 1, Slightly hazardous to water (Classification according to AwSV; ID No. 714)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Indication of changes:			
Section	**Changed item**	**Change**	**Comments**
1.1	Product name	Modified	
1.1	Article number	Modified	
1.3	Supplier	Modified	

Full text of H- and EUH-statements:	
Press. Gas (Liq.)	Gases under pressure : Liquefied gas
H280	Contains gas under pressure; may explode if heated.

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

Annex to the safety data sheet

1. SE1: Formulation [mixing] of preparations and/or re-packaging

1.1. Title section

Formulation [mixing] of preparations and/or re-packaging

ES Ref.: SE1 ES Type: Worker Version: 1.0	Issue date: 21/01/2020

Environment		
	Contributing scenario controlling environmental exposure	ERC2
Worker		
	Contributing scenario controlling worker exposure	PROC1
	Contributing scenario controlling worker exposure	PROC2
	Contributing scenario controlling worker exposure	PROC3
	Contributing scenario controlling worker exposure	PROC4
	Contributing scenario controlling worker exposure	PROC5
	Contributing scenario controlling worker exposure	PROC8b
	Contributing scenario controlling worker exposure	PROC9

Processes, tasks, activities covered	Industrial use

1.2. Conditions of use affecting exposure

1.2.1. Control of environmental exposure: Contributing scenario controlling environmental exposure (ERC2)

ERC2	Formulation into mixture

Product (article) characteristics

Physical form of product	Gas, Liquefied gas
Concentration of substance in product	<= 100 %

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

Annual amount per site	<= 6000 t/yr
Daily amount per site	20 T
Emission days	300

Conditions and measures related to sewage treatment plant

Assumed domestic sewage treatment plant flow	2000

Other conditions affecting environmental exposure

Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Receiving surface water flow is 18000 m³/d	

1.2.2. Control of worker exposure: Contributing scenario controlling worker exposure (PROC1)

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

Product (article) characteristics

Physical form of product	Gas, Liquefied gas
Concentration of substance in product	<= 100 %

Amount used (or contained in articles), frequency and duration of use/exposure

Not applicable.	
Covers daily exposures up to 8 hours	

Other conditions affecting workers exposure

Indoor use	

1.2.3. Control of worker exposure: Contributing scenario controlling worker exposure (PROC2)

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

Product (article) characteristics

Physical form of product	Gas, Liquefied gas
Concentration of substance in product	<= 100 %

Amount used (or contained in articles), frequency and duration of use/exposure

Not applicable.	
Covers daily exposures up to 8 hours	

Other conditions affecting workers exposure	
Indoor use	

1.2.4. Control of worker exposure: Contributing scenario controlling worker exposure (PROC3)

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

Product (article) characteristics	
Physical form of product	Gas, Liquefied gas
Concentration of substance in product	<= 100 %

Amount used (or contained in articles), frequency and duration of use/exposure	
Not applicable.	
Covers daily exposures up to 8 hours	

Other conditions affecting workers exposure	
Indoor use	

1.2.5. Control of worker exposure: Contributing scenario controlling worker exposure (PROC4)

PROC4	Chemical production where opportunity for exposure arises

Product (article) characteristics	
Physical form of product	Gas, Liquefied gas
Concentration of substance in product	<= 100 %

Amount used (or contained in articles), frequency and duration of use/exposure	
Not applicable.	
Covers daily exposures up to 8 hours	

Other conditions affecting workers exposure	
Indoor use	

1.2.6. Control of worker exposure: Contributing scenario controlling worker exposure (PROC5)

PROC5	Mixing or blending in batch processes

Product (article) characteristics	
Physical form of product	Gas, Liquefied gas
Concentration of substance in product	<= 100 %

Amount used (or contained in articles), frequency and duration of use/exposure	
Not applicable.	
Covers daily exposures up to 8 hours	

Other conditions affecting workers exposure	
Indoor use	

1.2.7. Control of worker exposure: Contributing scenario controlling worker exposure (PROC8b)

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

Product (article) characteristics	
Physical form of product	Gas, Liquefied gas
Concentration of substance in product	<= 100 %

Amount used (or contained in articles), frequency and duration of use/exposure	
Not applicable.	
Covers daily exposures up to 8 hours	

Other conditions affecting workers exposure	
Indoor use	

1.2.8. Control of worker exposure: Contributing scenario controlling worker exposure (PROC9)

PROC9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Product (article) characteristics	
Physical form of product	Gas, Liquefied gas
Concentration of substance in product	<= 100 %

Amount used (or contained in articles), frequency and duration of use/exposure	
Not applicable.	

