

**Diesel PC-9-HS Test Fuel**

Version 1.8

Revision Date 2025-12-03

According to Regulation (EC) No. 1907/2006, Regulation (EC) No. 2020/878

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1****Product information**

Product Name : Diesel PC-9-HS Test Fuel
Material : 1109136, 1109135, 1109134, 1109133, 1109132

EC-No.Registration number

Chemical name	CAS-No. EC-No. Index No.	Legal Entity Registration number
Diesel fuel, no. 2	68476-34-6 270-676-1 649-227-00-2	Chevron Phillips Chemicals International NV 01-2119475502-40-0023

Unique Formula Identifier : HH00-50PC-V00M-T8XG

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

Relevant Identified Uses Supported : Manufacture
Distribution
Use as an intermediate
Use as a fuel - industrial
Use as a fuel – professional

Uses advised against : This material should not be used for purposes other than the identified uses in section 1 without expert advice.

1.3**Details of the supplier of the safety data sheet**

Company : Chevron Phillips Chemical Company LP
9500 Lakeside Blvd.
The Woodlands, TX 77381

Local : Chevron Phillips Chemicals International N.V.
Airport Plaza (Stockholm Building)
Leonardo Da Vincilaan 19
1831 Diegem
Belgium

SDS Requests: (800) 852-5530
Responsible Party: Product Safety Group
Email:sds@cpchem.com

1.4**Emergency telephone:**

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Health:

866.442.9628 (North America)

1.832.813.4984 (International)

Transport:

CHEMTREC 800.424.9300 or 703.527.3887(int'l)

Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090

Mexico CHEMTREC 01-800-681-9531 (24 hours)

South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

Argentina: +(54)-1159839431

EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

Austria: VIZ +43 1 406 43 43 (24 hours/day, 7 days/week)

Belgium: 070 245 245 (24 hours/day, 7 days/week)

Bulgaria: +359 2 9154 233

Croatia: +3851 2348 342 (24 hours/day, 7 days/week)

Cyprus: 1401

Czech Republic: Toxicological Information Center +420 224 919 293, +420 224 915 402

Denmark: Danish Poison Center (Giftlinjen): +45 8212 1212

Estonia: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

Finland: 0800 147 111 09 471 977 (24 hours/day)

France: ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (24 hours/day, 7 days/week)

Germany: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

Greece: (0030) 2107793777 (24 hours/day, 7 days/week)

Hungary: +36-80-201-199 (24 hours/day, 7 days/week)

Iceland: 543 2222 (24 hours/day, 7 days/week)

Ireland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

Italy: POISON CENTER MILAN – Azienda Ospedaliera Niguarda Ca` Grande Tel. +39 02

66101029; POISON CENTER ROME – Policlinico “Agostino Gemelli”, Servizio di tossicologia

clinica Tel. +39 06 3054343; POISON CENTER ROME – Ospedale Pediatrico Bambino Gesù

Tel. +39 06 68593726; POISON CENTER ROME – Policlinico “Umberto I” Tel. +39 06 4997 8000;

POISON CENTER FOGGIA – Azienda Ospedaliera Universitaria Riuniti Tel. +39 0881 732326;

POISON CENTER NAPLES – Azienda Ospedaliera “Antonio Cardarelli” Tel. +39 081 7472870;

POISON CENTER FLORENCE – Azienda Ospedaliera universitaria Careggi Tel. +39 055

7947819; POISON CENTER PAVIA – IRCCS Fondazione Salvatore Maugeri Tel. +39 0382

24444; POISON CENTER BERGAMO – Azienda Ospedaliera “Papa Giovanni XXIII” Tel. 800 883

300; POISON CENTER VERONA – Azienda Ospedaliera Universitaria integrata Tel. 800 011

858;

Latvia: State Fire and Rescue Service, phone number: 112; Toxicology and Sepsis Clinic

Poisoning and Drug Information Center, Hipokrāta 2, Riga, Latvia, LV-1038, phone number +371

67042473. (24 hours.)

Liechtenstein: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

Lithuania: +370 (85) 2362052

Luxembourg: (+352) 8002 5500 (24 hours/day, 7 days/week)

Malta: +356 2395 2000

The Netherlands: NVIC: +31 (0)88 755 8000

Norway: 22 59 13 00 (24 hours/day, 7 days/week)

Poland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

Portugal: CIAV phone number: +351 800 250 250

Romania: +40213183606

Slovakia: +421 2 5477 4166

Slovenia: Phone number: 112

Spain: National Emergency Telephone Number of Spanish Poison Centre: +34 91 562 04 20 (24 hours/day, 7 days/week)

Sweden: 112 – ask for Poisons Information

Organization that prepared : Product Safety and Toxicology Group
the SDS

E-mail address : SDS@CPChem.com

Website : www.CPChem.com

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SECTION 2: Hazards identification**2.1****Classification of the substance or mixture
REGULATION (EC) No 1272/2008**

Flammable liquids, Category 3	H226: Flammable liquid and vapor.
Acute toxicity, Category 4	H332: Harmful if inhaled.
Skin irritation, Category 2	H315: Causes skin irritation.
Carcinogenicity, Category 2	H351: Suspected of causing cancer.
Specific target organ toxicity - repeated exposure, Category 2	H373: May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard, Category 1	H304: May be fatal if swallowed and enters airways.
Long-term (chronic) aquatic hazard, Category 2	H411: Toxic to aquatic life with long lasting effects.

2.2**Labeling (REGULATION (EC) No 1272/2008)**

Hazard pictograms	:	   
Signal Word	:	Danger
Hazard Statements	:	H226 Flammable liquid and vapor. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H332 Harmful if inhaled. H351 Suspected of causing cancer. H373 May cause damage to organs through prolonged or repeated exposure. H411 Toxic to aquatic life with long lasting effects.
Precautionary Statements	:	Prevention: P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P260 Do not breathe mist or vapors. P273 Avoid release to the environment. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection. Response: P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. P331 Do NOT induce vomiting. P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish. P391 Collect spillage.

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Hazardous ingredients which must be listed on the label:

- 68476-34-6 Diesel fuel, no. 2

2.3**Other hazards**

Results of PBT and vPvB assessment

: This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Endocrine disrupting properties

: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

Molecular formula : Mixture

Hazardous ingredients

Chemical name	CAS-No. EC-No. Index No.	Classification (REGULATION (EC) No 1272/2008)	Concentration [wt%]	Specific Conc. Limits, M-factors and ATEs
Diesel fuel, no. 2	68476-34-6 270-676-1 649-227-00-2	Flam. Liq. 3; H226 Acute Tox. 4; H332 Skin Irrit. 2; H315 Carc. 2; H351 STOT RE 2; H373 Asp. Tox. 1; H304 Aquatic Chronic 2; H411	100	ATE dust/mist 4,1 mg/l
Naphthalene	91-20-3 202-049-5 601-052-00-2	Flam. Sol. 2; H228 Acute Tox. 4; H302 Carc. 2; H351 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	0 - 1	

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures**4.1****Description of first-aid measures**

General advice

: Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. Material may produce a serious, potentially fatal pneumonia if swallowed or vomited.

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- If inhaled : Consult a physician after significant exposure. If unconscious, place in recovery position and seek medical advice.
- In case of skin contact : If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.
- In case of eye contact : Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

4.2 Most important symptoms and effects, both acute and delayed**Notes to physician**

- Symptoms : No data available.
- Risks : No data available.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

- Flash point : 54,4°C (129,9°F)
Method: ASTM D 93

- Autoignition temperature : No data available

5.1**Extinguishing media**

- Suitable extinguishing media : Alcohol-resistant foam. Carbon dioxide (CO₂). Dry chemical.
- Unsuitable extinguishing media : High volume water jet.

5.2**Special hazards arising from the substance or mixture**

- Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.

5.3**Advice for firefighters**

- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.

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Fire and explosion protection : Do not spray on a naked flame or any incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Keep away from open flames, hot surfaces and sources of ignition.

Hazardous decomposition products : Hydrocarbons. Carbon oxides.

SECTION 6: Accidental release measures**6.1****Personal precautions, protective equipment and emergency procedures**

Personal precautions : Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

6.2**Environmental precautions**

Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3**Methods and materials for containment and cleaning up**

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

6.4**Reference to other sections**

For additional details, see the Exposure Scenario in the Annex portion

SECTION 7: Handling and storage**7.1****Precautions for safe handling
Handling**

Advice on safe handling : Avoid formation of aerosol. Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Keep away from open flames, hot surfaces and sources of ignition.

7.2**Conditions for safe storage, including any incompatibilities**

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Storage

Requirements for storage : No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

Uses advised against : This material should not be used for purposes other than the identified uses in section 1 without expert advice.

SECTION 8: Exposure controls/personal protection

Ingredients with workplace control parameters

SK

Zložky	Podstata	Hodnota	Kontrolné parametre	Poznámka
Naphthalene	SK OEL	NPEL priemerný	10 ppm, 50 mg/m3	K,
	SK OEL	NPEL krátkodobý	15 ppm, 80 mg/m3	K,

K Znamená, že faktor môže byť ľahko absorbovaný kožou. Niektoré faktory, ktoré ľahko prenikajú kožou, môžu spôsobovať až smrteľné otravy, často bez varovných príznakov (napr. anilín, nitrobenzén, nitroglykol, fenoly a pod.). Pri látkach s významným prienikom cez kožu, či už v podobe kvapalín alebo pár, je osobitne dôležité zabrániť kožnému kontaktu.