Covers daily exposures up to 8 hours	

Other conditions affecting workers exposure

Indoor use	

1.3. Exposure estimation and reference to its source

1.3.1. Environmental release and exposure Contributing scenario controlling environmental exposure (ERC2)

Protection target	Unit	Exposure estimation	PNEC	RCR	Assessment method
Freshwater	mg/l	0.0000023	0.155	< 0.01	Used ECETOC TRA model (2010)
Marine water	µg/L	0.00000088	0.016	< 0.01	Used ECETOC TRA model (2010)
Freshwater sediment	mg/kg dwt	0.0000101	0.681	< 0.01	Used ECETOC TRA model (2010)
Marine water sediment	mg/kg dwt	0.00000389	0.069	< 0.01	Used ECETOC TRA model (2010)
Sewage treatment plant	mg/l	0	180	0	Used ECETOC TRA model (2010)
Soil	mg/kg dwt	0.00139	0.045	0.031	Used ECETOC TRA model (2010)

Release estimation	Air	40 kg/day	
Release estimation	Water	0 kg/day	
Release estimation	soil	0 kg/day	

1.3.2. Worker exposure Contributing scenario controlling worker exposure (PROC1)

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	0.0192 mg/m³	0	Used ECETOC TRA model (2010)
Sum RCR - Long-term - systemic effects		0	

1.3.3. Worker exposure Contributing scenario controlling worker exposure (PROC2)

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	96 mg/m³	0.051	Used ECETOC TRA model (2010)
Sum RCR - Long-term - systemic effects		0.051	

1.3.4. Worker exposure Contributing scenario controlling worker exposure (PROC3)

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	192 mg/m³	0.101	Used ECETOC TRA model (2010)
Sum RCR - Long-term - systemic effects		0.101	

1.3.5. Worker exposure Contributing scenario controlling worker exposure (PROC4)

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	192 mg/m³	0.101	Used ECETOC TRA model (2010)
Sum RCR - Long-term - systemic effects		0.101	

1.3.6. Worker exposure Contributing scenario controlling worker exposure (PROC5)

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	480 mg/m³	0.253	Used ECETOC TRA model (2010),Worst case assumption
Sum RCR - Long-term - systemic effects		0.253	

1.3.7. Worker exposure Contributing scenario controlling worker exposure (PROC8b)

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	288 mg/m³	0.152	Used ECETOC TRA model (2010)
Sum RCR - Long-term - systemic effects		0.152	

1.3.8. Worker exposure Contributing scenario controlling worker exposure (PROC9)

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	384 mg/m³	0.203	Used ECETOC TRA model (2010)

Sum RCR - Long-term - systemic effects		0.203	

1.4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

1.4.1. Environment

Guidance - Environment	No additional risk management measures, besides those that are mentioned above, are needed to guarantee safe use for environment. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e, RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required

1.4.2. Health

Guidance - Health	No additional risk management measures, besides those that are mentioned above, are needed to guarantee safe use for workers. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e, RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required

2. SE2: Use in propellants

2.1. Title section

Use in propellants

ES Ref.: SE2 ES Type: Worker Version: 1.0	Issue date: 21/01/2020

Environment		
	Contributing scenario controlling environmental exposure	ERC8a, ERC8d
Worker		
	Contributing scenario controlling worker exposure	PROC7
	Contributing scenario controlling worker exposure	PROC7
	Contributing scenario controlling worker exposure	PROC11
	Contributing scenario controlling worker exposure	PROC11
	Contributing scenario controlling worker exposure	PROC15

Processes, tasks, activities covered	Industrial use Professional use

2.2. Conditions of use affecting exposure

2.2.1. Control of environmental exposure: Contributing scenario controlling environmental exposure (ERC8a, ERC8d)

ERC8a	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
ERC8d	Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)