SI

Sestavine	Osnova	Vrednost	Parametri nadzora	Pripomba
Naphthalene	SI OEL	KTV	10 ppm,	2, K,
	SI OEL	KTV	50 mg/m3	2, K, Inhalabilna frakcija

2 Rakotvorne snovi - kategorija 2
K Lastnost lažjega prehajanja snovi v organizem skozi kožo

SE

Beståndsdelar	Grundval	Värde	Kontrollparametrar	Anmärkning
Naphthalene	AFS 2023:14	NGV	10 ppm, 50 mg/m3	
	AFS 2023:14	KGV	15 ppm, 80 mg/m3	V,

V Vägledande korttidsgränsvärde ska användas som ett rekommenderat högsta värde som inte bör överskridas

RU

Компоненты	Основа	Величина	Параметры контроля	Заметка
Naphthalene	RU OEL	ПДК разовая	20 mg/m3	4, пары и/или газы
	RU OEL	ПДК разовая	20 mg/m3	4, пары и/или газы
	РФ ПДК	ПДК разовая	20 mg/m3	4, пары и/или газы
Benzene, dimethyl-	RU OEL	ПДК	50 mg/m3	3, пары и/или газы
	RU OEL	ПДК разовая	150 mg/m3	3, пары и/или газы
	RU OEL	ПДК	50 mg/m3	3, пары и/или газы
	RU OEL	ПДК разовая	150 mg/m3	3, пары и/или газы
	РФ ПДК	ПДК	50 mg/m3	3, пары и/или газы
	РФ ПДК	ПДК разовая	150 mg/m3	3, пары и/или газы
Ethylbenzene	RU OEL	ПДК	50 mg/m3	4, пары и/или газы
	RU OEL	ПДК разовая	150 mg/m3	4, пары и/или газы
	RU OEL	ПДК	50 mg/m3	4, пары и/или газы
	RU OEL	ПДК разовая	150 mg/m3	4, пары и/или газы
	РФ ПДК	ПДК	50 mg/m3	4, пары и/или газы
	РФ ПДК	ПДК разовая	150 mg/m3	4, пары и/или газы
Toluene	RU OEL	ПДК	50 mg/m3	3,
	RU OEL	ПДК разовая	150 mg/m3	3,
	RU OEL	ПДК	50 mg/m3	3, пары и/или газы
	RU OEL	ПДК разовая	150 mg/m3	3, пары и/или газы
	RU OEL	ПДК	50 mg/m3	3, пары и/или газы
	RU OEL	ПДК разовая	150 mg/m3	3, пары и/или газы
Phenanthrene	РФ ПДК	ПДК	50 mg/m3	3, пары и/или газы
	РФ ПДК	ПДК разовая	150 mg/m3	3, пары и/или газы
	RU OEL	ПДК разовая	0,8 mg/m3	2, Аэрозоль
	RU OEL	ПДК разовая	0,8 mg/m3	2, Аэрозоль
Cumene	РФ ПДК	ПДК разовая	0,8 mg/m3	2, аэрозоль
	RU OEL	ПДК	50 mg/m3	4, пары и/или газы
	RU OEL	ПДК разовая	150 mg/m3	4, пары и/или газы
	RU OEL	ПДК	50 mg/m3	4, пары и/или газы
	RU OEL	ПДК разовая	150 mg/m3	4, пары и/или газы
	РФ ПДК	ПДК	50 mg/m3	4, пары и/или газы

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	РФ ПДК	ПДК разовая	150 mg/m3	4, пары и/или газы
Benzene	RU OEL	ПДК	5 mg/m3	+, 2, К, пары и/или газы
	RU OEL	ПДК разовая	15 mg/m3	+, 2, К, пары и/или газы
	RU OEL	ПДК	5 mg/m3	2, К, пары и/или газы
	RU OEL	ПДК разовая	15 mg/m3	2, К, пары и/или газы
	РФ ПДК	ПДК	5 mg/m3	2, CANCER, +, пары и/или газы
	РФ ПДК	ПДК разовая	15 mg/m3	2, CANCER, +, пары и/или газы
n-Hexane	RU OEL	ПДК	300 mg/m3	4, пары и/или газы
	RU OEL	ПДК разовая	900 mg/m3	4, пары и/или газы
	RU OEL	ПДК	300 mg/m3	4, пары и/или газы
	RU OEL	ПДК разовая	900 mg/m3	4, пары и/или газы
	РФ ПДК	ПДК	300 mg/m3	4, пары и/или газы
	РФ ПДК	ПДК разовая	900 mg/m3	4, пары и/или газы

+ соединения, при работе с которыми требуется специальная защита кожи и глаз; символ проставлен вслед за наименованием вещества
2 2 класс - высокоопасные
3 3 класс - опасные
4 4 класс - умеренно опасные
CANCER Канцероген
К канцерогены

RS

Компоненты	Основа	Величина	Параметры контроля	Заметка
Нафталин	RS OEL	GVI	10 ppm, 50 mg/m3	EU,

EU Substance mentioned in indicative exposure limit values in Directive 91/322 / EEC

RO

Componente	Sursă	Valoare	Parametri de control	Notă
Naphthalene	RO OEL	TWA	10 ppm, 50 mg/m3	C2,

C2 susceptibil de a provoca apariția cancerului

PT

Componentes	Base	Valor	Parâmetros de controle	Nota
Diesel fuel, no. 2	PT OEL	VLE-MP	100 mg/m3	P, A3,
	PT OEL	VLE-MP	100 mg/m3	P, A3, Fração inalável e vapor
Naphthalene	PT OEL	VLE-MP	10 ppm,	P, A3,
	PT DL 305/2007	oito horas	10 ppm, 50 mg/m3	

A3 Agente carcinogénico confirmado nos animais de laboratório com relevância desconhecida no Homem.
P Perigo de absorção cutânea

PL

Składniki	Podstawa	Wartość	Parametry dotyczące kontroli	Uwaga
Naphthalene	PL NDS	NDS	20 mg/m3	
	PL NDS	NDSch	50 mg/m3	

NO

Komponenter	Grunnlag	Verdi	Kontrollparametrer	Nota
Naphthalene	FOR-2011-12-06-1358	GV	10 ppm, 50 mg/m3	

NL

Bestanddelen	Basis	Waarde	Controleparameters	Opmerking
Naphthalene	NL WG	TGG-8 uur	10 ppm, 50 mg/m3	
	NL WG	TGG-15 min	16 ppm, 80 mg/m3	

MT

Components	Basis	Value	Control parameters	Note
Naphthalene	MT OEL	TWA	10 ppm, 50 mg/m3	

МК

Съставки	Основа	Стойност	Параметри на контрол	Бележка
Naphthalene	МК OEL	MV	10 ppm, 50 mg/m3	

LV

Sastāvdaļas	Bāze	Vērtība	Kontroles parametri	Piezīme
Naphthalene	LV OEL	AER 8 st	10 ppm, 50 mg/m3	

LU

Composants	Base	Valeur	Paramètres de contrôle	Note
Naphthalene	LU OEL	TWA	10 ppm, 50 mg/m3	

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LT

Komponentai	Šaltinis	Vertė	Kontrolės parametrai	Pastaba
Diesel fuel, no. 2	LT OEL	IPRD	200 mg/m3	
	LT OEL	TPRD	300 mg/m3	
Naphthalene	LT OEL	IPRD	10 ppm, 50 mg/m3	

IS

Komponenter	Grunnlag	Verdi	Kontrollparametrer	Nota
Naphthalene	IS OEL	TWA	10 ppm, 50 mg/m3	

IE

Components	Basis	Value	Control parameters	Note
Naphthalene	IE OEL	OELV - 8 hrs (TWA)	10 ppm, 50 mg/m3	

HU

Komponensek	Bázis	Érték	Ellenőrzési paraméterek	Megjegyzés
Naphthalene	HU OEL	AK-érték	10 ppm, 50 mg/m3	N, EU91, i,

EU91 91/322/EGK irányelvben közölt érték
i Ingerlő anyag (izgatja a bőrt, nyálkahártyát, szemet vagy mindhármat)
N Irritáló anyagok, egyszerű fojtógázok, csekély egészségkárosító hatással bíró anyagok. Korrekció NEM szükséges.

HR

Sastojci	Temelj	Vrijednost	Nadzorni parametri	Bilješka
Diesel fuel, no. 2	HR OEL	GVI	100 ppm, 400 mg/m3	
Naphthalene	HR OEL	GVI	10 ppm, 50 mg/m3	
	HR OEL		15 ppm, 75 mg/m3	

GR

Συστατικά	Βάση	Τιμή	Παράμετροι ελέγχου	Σημείωση
Naphthalene	GR OEL	TWA	10 ppm, 50 mg/m3	

FR

Composants	Base	Valeur	Paramètres de contrôle	Note
Naphthalene	FR VLE	VME	10 ppm, 50 mg/m3	C2, Valeurs limites admises (circulaires),

C2 Cancérigène de catégorie 2 - Substances préoccupantes en raison d'effets cancérogènes possibles
Valeurs limites admises (circulaires)
Valeurs limites admises (circulaires)

FI

Aineosat	Peruste	Arvo	Valvontaa koskevat muuttujat	Huomautus
Naphthalene	FI OEL	HTP-arvot 8h	1 ppm, 5 mg/m3	
	FI OEL	HTP-arvot 15 min	2 ppm, 10 mg/m3	

ES

Componentes	Base	Valor	Parámetros de control	Nota
Naphthalene	ES VLA	VLA-ED	10 ppm, 53 mg/m3	vía dérmica,
	ES VLA	VLA-EC	15 ppm, 80 mg/m3	vía dérmica,

vía dérmica Vía dérmica

EE

Komponendid, osad	Alused	Väärtus	Kontrolliparameetrid	Märkused
Naphthalene	EE OEL	Piirnorm	10 ppm, 50 mg/m3	

DK

Komponenter	Basis	Værdi	Kontrolparametre	Note
Naphthalene	DK OEL	GV	10 ppm, 50 mg/m3	K,
	DK OEL	S	20 ppm, 100 mg/m3	K,

K Stoffet anses for at kunne være kræftfremkaldende

DE

Inhaltsstoffe	Grundlage	Wert	Zu überwachende Parameter	Bemerkung
Naphthalene	DE TRGS 900	AGW	0,4 ppm, 2 mg/m3	H, Y, Dampf und Aerosole, einatembare Fraktion

H Hautresorptiv
Y Ein Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes (BGW) nicht befürchtet zu werden

CZ

Složky	Základ	Hodnota	Kontrolní parametry	Poznámka
Naphthalene	CZ OEL	PEL	9,4 ppm, 50 mg/m3	

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	CZ OEL	NPK-P	18,8 ppm, 100 mg/m3	
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CY

Συστατικά	Βάση	Τιμή	Παράμετροι ελέγχου	Σημείωση
Naphthalene	CY OEL	TWA	10 ppm, 50 mg/m3	

CH

Inhaltsstoffe	Grundlage	Wert	Zu überwachende Parameter	Bemerkung
Naphthalene	CH SUVA	MAK-Wert	10 ppm, 50 mg/m3	H, Carc.Cat.3, NIOSH, OSHA,

Carc.Cat.3 Krebserzeugende Stoffe Kategorie 3
H Vergiftung durch Hautresorption möglich; Bei Stoffen, welche die Haut leicht zu durchdringen vermögen, kann durch die zusätzliche Hautresorption die innere Belastung wesentlich höher werden als bei alleiniger Aufnahme durch die Atemwege.
NIOSH Nationales Institut für Arbeitssicherheit und Gesundheit
OSHA Arbeitssicherheit-und Gesundheitsbehörde

BG

Съставки	Основа	Стойност	Параметри на контрол	Бележка
Naphthalene	BG OEL	TWA	50 mg/m3	
	BG OEL	STEL	75 mg/m3	

BE

Bestanddelen	Basis	Waarde	Controleparameters	Opmerking
Diesel fuel, no. 2	BE OEL	TGG 8 hr	100 mg/m3	D,
	BE OEL	TGG 8 hr	100 mg/m3	D, damp en aerosol
Naphthalene	BE OEL	TGG 8 hr	10 ppm, 53 mg/m3	D,
	BE OEL	TGG 15 min	15 ppm, 80 mg/m3	D,

D Opname van het agens via de huid, de slijmvliezen of de ogen vormt een belangrijk deel van de totale blootstelling. Deze opname kan het gevolg zijn van zowel direct contact als zijn aanwezigheid in de lucht.

AT

Inhaltsstoffe	Grundlage	Wert	Zu überwachende Parameter	Bemerkung
Naphthalene	AT OEL	MAK-TMW	10 ppm, 50 mg/m3	H,

H Besondere Gefahr der Hautresorption

Biological exposure indices

SK

Názov látky	Č. CAS	Kontrolné parametre	Doba odberu vzorky	Aktualizácia
Naphthalene	91-20-3	1-hydroxypyren: 5,66 µg/l V tejto prílohe sú uvedené aj niektoré chemické faktory s karcinogénnym účinkom (kategória 1A a kategória 1B). Pre tieto chemické faktory platí, že dodržanie BMH nevylučuje riziko škodlivých zdravotných účinkov, preto sú určené ako základ pre biomonitoring exponovaných osôb a zdravotný dohľad vykonávaný lekárom pracovnej zdravotnej služby podľa § 13 a prílohy č. 4 nariadenia vlády Slovenskej republiky č. 356/2006 Z. z. o ochrane zdravia zamestnancov pred rizikami súvisiacimi s expozíciou karcinogénnym a mutagénnym faktorom pri práci v znení neskorších predpisov. (moč) Karcinogén kategórie 1A a 1B ()	Koniec vystavenia alebo pracovnej zmeny	2020-09-02

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		1-hydroxypyren: 25.9 nmol/l V tejto prílohe sú uvedené aj niektoré chemické faktory s karcinogénnym účinkom (kategória 1A a kategória 1B). Pre tieto chemické faktory platí, že dodržanie BMH nevylučuje riziko škodlivých zdravotných účinkov, preto sú určené ako základ pre biomonitring exponovaných osôb a zdravotný dohľad vykonávaný lekárom pracovnej zdravotnej služby podľa § 13 a prílohy č. 4 nariadenia vlády Slovenskej republiky č. 356/2006 Z. z. o ochrane zdravia zamestnancov pred rizikami súvisiacimi s expozíciou karcinogénnym a mutagénnym faktorom pri práci v znení neskorších predpisov. (moč) Karcinogén kategórie 1A a 1B ()	Koniec vystavenia alebo pracovnej zmeny	2020-09-02
		1-hydroxypyren: 3.77 µg/g kreatinínu V tejto prílohe sú uvedené aj niektoré chemické faktory s karcinogénnym účinkom (kategória 1A a kategória 1B). Pre tieto chemické faktory platí, že dodržanie BMH nevylučuje riziko škodlivých zdravotných účinkov, preto sú určené ako základ pre biomonitring exponovaných osôb a zdravotný dohľad vykonávaný lekárom pracovnej zdravotnej služby podľa § 13 a prílohy č. 4 nariadenia vlády Slovenskej republiky č. 356/2006 Z. z. o ochrane zdravia zamestnancov pred rizikami súvisiacimi s expozíciou karcinogénnym a mutagénnym faktorom pri práci v znení neskorších predpisov. (moč) Karcinogén kategórie 1A a 1B ()	Koniec vystavenia alebo pracovnej zmeny	2020-09-02
		1-hydroxypyren: 1.95 µmol/mol kreatinínu V tejto prílohe sú uvedené aj niektoré chemické faktory s karcinogénnym účinkom (kategória 1A a kategória 1B). Pre tieto chemické faktory platí, že dodržanie BMH nevylučuje riziko škodlivých zdravotných účinkov, preto sú určené ako základ pre biomonitring exponovaných osôb a zdravotný dohľad vykonávaný lekárom pracovnej zdravotnej služby podľa § 13 a prílohy č. 4 nariadenia vlády Slovenskej republiky č. 356/2006 Z. z. o ochrane zdravia zamestnancov pred rizikami súvisiacimi s expozíciou karcinogénnym a mutagénnym faktorom pri práci v znení neskorších predpisov. (moč) Karcinogén kategórie 1A a 1B ()	Koniec vystavenia alebo pracovnej zmeny	2020-09-02

GB

Substance name	CAS-No.	Control parameters	Sampling time	Update
Naphthalene	91-20-3	1-hydroxypyrene: 4 µmol/mol creatinine (Urine)	After shift	2011-12-18

CH

Stoffname	CAS-Nr.	Zu überwachende Parameter	Probennahmezeit punkt	Stand
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Naphthalene	91-20-3	1-Hydroxypyren: 3,5 µg/l nach Hydrolyse (Urin) Umwelteinflüsse; Die mit X gekennzeichneten biologischen Parameter werden auch in unterschiedlicher Quantität bei beruflich Nichtexponierten gemessen, da sie zusätzlich auf Umwelteinflüsse zurückgeführt werden können. Die Festsetzung des BAT-Wertes berücksichtigt bei diesen Parametern auch die Einflüsse von Umweltfaktoren. ()	Expositionsende, bzw. Schichtende bei Langzeitexposition: nach mehreren vorangegangenen Schichten	2023-08-01
		1-Hydroxypyren: 16 nmol/l nach Hydrolyse (Urin) Umwelteinflüsse; Die mit X gekennzeichneten biologischen Parameter werden auch in unterschiedlicher Quantität bei beruflich Nichtexponierten gemessen, da sie zusätzlich auf Umwelteinflüsse zurückgeführt werden können. Die Festsetzung des BAT-Wertes berücksichtigt bei diesen Parametern auch die Einflüsse von Umweltfaktoren. ()	Expositionsende, bzw. Schichtende bei Langzeitexposition: nach mehreren vorangegangenen Schichten	2023-08-01

8.2**Exposure controls
Engineering measures**

Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

Respiratory protection : If ventilation or other engineering controls are not adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure, a supplied-air NIOSH approved respirator may be appropriate. If exposure to harmful levels of airborne material may occur, a NIOSH approved respirator that provides protection may be appropriate, such as: Air-Purifying Respirator for Organic Vapors. A positive pressure, air-supplying respirator may be appropriate if there is potential for uncontrolled release, aerosolization, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Eye protection : Eye wash bottle with pure water. Tightly fitting safety goggles.

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Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate:. Flame retardant antistatic protective clothing. Workers should wear antistatic footwear.

Hygiene measures : When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

For additional details, see the Exposure Scenario in the Annex portion

SECTION 9: Physical and chemical properties**9.1****Information on basic physical and chemical properties****Appearance**

Form : liquid

Physical state : liquid at (101,30 kPa)

Color : Pale yellow to brown (if undyed), red to purple (dyed)

Odor : Mild

Safety data

Flash point : 54,4°C (129,9°F)
Method: ASTM D 93

Lower explosion limit : No data available

Upper explosion limit : No data available

Oxidizing properties : No

Autoignition temperature : No data available

Molecular formula : Mixture

Molecular weight : Not applicable

pH : Not applicable

Pour point : -23°C (-9°F)
Method: ASTM D97

Boiling point/boiling range : 168-354°C (334-669°F)

Vapor pressure : 13,00 kPa
at 40°C (104°F)
Method: ASTM D5191

Relative density : 0,87
at 16 °C (61 °F)

Density : 0,8471 g/cm³
Method: ASTM D4052

Water solubility : negligible

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Partition coefficient: n-octanol/water : No data available
Viscosity, kinematic : 2,4 cSt
at 40°C (104°F)
Method: ASTM D 445

Relative vapor density : No data available

Evaporation rate : No data available

Percent volatile : 100 %

9.2**Other information**

Conductivity : No data available

SECTION 10: Stability and reactivity**10.1**

Reactivity : Stable under recommended storage conditions.