Product (article) characteristics

Physical form of product	Gas, Liquefied gas
Concentration of substance in product	> 25 %

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

Annual amount per site	<= 3000 t/yr
Fraction of EU tonnage used in region:	0.1
Fraction of Regional tonnage used locally:	0.002
Emission days	365

Conditions and measures related to sewage treatment plant

Assumed domestic sewage treatment plant flow	2000

Other conditions affecting environmental exposure

Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Receiving surface water flow is 18000 m³/d	

2.2.2. Control of worker exposure: Contributing scenario controlling worker exposure (PROC7)

PROC7	Industrial spraying

Product (article) characteristics

Physical form of product	Gas, Liquefied gas
Concentration of substance in product	> 25 %

Amount used (or contained in articles), frequency and duration of use/exposure

Not applicable.	
Covers daily exposures up to 8 hours	

Technical and organisational conditions and measures

Ensure good ventilation of the work station	

Other conditions affecting workers exposure

Outdoor use	

2.2.3. Control of worker exposure: Contributing scenario controlling worker exposure (PROC7)

PROC7	Industrial spraying

Product (article) characteristics

Physical form of product	Gas, Liquefied gas
Concentration of substance in product	> 25 %

Amount used (or contained in articles), frequency and duration of use/exposure

Not applicable.	

Covers daily exposures up to 8 hours	

Technical and organisational conditions and measures

Ensure good ventilation of the work station	

Other conditions affecting workers exposure

Indoor use	

2.2.4. Control of worker exposure: Contributing scenario controlling worker exposure (PROC11)

PROC11	Non-industrial spraying

Product (article) characteristics

Physical form of product	Gas, Liquefied gas
Concentration of substance in product	> 25 %

Amount used (or contained in articles), frequency and duration of use/exposure

Not applicable.	
Covers daily exposures up to 8 hours	

Technical and organisational conditions and measures

Ensure good ventilation of the work station	

Other conditions affecting workers exposure

Outdoor use	

2.2.5. Control of worker exposure: Contributing scenario controlling worker exposure (PROC11)

PROC11	Non-industrial spraying

Product (article) characteristics

Physical form of product	Gas, Liquefied gas
Concentration of substance in product	> 25 %

Amount used (or contained in articles), frequency and duration of use/exposure

Not applicable.	
Covers exposure up to	4 h/day

Technical and organisational conditions and measures

Ensure good ventilation of the work station	

Other conditions affecting workers exposure

Indoor use	

2.2.6. Control of worker exposure: Contributing scenario controlling worker exposure (PROC15)

PROC15	Use as laboratory reagent

Product (article) characteristics

Physical form of product	Gas, Liquefied gas
Concentration of substance in product	> 25 %

Amount used (or contained in articles), frequency and duration of use/exposure

Not applicable.	
Covers daily exposures up to 8 hours	

Technical and organisational conditions and measures

Ensure good ventilation of the work station	

Other conditions affecting workers exposure

Indoor use	

2.3. Exposure estimation and reference to its source

2.3.1. Environmental release and exposure Contributing scenario controlling environmental exposure (ERC8a, ERC8d)

Protection target	Unit	Exposure estimation	PNEC	RCR	Assessment method
Freshwater	mg/l	0.0000023	0.155	< 0.01	Used ECETOC TRA model (2010)
Marine water	µg/L	0.00000088	0.016	< 0.01	Used ECETOC TRA model (2010)
Freshwater sediment	mg/kg dwt	0.0000101	0.681	< 0.01	Used ECETOC TRA model (2010)
Marine water sediment	mg/kg dwt	0.00000389	0.069	< 0.01	Used ECETOC TRA model (2010)
Sewage treatment plant	mg/l	0	180	0	Used ECETOC TRA model (2010)

Soil	mg/kg dwt	0.00139	0.045	0.031	Used ECETOC TRA model (2010)

Release estimation	Air	4110 kg/day	
Release estimation	Water	0 kg/day	
Release estimation	soil	0 kg/day	

2.3.2. Worker exposure Contributing scenario controlling worker exposure (PROC7)

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	672 mg/m³	0.355	Used ECETOC TRA model (2010)
Sum RCR - Long-term - systemic effects		0.355	