10.2

Chemical stability : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3**Possibility of hazardous reactions**

Hazardous reactions : Hazardous reactions: Vapors may form explosive mixture with air.

10.4

Conditions to avoid : Heat, flames and sparks.

10.5

Materials to avoid : May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

10.6

Hazardous decomposition products : Hydrocarbons
Carbon oxides

Other data : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information**11.1****Information on toxicological effects**

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Acute oral toxicity	: Acute toxicity estimate: > 5.000 mg/kg Method: Calculation method
Diesel PC-9-HS Test Fuel Acute inhalation toxicity	: Acute toxicity estimate: 4,1 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity	
Diesel fuel, no. 2	: LD50 Dermal: > 4.300 mg/kg Species: Rabbit Sex: male and female Test substance: yes
Diesel PC-9-HS Test Fuel Skin irritation	: Skin irritation May cause skin irritation in susceptible persons.
Diesel PC-9-HS Test Fuel Eye irritation	: Vapors may cause irritation to the eyes, respiratory system and the skin.
Diesel PC-9-HS Test Fuel Sensitization	: Did not cause sensitization on laboratory animals.
Repeated dose toxicity	
Diesel fuel, no. 2	: Species: Rat, Male and female Sex: Male and female Application Route: Dermal Dose: 0, 30, 125, 500 mg/kg Exposure time: 13 wks Number of exposures: daily, 5 days/week NOEL: 30 mg/kg Method: OECD Guideline 411 Target Organs: Thymus, Liver, Bone marrow Information given is based on data obtained from similar substances. Species: Rat, Male and female Sex: Male and female Application Route: inhalation (dust/mist/fume) Dose: 0, 0.35, 0.88, 1.71 mg/l Exposure time: 13 wks Number of exposures: Twice/wk NOEL: > 1,71 mg/l Method: OECD Guideline 413
Genotoxicity in vitro	
Diesel fuel, no. 2	: Test Type: Ames test Result: positive

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Naphthalene

Test Type: Mouse lymphoma assay
Result: negative

Test Type: Ames test
Result: negative

Test Type: Sister Chromatid Exchange Assay
Result: negative

Test Type: Unscheduled DNA synthesis assay
Result: negative

Genotoxicity in vivo

Diesel fuel, no. 2 : Test Type: Dominant lethal assay
Species: Mouse
Dose: 100 or 400 ppm
Result: negative

Naphthalene

Test Type: Mouse micronucleus assay
Result: negative

Carcinogenicity

Diesel fuel, no. 2 : Species: Mouse
Sex: male
Dose: 0, 25 ul
Exposure time: lifetime
Number of exposures: 3 times/wk
Remarks: Moderate dermal carcinogen

Naphthalene

Species: Mouse
Sex: male
Dose: 10, 30 ppm
Exposure time: 105 weeks
Number of exposures: 6 hours/day, 5 days/week
Test substance: yes
Print Date: No information available.
Remarks: No evidence of carcinogenicity

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Species: Mouse
Sex: female
Dose: 10, 30 ppm
Exposure time: 105 weeks
Number of exposures: 6 hours/day, 5 days/week
Test substance: yes
Print Date: No information available.
Remarks: increased incidence of alveolar/bronchiolar adenomas

Species: Rat
Sex: male and female
Dose: 10, 30, 60 ppm
Exposure time: 105 weeks
Number of exposures: 6 hours/day, 5 days/week
Test substance: yes
Print Date: No information available.
Remarks: nose respiratory epithelial adenoma, increased incidence of olfactory neuroblastomas

Developmental Toxicity

Diesel fuel, no. 2

: Species: Rat
Application Route: Inhalation
Dose: 0, 86.9, 408.8 ppm
Number of exposures: 6 h/d
Test period: GD 6-15
Method: OECD Guideline 414
NOAEL Teratogenicity: 408.8 ppm
NOAEL Maternal: 408.8 ppm
Information given is based on data obtained from similar substances.

Species: Rat
Application Route: Dermal
Dose: 30, 125, 500, 1000 mg/kg
Exposure time: daily
Test period: GD 0-20
Method: OECD Guideline 414
NOAEL Teratogenicity: 125 mg/kg
Information given is based on data obtained from similar substances.

Naphthalene

Species: Rabbit
Application Route: oral gavage
Dose: 40, 200, 400 mg/kg
Test period: 29 d, GD 6-18
NOAEL Teratogenicity: 400 mg/kg

**Diesel PC-9-HS Test Fuel
Aspiration toxicity**

: May be fatal if swallowed and enters airways.

CMR effects

Diesel fuel, no. 2

: Carcinogenicity: Limited evidence of carcinogenicity in animal studies
Teratogenicity: Animal testing did not show any effects on fetal development.

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Naphthalene

Carcinogenicity: Limited evidence of carcinogenicity in animal studies

11.2**Information on other hazards****Diesel PC-9-HS Test Fuel****Further information**

Endocrine disrupting properties

: Solvents may degrease the skin.
 : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: Ecological information**12.1****Toxicity****Toxicity to fish**

Diesel fuel, no. 2 : LL50: 21 mg/l
 Exposure time: 96 h
 Species: Oncorhynchus mykiss (rainbow trout)
 semi-static test Method: OECD Test Guideline 203

Naphthalene LC50: 3,2 mg/l
 Exposure time: 96 h
 Species: Pimephales promelas (fathead minnow)

Toxicity to daphnia and other aquatic invertebrates

Diesel fuel, no. 2 : EC50: 2 mg/l
 Exposure time: 48 h
 Species: Daphnia magna (Water flea)
 Method: OECD Test Guideline 202

Naphthalene LC50: 2,16 mg/l
 Exposure time: 48 h
 Species: Daphnia magna (Water flea)

Toxicity to algae

Diesel fuel, no. 2 : ErL50: 22 mg/l
 Exposure time: 72 h
 Species: Raphidocellus subcapitata (algae)
 static test Analytical monitoring: no
 Method: OECD Test Guideline 201

Naphthalene EC50: 2,96 mg/l
 Exposure time: 48 h
 Species: Selenastrum capricornutum (algae)

12.2**Persistence and degradability**

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Biodegradability

Diesel fuel, no. 2 : aerobic
Result: Not readily biodegradable.
57,5 %
Testing period: 28 d
Method: OECD Test Guideline 301F

12.3**Bioaccumulative potential****Bioaccumulation**

Diesel fuel, no. 2 : Accumulation in aquatic organisms is expected.

12.4**Mobility in soil****Mobility**

Diesel fuel, no. 2 : No data available

12.5**Results of PBT and vPvB assessment**

Results of PBT assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6**Endocrine disrupting properties**

Endocrine disrupting properties : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7**Other adverse effects**

Additional ecological information : Toxic to aquatic life with long lasting effects.

12.8**Additional Information****Ecotoxicology Assessment**

Short-term (acute) aquatic hazard : Toxic to aquatic life.
Long-term (chronic) aquatic hazard : Toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations**13.1****Waste treatment methods**

The information in this SDS pertains only to the product as shipped.

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Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product : The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

For additional details, see the Exposure Scenario in the Annex portion

SECTION 14: Transport information**14.1 - 14.7****Transport information**

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

UN1202, DIESEL FUEL, COMBUSTIBLE LIQUID, III
RECLASSIFIED IN ACCORDANCE WITH EXCEPTION IN 49 CFR 173.150(F)(1).

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

UN1202, DIESEL FUEL, 3, III, (54,4 °C c.c.), MARINE POLLUTANT, (DIESEL FUEL)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

UN1202, DIESEL FUEL, 3, III

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))

UN1202, DIESEL FUEL, 3, III, (D/E), ENVIRONMENTALLY HAZARDOUS, (DIESEL FUEL)

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))

30, UN1202, DIESEL FUEL, 3, III, ENVIRONMENTALLY HAZARDOUS, (DIESEL FUEL)

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)

UN1202, DIESEL FUEL, 3, III, ENVIRONMENTALLY HAZARDOUS, (DIESEL FUEL)

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Maritime transport in bulk according to IMO instruments

SECTION 15: Regulatory information**15.1****Safety, health and environmental regulations/legislation specific for the substance or mixture
National legislation**

Commission Regulation (EU) 2020/878 of 18 June 2020 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

Water hazard class (Germany) : WGK 3 highly hazardous to water

15.2**Chemical Safety Assessment**

Components : Fuels, diesel, no. 2 270-676-1

Major Accident Hazard Legislation : 96/82/EC Update:
Not applicable

: ZEU_SEVES3 Update:
ENVIRONMENTAL HAZARDS
E2
Quantity 1: 200 t
Quantity 2: 500 t

: ZEU_SEVES3 Update:
FLAMMABLE LIQUIDS
P5c
Quantity 1: 5.000 t
Quantity 2: 50.000 t

: ZEU_SEVES3 Update:
Petroleum products: (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams),(d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)
34
Quantity 1: 2.500 t
Quantity 2: 25.000 t

Notification status

Europe REACH : This product is in full compliance according to REACH regulation 1907/2006/EC.
Switzerland CH INV : On the inventory, or in compliance with the inventory
United States of America (USA) : On or in compliance with the active portion of the

Diesel PC-9-HS Test Fuel

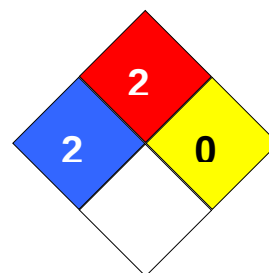
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TSCA	TSCA inventory
Canada DSL	: All components of this product are on the Canadian DSL
Australia AIIC	: On the inventory, or in compliance with the inventory
New Zealand NZIoC	: Not in compliance with the inventory
Japan ENCS	: On the inventory, or in compliance with the inventory
Japan ISHL	: On the inventory, or in compliance with the inventory
Korea KECI	: All substances in this product were registered, notified to be registered, or exempted from registration by CPChem through an Only Representative according to K-REACH regulations. Importation of this product is permitted if the Korean Importer of Record was included on CPChem's notifications or if the Importer of Record themselves notified the substances.
Philippines PICCS	: On the inventory, or in compliance with the inventory
Taiwan TCSI	: On the inventory, or in compliance with the inventory
China IECSC	: On the inventory, or in compliance with the inventory
Other TECI	: On the inventory, or in compliance with the inventory

SECTION 16: Other information

NFPA Classification : Health Hazard: 2
Fire Hazard: 2
Reactivity Hazard: 0



Revision Date : 2025-12-03
Date of last issue : 2023-07-19

Further information

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AIIC	Australian Inventory of Industrial Chemicals	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program

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CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%	ATE	Acute toxicity estimate

Full text of H-Statements referred to under sections 2 and 3.