2.3.3. Worker exposure Contributing scenario controlling worker exposure (PROC7)

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	960 mg/m³	0.507	Used ECETOC TRA model (2010)
Sum RCR - Long-term - systemic effects		0.507	

2.3.4. Worker exposure Contributing scenario controlling worker exposure (PROC11)

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	1340 mg/m³	0.707	Used ECETOC TRA model (2010),Worst case assumption
Sum RCR - Long-term - systemic effects		0.707	

2.3.5. Worker exposure Contributing scenario controlling worker exposure (PROC11)

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	1150 mg/m³	0.607	Used ECETOC TRA model (2010)
Sum RCR - Long-term - systemic effects		0.607	

2.3.6. Worker exposure Contributing scenario controlling worker exposure (PROC15)

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	96 mg/m³	0.051	Used ECETOC TRA model (2010)
Sum RCR - Long-term - systemic effects		0.051	

2.4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

2.4.1. Environment

Guidance - Environment	No additional risk management measures, besides those that are mentioned above, are needed to guarantee safe use for environment. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e, RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required

2.4.2. Health

Guidance - Health	No additional risk management measures, besides those that are mentioned above, are needed to guarantee safe use for workers. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e, RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required

3. SE3: Use as a blowing agent in the manufacture of foamed or expanded plastics (foams)

3.1. Title section

Use as a blowing agent in the manufacture of foamed or expanded plastics (foams)

ES Ref.: SE3 ES Type: Worker Version: 1.0	Issue date: 21/01/2020

Environment		
	Contributing scenario controlling environmental exposure	ERC4
Worker		
	Contributing scenario controlling worker exposure	PROC5, PROC12, PROC14

Processes, tasks, activities covered	Industrial use

3.2. Conditions of use affecting exposure

3.2.1. Control of environmental exposure: Contributing scenario controlling environmental exposure (ERC4)

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

Product (article) characteristics

Physical form of product	Gas, Liquefied gas
Concentration of substance in product	<= 100 %

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

Annual amount per site	300 t/yr
Emission days	300

Technical and organisational conditions and measures

Treat air emissions.	50

Conditions and measures related to sewage treatment plant

Assumed domestic sewage treatment plant flow	2000

Other conditions affecting environmental exposure

Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Receiving surface water flow is 18000 m³/d	

3.2.2. Control of worker exposure: Contributing scenario controlling worker exposure (PROC5, PROC12, PROC14)

PROC5	Mixing or blending in batch processes
PROC12	Use of blowing agents in manufacture of foam
PROC14	Tabletting, compression, extrusion, pelettisation, granulation

Product (article) characteristics

Physical form of product	Liquefied gas
Concentration of substance in product	<= 100 %

Amount used (or contained in articles), frequency and duration of use/exposure

Not applicable.	
Covers daily exposures up to 8 hours	

Technical and organisational conditions and measures

Ensure good ventilation of the work station	
Assess the risk of potentially explosive atmospheres and the need for explosion-proof equipment.	

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

Contact with the liquid causes frostbite. Wear suitable working clothes. Use suitable eye protection and gloves	

Other conditions affecting workers exposure

Indoor use	

3.3. Exposure estimation and reference to its source

3.3.1. Environmental release and exposure Contributing scenario controlling environmental exposure (ERC4)

Protection target	Unit	Exposure estimation	PNEC	RCR	Assessment method
Freshwater	mg/l	0.0000023	0.155	< 0.01	Used ECETOC TRA model (2010)
Marine water	µg/L	0.00000088	0.016	< 0.01	Used ECETOC TRA model (2010)

Freshwater sediment	mg/kg dwt	0.0000101	0.681	< 0.01	Used ECETOC TRA model (2010)
Marine water sediment	mg/kg dwt	0.00000389	0.069	< 0.01	Used ECETOC TRA model (2010)
Sewage treatment plant	mg/l	0	180	0	Used ECETOC TRA model (2010)
Soil	mg/kg dwt	0.00139	0.045	0.031	Used ECETOC TRA model (2010)

Release estimation	Air	500 kg/day	
Release estimation	Water	0.5 kg/day	
Release estimation	soil	0 kg/day	