H226	Flammable liquid and vapor.
H228	Flammable solid.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H332	Harmful if inhaled.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

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Annex

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

Main User Groups	:	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sector of use	:	SU3, SU8, SU9: Industrial Manufacturing (all), Manufacture of bulk, large scale chemicals (including petroleum products), Manufacture of fine chemicals
Process category	:	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities PROC15: Use as laboratory reagent
Environmental release category	:	ERC1: Manufacture of substances
Further information	:	Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities

2.1 Contributing scenario controlling environmental exposure for:ERC1: Manufacture of substances

Product characteristics

Remarks	Substance is complex UVCB., Predominantly hydrophobic.
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Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (tonnes/day): (Msafe) : 3.300

Environment factors not influenced by risk management

Flow rate	: 18.000 m3/d
Dilution Factor (River)	: 10
Dilution Factor (Coastal Areas)	: 100

Other given operational conditions affecting environmental exposure

Continuous use/release
Number of emission days per year : 300
Emission or Release Factor: Air : 1 %
Emission or Release Factor: Water : 0,003 %
Emission or Release Factor: Soil : 0.01 %

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Technical conditions and measures / Organizational measures

Air	: Treat air emission to provide a typical removal efficiency of (%): (Effectiveness: 90 %)
Water	: Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq$ (%): (Effectiveness: 90,3 %)
Remarks	: Common practices vary across sites thus conservative process release estimates used.
Water	: If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq$ (%): (Effectiveness: 0 %)
Remarks	: Risk from environmental exposure is driven by freshwater sediment.
Remarks	: Prevent discharge of undissolved substance to or recover from onsite wastewater.
Remarks	: If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Remarks	: Prevent discharge of undissolved substance to or recover from wastewater.
Remarks	: Do not apply industrial sludge to natural soils.
Remarks	: Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	: Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent	: 10.000 m3/d
Effectiveness (of a measure)	: 94,1 %
Percentage removed from waste water	: 94,1 %

Conditions and measures related to external treatment of waste for disposal

Waste treatment	: During manufacturing no waste of the substance is generated.
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Conditions and measures related to external recovery of waste

Recovery Methods	: During manufacturing no waste of the substance is generated.
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2.2 Contributing scenario controlling worker exposure for: PROC1: Use in closed process, no likelihood of exposure**Product characteristics**

Remarks	Substance is complex UVCB., Predominantly hydrophobic.
Remarks	: Liquid, vapour pressure < 0.5 kPa at STP
Remarks	: With potential for aerosol generation.

Frequency and duration of use

Remarks	: Covers daily exposures up to 8 hours (unless stated differently)
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Other operational conditions affecting workers exposure

Remarks	: Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Assumes a good basic standard of occupational hygiene is implemented.
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Technical conditions and measures

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

Organizational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they

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occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Control any potential exposure using measures such as contained systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of exposure potential and aware of basic actions to minimize exposures; ensure suitable personal protective equipment is available; clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; provide regular health surveillance as appropriate; identify and implement corrective actions.

2.2 Contributing scenario controlling worker exposure for: PROC2: Use in closed, continuous process with occasional controlled exposure**Product characteristics**

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

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

2.2 Contributing scenario controlling worker exposure for: PROC3: Use in closed batch process (synthesis or formulation)**Product characteristics**

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Handle substance within a closed system.

Organizational measures to prevent /limit releases, dispersion and exposure

No other specific measures identified.

2.2 Contributing scenario controlling worker exposure for: PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises**Product characteristics**

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Remarks : Liquid, vapour pressure < 0.5 kPa at STP
 Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Assumes a good basic standard of occupational hygiene is implemented.

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

Wear suitable gloves tested to EN374.

2.2 Contributing scenario controlling worker exposure for: PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities**Product characteristics**

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
 Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Drain down system prior to equipment opening or maintenance.

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

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

2.2 Contributing scenario controlling worker exposure for: PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities**Product characteristics**

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
 Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Handle substance within a closed system.

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

Wear suitable gloves tested to EN374.

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2.2 Contributing scenario controlling worker exposure for: PROC15: Use as laboratory reagent**Product characteristics**

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
 Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Assumes a good basic standard of occupational hygiene is implemented.

Organizational measures to prevent /limit releases, dispersion and exposure

No other specific measures identified.

3. Exposure estimation and reference to its source**Environment**

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value type	Level of Exposure	Risk characterization ratio (PEC/PNEC):
ERC1	Hydrocarbon Block Method with Petrorisk		Air		0,46 mg/m3	
			Freshwater		0,036 mg/L	0,54
			Freshwater sediment		1,4 mg/kg wet weight	0,61
			Marine water		0,0036 mg/L	0,054
			Marine sediment		0,14 mg/kg wet weight	0,061
			Agricultural soil		0,17 mg/kg wet weight	0,015

ERC1: Manufacture of substances

Workers/Consumers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterization ratio (PEC/PNEC):
PROC1, CS15	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,01 mg/m3	0,00
			Worker – dermal, long-term – systemic	0,34 mg/kg/d	0,11
			Worker – long-term – systemic Combined routes		0,11
PROC1, CS85	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,01
			Worker – dermal, long-term – systemic	1,37 mg/kg/d	0,47
			Worker – long-term – systemic Combined routes		0,49
PROC2, CS15, CS85	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,01
			Worker – dermal, long-term – systemic	1,37 mg/kg/d	0,47
			Worker – long-term –		0,49

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			systemic Combined routes		
PROC3, CS15	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	3 mg/m3	0,04
			Worker – dermal, long-term – systemic	0,34 mg/kg/d	0,12
			Worker – long-term – systemic Combined routes		0,16
PROC3, CS2	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	2,1 mg/m3	0,03
			Worker – dermal, long-term – systemic	0,34 mg/kg/d	0,12
			Worker – long-term – systemic Combined routes		0,15
PROC4, CS16	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	5 mg/m3	0,07
			Worker – dermal, long-term – systemic	6,86 mg/kg/d	0,47
			Worker – long-term – systemic Combined routes		0,55
PROC8a, CS39	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	2 mg/m3	0,03
			Worker – dermal, long-term – systemic	13,71 mg/kg/d	0,47
			Worker – long-term – systemic Combined routes		0,50
PROC8b, CS501, CS503	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	5 mg/m3	0,07
			Worker – dermal, long-term – systemic	6,86 mg/kg/d	0,47
			Worker – long-term – systemic Combined routes		0,55
PROC15, CS36	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	5 mg/m3	0,07
			Worker – dermal, long-term – systemic	0,34 mg/kg/d	0,12
			Worker – long-term – systemic Combined routes		0,19

PROC1: Use in closed process, no likelihood of exposure

CS15: General exposures (closed systems)

PROC1: Use in closed process, no likelihood of exposure

CS85: Bulk product storage

PROC2: Use in closed, continuous process with occasional controlled exposure

CS15: General exposures (closed systems)

CS85: Bulk product storage

PROC3: Use in closed batch process (synthesis or formulation)

CS15: General exposures (closed systems)

PROC3: Use in closed batch process (synthesis or formulation)

CS2: Process sampling

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

CS16: General exposures (open systems)

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

CS39: Equipment cleaning and maintenance

PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities

CS501: Bulk closed loading and unloading

CS503: Bulk transfers (open systems)

PROC15: Use as laboratory reagent

CS36: Laboratory activities

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

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.
Available hazard data do not support the need for a DNEL to be established for other health effects.
Risk Management Measures are based on qualitative risk characterisation. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Scaled local assessments for EU refineries have been performed using site-specific data and are attached in PETRORISK file – “Site-Specific Production” worksheet.

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.
Taking into account the findings of the air- monitoring evaluation on benzene included as the Tier 2 analysis in the Low Boiling Point Naphtha category, the default “Air Removal Efficiency” of 90% included in the SPERC has been shown to be over- conservative and that the 95% efficiency can safely be claimed in a Tier II analysis. On this basis, the Tier 2 analysis demonstrates that no refineries have RCRs>1 (see PETRORISK file in IUCLID section 13- “Tier 2 Site Specific Production worksheet”).