3.3.2. Worker exposure Contributing scenario controlling worker exposure (PROC5, PROC12, PROC14)

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	960 mg/m³	0.507	Used ECETOC TRA model (2010),Worst case assumption
Sum RCR - Long-term - systemic effects		0.507	

3.4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

3.4.1. Environment

Guidance - Environment	No additional risk management measures, besides those that are mentioned above, are needed to guarantee safe use for environment. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e, RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required

3.4.2. Health

Guidance - Health	No additional risk management measures, besides those that are mentioned above, are needed to guarantee safe use for workers. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e, RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required

4. SE4: Use in propellants

4.1. Title section

Use in propellants

ES Ref.: SE4 ES Type: Consumer Version: 1.0	Issue date: 21/01/2020

Environment		
	Contributing scenario controlling environmental exposure	ERC8a, ERC8d
Consumer		
	Contributing scenario consumer end-use	PC1, PC3, PC4, PC8, PC9a, PC24, PC32, PC39

Processes, tasks, activities covered	Consumer use

4.2. Conditions of use affecting exposure

4.2.1. Control of environmental exposure: Contributing scenario controlling environmental exposure (ERC8a, ERC8d)

ERC8a	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
ERC8d	Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)

Product (article) characteristics

Physical form of product	Gas, Liquefied gas
Concentration of substance in product	<= 100 %

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

Annual amount per site	3000 t/yr
Fraction of EU tonnage used in region:	0.1
Emission days	365

Other conditions affecting environmental exposure

Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Receiving surface water flow is 18000 m³/d	

4.2.2. Control of consumer exposure: Contributing scenario consumer end-use (PC1, PC3, PC4, PC8, PC9a, PC24, PC32, PC39)

PC1	Adhesives, sealants
PC3	Air care products
PC4	Anti-Freeze and De-icing products
PC8	Biocidal products
PC9a	Coatings and paints, thinners, paint removers
PC24	Lubricants, greases, release products
PC32	Polymer preparations and compounds
PC39	Cosmetics, personal care products

Product (article) characteristics

Physical form of product	Gas
Concentration of substance in product	unless stated differently
	< 15 %

Amount used (or contained in articles), frequency and duration of use/exposure

Covers exposure up to	4 events per day
Spray duration	15 minutes

Other conditions affecting consumer exposure

Indoor use	
Covers use in room size of	> 2.5 m³
Covers use under typical household ventilation	

4.3. Exposure estimation and reference to its source

4.3.1. Environmental release and exposure Contributing scenario controlling environmental exposure (ERC8a, ERC8d)

Protection target	Unit	Exposure estimation	PNEC	RCR	Assessment method
Freshwater	mg/l	0.0000023	0.155	< 0.01	Used ECETOC TRA model (2010)
Marine water	µg/L	0.00000088	0.016	< 0.01	Used ECETOC TRA model (2010)

Freshwater sediment	mg/kg dwt	0.0000101	0.681	< 0.01	Used ECETOC TRA model (2010)
Marine water sediment	mg/kg dwt	0.00000389	0.069	< 0.01	Used ECETOC TRA model (2010)
Sewage treatment plant	mg/l	0	180	0	Used ECETOC TRA model (2010)
Soil	mg/kg dwt	0.00139	0.045	0.031	Used ECETOC TRA model (2010)

Release estimation	Air	8220 kg/day	
Release estimation	Water	0 kg/day	
Release estimation	soil	0 kg/day	

4.3.2. Consumer exposure Contributing scenario consumer end-use (PC1, PC3, PC4, PC8, PC9a, PC24, PC32, PC39)

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	57 mg/m³	0.121	Used ECETOC TRA model (2010)
Sum RCR - Long-term - systemic effects		0.121	

4.4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

4.4.1. Environment

Guidance - Environment	No additional risk management measures, besides those that are mentioned above, are needed to guarantee safe use for environment. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. If scaling reveals a condition of unsafe use (i.e, RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required

4.4.2. Health

Guidance - Health	No additional risk management measures, besides those that are mentioned above, are needed to guarantee safe use for workers. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. If scaling reveals a condition of unsafe use (i.e, RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required