1. Short title of Exposure Scenario: Distribution

Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sector of use	: SU3: Industrial Manufacturing (all)
Process category	: PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15: Use as laboratory reagent
Environmental release category	: ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7: Manufacture of substances, Formulation of preparations, Formulation in materials, Industrial use of processing aids in processes and products, not becoming part of articles, Industrial use resulting in inclusion into or onto a matrix, Industrial use resulting in manufacture of another substance (use of intermediates), Industrial use of reactive

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processing aids, Industrial use of monomers for manufacture of thermoplastics, Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers, Industrial use of substances in closed systems

Further information : Bulk loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading, maintenance and associated laboratory activities. Excludes emissions during transport.

2.1 Contributing scenario controlling environmental exposure for:ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7: Manufacture of substances, Formulation of preparations, Formulation in materials, Industrial use of processing aids in processes and products, not becoming part of articles, Industrial use resulting in inclusion into or onto a matrix, Industrial use resulting in manufacture of another substance (use of intermediates), Industrial use of reactive processing aids, Industrial use of monomers for manufacture of thermoplastics, Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers, Industrial use of substances in closed systems

Product characteristics

Remarks : Substance is complex UVCB., Predominantly hydrophobic.

Maximum allowable site tonnage : 2.900
(MSafe) based on release
following total wastewater
treatment removal (tonnes/day):
(MSafe)

Environment factors not influenced by risk management

Flow rate : 18.000 m3/d
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Other given operational conditions affecting environmental exposure

Continuous use/release
Number of emission days per year : 300
Emission or Release Factor: Air : 0,1 %
Emission or Release Factor: Water : 0,0001 %
Emission or Release Factor: Soil : 0,001 %

Technical conditions and measures / Organizational measures

Air : Treat air emission to provide a typical removal efficiency of (%) (Effectiveness: 90 %)

Water : Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of ≥ (%) (Effectiveness: 0 %)

Remarks : Common practices vary across sites thus conservative process release estimates used.

Water : If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of ≥ (%) (Effectiveness: 0 %)

Remarks : Prevent discharge of undissolved substance to or recover

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- Remarks : from onsite wastewater.
- Remarks : Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).
- Remarks : No wastewater treatment required.
- Remarks : Prevent discharge of undissolved substance to or recover from wastewater.
- Remarks : Do not apply industrial sludge to natural soils.
- Remarks : Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant

- Type of Sewage Treatment Plant : Municipal sewage treatment plant
- Flow rate of sewage treatment plant effluent : 2.000 m3/d
- Effectiveness (of a measure) : 94,1 %
- Percentage removed from waste water : 94,1 %

Conditions and measures related to external treatment of waste for disposal

- Waste treatment : External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

- Recovery Methods : External recovery and recycling of waste should comply with applicable local and/or national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1: Use in closed process, no likelihood of exposure**Product characteristics**

- Remarks : Substance is complex UVCB., Predominantly hydrophobic.
- Remarks : Liquid, vapour pressure < 0.5 kPa at STP
- Remarks : With potential for aerosol generation.

Frequency and duration of use

- Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

- Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance is likely. Clean up contamination/spills as soon as they occur. Wash off skin contamination immediately. Provide basic employee training to prevent/minimize exposures and to report any skin effects that may develop., Handle substance within a closed system., Store substance within a closed system.

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

Control any potential exposure using measures such as contained systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of exposure potential and aware of basic actions to minimize exposures; ensure suitable personal protective equipment is available; clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; provide regular health surveillance as appropriate; identify and implement corrective actions.

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2.2 Contributing scenario controlling worker exposure for: PROC2: Use in closed, continuous process with occasional controlled exposure**Product characteristics**

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
 Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

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

2.2 Contributing scenario controlling worker exposure for: PROC3: Use in closed batch process (synthesis or formulation)**Product characteristics**

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
 Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Handle substance within a closed system.

Organizational measures to prevent /limit releases, dispersion and exposure

No other specific measures identified.

2.2 Contributing scenario controlling worker exposure for: PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises**Product characteristics**

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
 Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Assumes a good basic standard of occupational hygiene is implemented.

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

Wear suitable gloves tested to EN374.

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2.2 Contributing scenario controlling worker exposure for: PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities**Product characteristics**

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
 Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Drain down system prior to equipment opening or maintenance.

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

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

2.2 Contributing scenario controlling worker exposure for: PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities**Product characteristics**

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
 Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Handle substance within a closed system.

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

Wear suitable gloves tested to EN374.

2.2 Contributing scenario controlling worker exposure for: PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)**Product characteristics**

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
 Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

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Other operational conditions affecting workers exposure

Remarks : Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Assumes a good basic standard of occupational hygiene is implemented.

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

Wear suitable gloves tested to EN374.

2.2 Contributing scenario controlling worker exposure for: PROC15: Use as laboratory reagent**Product characteristics**

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Assumes a good basic standard of occupational hygiene is implemented.

Organizational measures to prevent /limit releases, dispersion and exposure

No other specific measures identified.

3. Exposure estimation and reference to its source**Environment**

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value type	Level of Exposure	Risk characterization ratio (PEC/PNEC):
ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7	Hydrocarbon Block Method with Petrorisk		Air		0,024 mg/m3	
			Freshwater		0,0018 mg/L	0,048
			Freshwater sediment		1,4 mg/kg wet weight	0,055
			Marine water		0,000057 mg/L	0,00083
			Marine sediment		0,064 mg/kg wet weight	0,0019
			Agricultural soil		0,17 mg/kg wet weight	0,0017

ERC1: Manufacture of substances
ERC2: Formulation of preparations
ERC3: Formulation in materials
ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
ERC5: Industrial use resulting in inclusion into or onto a matrix
ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)
ERC6b: Industrial use of reactive processing aids
ERC6c: Industrial use of monomers for manufacture of thermoplastics
ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers
ERC7: Industrial use of substances in closed systems

Workers/Consumers

SDS Number:100000001030

35/55

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Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterization ratio (PEC/PNEC):
PROC1, CS15	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,01 mg/m3	0,00
			Worker – dermal, long-term – systemic	0,34 mg/kg/d	0,12
			Worker – long-term – systemic Combined routes		0,12
PROC1, CS67	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,01
			Worker – dermal, long-term – systemic	1,37 mg/kg/d	0,47
			Worker – long-term – systemic Combined routes		0,49
PROC2, CS15, CS67	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,01
			Worker – dermal, long-term – systemic	1,37 mg/kg/d	0,47
			Worker – long-term – systemic Combined routes		0,49
PROC3, CS2	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	3 mg/m3	0,04
			Worker – dermal, long-term – systemic	0,34 mg/kg/d	0,12
			Worker – long-term – systemic Combined routes		0,16
PROC4, CS16	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	5 mg/m3	0,07
			Worker – dermal, long-term – systemic	6,86 mg/kg/d	0,47
			Worker – long-term – systemic Combined routes		0,55
PROC8a, CS39	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	2 mg/m3	0,03
			Worker – dermal, long-term – systemic	13,71 mg/kg/d	0,47
			Worker – long-term – systemic Combined routes		0,50
PROC8b, CS501, CS503	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	5 mg/m3	0,07
			Worker – dermal, long-term – systemic	6,86 mg/kg/d	0,47
			Worker – long-term – systemic Combined routes		0,55
PROC9, CS6	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	5 mg/m3	0,07
			Worker – dermal, long-term – systemic	6,86 mg/kg/d	0,47
			Worker – long-term – systemic Combined routes		0,55
PROC15, CS36	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	5 mg/m3	0,07
			Worker – dermal, long-term – systemic	0,34 mg/kg/d	0,12
			Worker – long-term – systemic Combined routes		0,19

PROC1: Use in closed process, no likelihood of exposure

CS15: General exposures (closed systems)

PROC1: Use in closed process, no likelihood of exposure

CS67: Storage

PROC2: Use in closed, continuous process with occasional controlled exposure

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CS15: General exposures (closed systems)
 CS67: Storage
 PROC3: Use in closed batch process (synthesis or formulation)
 CS2: Process sampling
 PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
 CS16: General exposures (open systems)
 PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
 CS39: Equipment cleaning and maintenance
 PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities
 CS501: Bulk closed loading and unloading
 CS503: Bulk transfers (open systems)
 PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
 CS6: Drum and small package filling
 PROC15: Use as laboratory reagent
 CS36: Laboratory activities

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

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.
 Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
 Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.
 Available hazard data do not support the need for a DNEL to be established for other health effects.
 Risk Management Measures are based on qualitative risk characterisation. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

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

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

Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sector of use	: SU3, SU8, SU9: Industrial Manufacturing (all), Manufacture of bulk, large scale chemicals (including petroleum products), Manufacture of fine chemicals
Process category	: PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/

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Environmental release category	:	discharging) from/ to vessels/ large containers at dedicated facilities PROC15: Use as laboratory reagent ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)
Further information	:	Use of substance as an intermediate (not related to Strictly Controlled Conditions). Includes recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).

2.1 Contributing scenario controlling environmental exposure for:ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)**Product characteristics**

Remarks Substance is complex UVCB., Predominantly hydrophobic.

Maximum allowable site tonnage : 410.000
(MSafe) based on release
following total wastewater
treatment removal (kg/d):(Msafe)

Environment factors not influenced by risk management

Flow rate : 18.000 m3/d
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Other given operational conditions affecting environmental exposure

Continuous use/release
Number of emission days per year : 300
Emission or Release Factor: Air : 0,1 %
Emission or Release Factor: Water : 0,003 %
Emission or Release Factor: Soil : 0,1 %

Technical conditions and measures / Organizational measures

Air : Treat air emission to provide a typical removal efficiency of (%) (Effectiveness: 80 %)

Water : Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq$ (%): (Effectiveness: 51,6 %)

Remarks : Common practices vary across sites thus conservative process release estimates used.

Water : If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq$ (%): (Effectiveness: 0 %)

Remarks : Risk from environmental exposure is driven by freshwater sediment.

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

Remarks : If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.

Remarks : Prevent discharge of undissolved substance to or recover from wastewater.

Remarks : Do not apply industrial sludge to natural soils.

Remarks : Sludge should be incinerated, contained or reclaimed.

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Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant
 Flow rate of sewage treatment : 2.000 m3/d
 plant effluent
 Effectiveness (of a measure) : 94,1 %
 Percentage removed from waste : 94,1 %
 water

Conditions and measures related to external treatment of waste for disposal

Waste treatment : This substance is consumed during use and no waste of the substance is generated.

Conditions and measures related to external recovery of waste

Recovery Methods : This substance is consumed during use and no waste of the substance is generated.

2.2 Contributing scenario controlling worker exposure for: PROC1: Use in closed process, no likelihood of exposure**Product characteristics**

Remarks : Substance is complex UVCB., Predominantly hydrophobic.
 Remarks : Liquid, vapour pressure < 0.5 kPa at STP
 Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance is likely. Clean up contamination/spills as soon as they occur. Wash off skin contamination immediately. Provide basic employee training to prevent/minimize exposures and to report any skin effects that may develop., Handle substance within a closed system., Store substance within a closed system.

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

Control any potential exposure using measures such as contained systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of exposure potential and aware of basic actions to minimize exposures; ensure suitable personal protective equipment is available; clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; provide regular health surveillance as appropriate; identify and implement corrective actions.

2.2 Contributing scenario controlling worker exposure for: PROC2: Use in closed, continuous process with occasional controlled exposure**Product characteristics**

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
 Remarks : With potential for aerosol generation.

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Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

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

2.2 Contributing scenario controlling worker exposure for: PROC3: Use in closed batch process (synthesis or formulation)**Product characteristics**

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Handle substance within a closed system.

Organizational measures to prevent /limit releases, dispersion and exposure

No other specific measures identified.

2.2 Contributing scenario controlling worker exposure for: PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises**Product characteristics**

Remarks : Liquid, vapour pressure < 0.5 kPa at STP

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Assumes a good basic standard of occupational hygiene is implemented.

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

Wear suitable gloves tested to EN374.

2.2 Contributing scenario controlling worker exposure for: PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities**Product characteristics**

Remarks : Liquid, vapour pressure < 0.5 kPa at STP

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Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Drain down system prior to equipment opening or maintenance.

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

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

2.2 Contributing scenario controlling worker exposure for: PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities
Product characteristics

Remarks : Liquid, vapour pressure < 0.5 kPa at STP

Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Handle substance within a closed system.

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

Wear suitable gloves tested to EN374.

2.2 Contributing scenario controlling worker exposure for: PROC15: Use as laboratory reagent
Product characteristics

Remarks : Liquid, vapour pressure < 0.5 kPa at STP

Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Assumes a good basic standard of occupational hygiene is implemented.

Organizational measures to prevent /limit releases, dispersion and exposure

No other specific measures identified.

3. Exposure estimation and reference to its source

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Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value type	Level of Exposure	Risk characterization ratio (PEC/PNEC):
ERC6a	Hydrocarbon Block Method with Petrorisk		Air		0,022 mg/m3	
			Freshwater		0,0045 mg/L	0,067
			Freshwater sediment		1,5 mg/kg wet weight	0,12
			Marine water		0,000057 mg/L	0,0067
			Marine sediment		0,079 mg/kg wet weight	0,085
			Agricultural soil		0,17 mg/kg wet weight	0,0017

ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

Workers/Consumers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterization ratio (PEC/PNEC):
PROC1, CS15	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,01 mg/m3	0,00
			Worker – dermal, long-term – systemic	0,34 mg/kg/d	0,11
			Worker – long-term – systemic Combined routes		0,11
PROC1, CS85	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,01
			Worker – dermal, long-term – systemic	1,37 mg/kg/d	0,47
			Worker – long-term – systemic Combined routes		0,49
PROC2, CS15, CS85	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,01
			Worker – dermal, long-term – systemic	1,37 mg/kg/d	0,47
			Worker – long-term – systemic Combined routes		0,49
PROC3, CS15	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	3 mg/m3	0,04
			Worker – dermal, long-term – systemic	0,34 mg/kg/d	0,12
			Worker – long-term – systemic Combined routes		0,16
PROC3, CS2	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	2,1 mg/m3	0,03
			Worker – dermal, long-term – systemic	0,34 mg/kg/d	0,12
			Worker – long-term – systemic Combined routes		0,15
PROC4, CS16	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	5 mg/m3	0,07
			Worker – dermal, long-term – systemic	6,86 mg/kg/d	0,47
			Worker – long-term – systemic Combined routes		0,55
PROC8a, CS39	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	2 mg/m3	0,03
			Worker – dermal, long-term – systemic	13,71 mg/kg/d	0,47

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			term – systemic		
			Worker – long-term – systemic Combined routes		0,50
PROC8b, CS501, CS503	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	5 mg/m3	0,07
			Worker – dermal, long-term – systemic	6,86 mg/kg/d	0,47
			Worker – long-term – systemic Combined routes		0,55
PROC15, CS36	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	5 mg/m3	0,07
			Worker – dermal, long-term – systemic	0,34 mg/kg/d	0,12
			Worker – long-term – systemic Combined routes		0,19

PROC1: Use in closed process, no likelihood of exposure

CS15: General exposures (closed systems)

PROC1: Use in closed process, no likelihood of exposure

CS85: Bulk product storage

PROC2: Use in closed, continuous process with occasional controlled exposure

CS15: General exposures (closed systems)

CS85: Bulk product storage

PROC3: Use in closed batch process (synthesis or formulation)

CS15: General exposures (closed systems)

PROC3: Use in closed batch process (synthesis or formulation)

CS2: Process sampling

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

CS16: General exposures (open systems)

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

CS39: Equipment cleaning and maintenance

PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities

CS501: Bulk closed loading and unloading

CS503: Bulk transfers (open systems)

PROC15: Use as laboratory reagent

CS36: Laboratory activities

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

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.

Available hazard data do not support the need for a DNEL to be established for other health effects.

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

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

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

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Main User Groups	:	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sector of use	:	SU3: Industrial Manufacturing (all)
Process category	:	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities PROC16: Using material as fuel sources, limited exposure to unburned product to be expected
Environmental release category	:	ERC7: Industrial use of substances in closed systems
Further information	:	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

Air	: Treat air emission to provide a typical removal efficiency of (%) (Effectiveness: 95 %)
Water	: Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq$ (%) (Effectiveness: 97,7 %)
Remarks	: Common practices vary across sites thus conservative

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Water	: process release estimates used.
	: If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq$ (%): (Effectiveness: 60,4 %)
Remarks	: Risk from environmental exposure is driven by freshwater sediment.
Remarks	: If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Remarks	: Prevent discharge of undissolved substance to or recover from wastewater.
Remarks	: Do not apply industrial sludge to natural soils.
Remarks	: Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	: Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent	: 2.000 m3/d
Effectiveness (of a measure)	: 94,1 %
Percentage removed from waste water	: 97,7 %

Conditions and measures related to external treatment of waste for disposal

Remarks	: Combustion emissions limited by required exhaust emission controls.
Remarks	: Combustion emissions considered in regional exposure assessment.

Conditions and measures related to external recovery of waste

Recovery Methods	: External recovery and recycling of waste should comply with applicable local and/or national regulations.
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2.2 Contributing scenario controlling worker exposure for: PROC1: Use in closed process, no likelihood of exposure**Product characteristics**

Remarks	Substance is complex UVCB., Predominantly hydrophobic.
Remarks	: Liquid, vapour pressure < 0.5 kPa at STP
Remarks	: With potential for aerosol generation.

Frequency and duration of use

Remarks	: Covers daily exposures up to 8 hours (unless stated differently)
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Other operational conditions affecting workers exposure

Remarks	: Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.
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Technical conditions and measures

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance is likely. Clean up contamination/spills as soon as they occur. Wash off skin contamination immediately. Provide basic employee training to prevent/minimize exposures and to report any skin effects that may develop., Store substance within a closed system.

Organizational measures to prevent /limit releases, dispersion and exposure

No other specific measures identified.

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

Control any potential exposure using measures such as contained systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines

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prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of exposure potential and aware of basic actions to minimize exposures; ensure suitable personal protective equipment is available; clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; provide regular health surveillance as appropriate; identify and implement corrective actions.

2.2 Contributing scenario controlling worker exposure for: PROC2: Use in closed, continuous process with occasional controlled exposure
Product characteristics

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
 Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Store substance within a closed system.

2.2 Contributing scenario controlling worker exposure for: PROC3: Use in closed batch process (synthesis or formulation)
Product characteristics

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
 Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Organizational measures to prevent /limit releases, dispersion and exposure

No other specific measures identified.

2.2 Contributing scenario controlling worker exposure for: PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
Product characteristics

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
 Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

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Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Drain down system prior to equipment opening or maintenance.

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

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

2.2 Contributing scenario controlling worker exposure for: PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities
Product characteristics

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

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

Wear suitable gloves tested to EN374.

2.2 Contributing scenario controlling worker exposure for: PROC16: Using material as fuel sources, limited exposure to unburned product to be expected
Product characteristics

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Organizational measures to prevent /limit releases, dispersion and exposure

No other specific measures identified.

3. Exposure estimation and reference to its source**Environment**

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value type	Level of Exposure	Risk characterization ratio (PEC/PNEC):
ERC7	Hydrocarbon Block		Air		0,29 mg/m3	

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	Method with Petrorisk					
			Freshwater		0,055 mg/L	0,8
			Freshwater sediment		2,1 mg/kg wet weight	0,91
			Marine water		0,0055 mg/L	0,08
			Marine sediment		0,21 mg/kg wet weight	0,091
			Agricultural soil		0,17 mg/kg wet weight	0,01

ERC7: Industrial use of substances in closed systems

Workers/Consumers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterization ratio (PEC/PNEC):
PROC1, CS15	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,01
			Worker – dermal, long- term – systemic	1,37 mg/kg/d	0,47
			Worker – long-term – systemic Combined routes		0,49
PROC1, CS67	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,01
			Worker – dermal, long- term – systemic	0,14 mg/kg/d	0,05
			Worker – long-term – systemic Combined routes		0,06
PROC2, CS15	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,01
			Worker – dermal, long- term – systemic	1,37 mg/kg/d	0,47
			Worker – long-term – systemic Combined routes		0,49
PROC2, CS67	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,01
			Worker – dermal, long- term – systemic	0,14 mg/kg/d	0,05
			Worker – long-term – systemic Combined routes		0,06
PROC3, CS107	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,01
			Worker – dermal, long- term – systemic	0,34 mg/kg/d	0,12
			Worker – long-term – systemic Combined routes		0,13
PROC8a, CS39, CS103	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,01
			Worker – dermal, long- term – systemic	13,71 mg/kg/d	0,47
			Worker – long-term – systemic Combined routes		0,49
PROC8b, CS8, CS14	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	5 mg/m3	0,07
			Worker – dermal, long- term – systemic	6,86 mg/kg/d	0,47
			Worker – long-term – systemic Combined routes		0,55
PROC16, CS107	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,03
			Worker – dermal, long- term – systemic	0,03 mg/kg/d	0,01
			Worker – long-term –		0,02

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			systemic Combined routes		
PROC1: Use in closed process, no likelihood of exposure CS15: General exposures (closed systems) PROC1: Use in closed process, no likelihood of exposure CS67: Storage PROC2: Use in closed, continuous process with occasional controlled exposure CS15: General exposures (closed systems) PROC2: Use in closed, continuous process with occasional controlled exposure CS67: Storage PROC3: Use in closed batch process (synthesis or formulation) CS107: (closed systems) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities CS39: Equipment cleaning and maintenance CS103: Vessel and container cleaning PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities CS8: Drum/batch transfers CS14: Bulk transfers PROC16: Using material as fuel sources, limited exposure to unburned product to be expected CS107: (closed systems)					

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

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.
 Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
 Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.
 Available hazard data do not support the need for a DNEL to be established for other health effects.
 Risk Management Measures are based on qualitative risk characterisation. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

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

1. Short title of Exposure Scenario: **Use as a fuel – professional**

Main User Groups	: SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Sector of use	: SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process category	: PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

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	PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC16: Using material as fuel sources, limited exposure to unburned product to be expected
Environmental release category	: ERC9a, ERC9b: Wide dispersive indoor use of substances in closed systems, Wide dispersive outdoor use of substances in closed systems
Further information	: Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

2.1 Contributing scenario controlling environmental exposure for:ERC9a, ERC9b: Wide dispersive indoor use of substances in closed systems, Wide dispersive outdoor use of substances in closed systems

Remarks	Substance is complex UVCB., Predominantly hydrophobic.
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Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d):(MSafe) : 140.000

Flow rate	: 18.000 m3/d
Dilution Factor (River)	: 10
Dilution Factor (Coastal Areas)	: 100

Continuous use/release
Number of emission days per year : 365

Air	: Release fraction to air from wide dispersive use (regional use only)
Remarks	: < 0.001 %
Water	: Release fraction to wastewater wide dispersive use
Remarks	: < 0.001 %
Soil	: Release fraction to soil from wide dispersive use (regional use only)
Remarks	: < 0.001 %
Remarks	: Common practices vary across sites thus conservative process release estimates used.
Remarks	: Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).
Remarks	: No wastewater treatment required.
Air	: Treat air emission to provide a typical removal efficiency of (%):
Remarks	: Not applicable
Water	: Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq$ (%): (Effectiveness: 0 %)
Water	: If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq$ (%):

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- Remarks : (Effectiveness: 0 %)
- Remarks : Prevent discharge of undissolved substance to or recover from wastewater.
- Remarks : Do not apply industrial sludge to natural soils.
- Remarks : Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant

- Type of Sewage Treatment Plant : Municipal sewage treatment plant
- Flow rate of sewage treatment plant effluent : 2.000 m3/d
- Effectiveness (of a measure) : 94,1 %
- Percentage removed from waste water : 94,1 %

Conditions and measures related to external treatment of waste for disposal

- Remarks : Combustion emissions limited by required exhaust emission controls.
- Remarks : Combustion emissions considered in regional exposure assessment.

Conditions and measures related to external recovery of waste

- Recovery Methods : External recovery and recycling of waste should comply with applicable local and/or national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1: Use in closed process, no likelihood of exposure**Product characteristics**

- Remarks : Substance is complex UVCB., Predominantly hydrophobic.
- Remarks : Liquid, vapour pressure < 0.5 kPa at STP
- Remarks : With potential for aerosol generation.

Frequency and duration of use

- Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

- Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance is likely. Clean up contamination/spills as soon as they occur. Wash off skin contamination immediately. Provide basic employee training to prevent/minimize exposures and to report any skin effects that may develop., Store substance within a closed system.

Organizational measures to prevent /limit releases, dispersion and exposure

No other specific measures identified.

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

Control any potential exposure using measures such as contained systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of exposure potential and aware of basic actions to minimize exposures; ensure suitable personal protective equipment is available; clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; provide regular health surveillance as appropriate; identify and implement corrective actions.

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2.2 Contributing scenario controlling worker exposure for: PROC2: Use in closed, continuous process with occasional controlled exposure**Product characteristics**

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Organizational measures to prevent /limit releases, dispersion and exposure

No other specific measures identified.

2.2 Contributing scenario controlling worker exposure for: PROC3: Use in closed batch process (synthesis or formulation)**Product characteristics**

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Organizational measures to prevent /limit releases, dispersion and exposure

No other specific measures identified.

2.2 Contributing scenario controlling worker exposure for: PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities**Product characteristics**

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

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

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Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

2.2 Contributing scenario controlling worker exposure for: PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities

Product characteristics

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

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

Wear suitable gloves tested to EN374.

2.2 Contributing scenario controlling worker exposure for: PROC16: Using material as fuel sources, limited exposure to unburned product to be expected

Product characteristics

Remarks : Liquid, vapour pressure < 0.5 kPa at STP
Remarks : With potential for aerosol generation.

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour), Ensure operation is undertaken outdoors.

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value type	Level of Exposure	Risk characterization ratio (PEC/PNEC):
ERC9a, ERC9b	Hydrocarbon Block Method with Petrorisk		Air		0,02 mg/m3	
			Freshwater		0,0015 mg/L	0,043
			Freshwater sediment		1,4 mg/kg wet weight	0,05
			Marine water		0,000028 mg/L	0,00041
			Marine sediment		0,063 mg/kg wet weight	0,0014

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			Agricultural soil		0,17 mg/kg wet weight	0,0054
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ERC9a: Wide dispersive indoor use of substances in closed systems

ERC9b: Wide dispersive outdoor use of substances in closed systems

Workers/Consumers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterization ratio (PEC/PNEC):
PROC1, CS15	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,01
			Worker – dermal, long-term – systemic	1,34 mg/kg/d	0,46
			Worker – long-term – systemic Combined routes		0,48
PROC1, CS67	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,01 mg/m3	0,00
			Worker – dermal, long-term – systemic	0,34 mg/kg/d	0,12
			Worker – long-term – systemic Combined routes		0,12
PROC2, CS15	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,01
			Worker – dermal, long-term – systemic	1,34 mg/kg/d	0,46
			Worker – long-term – systemic Combined routes		0,48
PROC3, CS107	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,01
			Worker – dermal, long-term – systemic	0,34 mg/kg/d	0,12
			Worker – long-term – systemic Combined routes		0,13
PROC8a, CS39	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,01
			Worker – dermal, long-term – systemic	13,71 mg/kg/d	0,47
			Worker – long-term – systemic Combined routes		0,49
PROC8a, CS103	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	5 mg/m3	0,07
			Worker – dermal, long-term – systemic	13,71 mg/kg/d	0,47
			Worker – long-term – systemic Combined routes		0,55
PROC8b, CS14, CS507	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	5 mg/m3	0,07
			Worker – dermal, long-term – systemic	6,86 mg/kg/d	0,47
			Worker – long-term – systemic Combined routes		0,55
PROC8b, CS8	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,01
			Worker – dermal, long-term – systemic	6,86 mg/kg/d	0,47
			Worker – long-term – systemic Combined routes		0,49
PROC16, CS107	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	14 mg/m3	0,20
			Worker – dermal, long-term – systemic	0,34 mg/kg/d	0,12
			Worker – long-term –		0,32

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			systemic Combined routes		
PROC1: Use in closed process, no likelihood of exposure CS15: General exposures (closed systems) PROC1: Use in closed process, no likelihood of exposure CS67: Storage PROC2: Use in closed, continuous process with occasional controlled exposure CS15: General exposures (closed systems) PROC3: Use in closed batch process (synthesis or formulation) CS107: (closed systems) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities CS39: Equipment cleaning and maintenance PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities CS103: Vessel and container cleaning PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities CS14: Bulk transfers CS507: Refueling PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities CS8: Drum/batch transfers PROC16: Using material as fuel sources, limited exposure to unburned product to be expected CS107: (closed systems)					

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

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.
Available hazard data do not support the need for a DNEL to be established for other health effects.
Risk Management Measures are based on qualitative risk characterisation. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

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