SOLTROL® 10 Isoparaffin Solvent

Version 1.14 Revision Date 2023-05-19

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 identifier

Product information

Product Name : SOLTROL® 10 Isoparaffin Solvent
Material : 1089830, 1017316, 1017315, 1017318, 1017317, 1017319, 1017320, 1017321, 1017314

EC-No.Registration number

Chemical name	CAS-No. EC-No. Index No.	Legal Entity Registration number
Hydrocarbons C7-C8, isoalkanes, < 2% aromatics		Chevron Phillips Chemicals International NV 01-2120769768-30-0000
Hydrocarbons C7-C8, isoalkanes, < 2% aromatics		Chevron Phillips Chemical Company LP 01-2120769768-30-0001

1.2

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

Relevant Identified Uses Supported : Use as a fuel - industrial
Use as a fuel – professional

1.3

Details of the supplier of the safety data sheet

Company : Chevron Phillips Chemical Company LP
Specialty Chemicals
10001 Six Pines Drive
The Woodlands, TX 77380

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:

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

Responsible Department	:	Product Safety and Toxicology Group
E-mail address	:	SDS@CPChem.com
Website	:	www.CPChem.com

SECTION 2: Hazards identification

2.1

Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Flammable liquids, Category 2	H225: Highly flammable liquid and vapor.
Skin irritation, Category 2	H315: Causes skin irritation.
Specific target organ toxicity - single exposure, Category 3, Central nervous system	H336: May cause drowsiness or dizziness.
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 :	H225	Highly flammable liquid and vapor.
	H304	May be fatal if swallowed and enters airways.
	H315	Causes skin irritation.
	H336	May cause drowsiness or dizziness.
	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.
	P273	Avoid release to the environment.
	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.

Hazardous ingredients which must be listed on the label:

- 70024-92-9 Isoalkanes C7-8

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

3.1 - 3.2
Substance or Mixture

Synonyms	:	Not Established
Molecular formula	:	UVCB

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
Hydrocarbons C7-C8, isoalkanes, < 2% aromatics		Flam. Liq. 2; H225 Skin Irrit. 2; H315 STOT SE 3; H336 Asp. Tox. 1; H304 Aquatic Chronic 2; H411	100	

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.
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	:	No data available.

SECTION 5: Firefighting measures

Flash point	:	-11°C (12°F) Method: Tag closed cup
Autoignition temperature	:	420°C (788°F)

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.
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). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.
Hazardous decomposition products	:	Carbon Dioxide. 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

Reference to other sections : For personal protection see section 8. For disposal considerations see section 13.

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). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

7.2

Conditions for safe storage, including any incompatibilities

Storage

Requirements for storage areas and containers : 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.

7.3

Specific End Use

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

SECTION 8: Exposure controls/personal protection

8.1

Control parameters
Ingredients with workplace control parameters

Chevron Phillips Chemical Company LP

Components	Basis	Value	Control parameters	Note
Hydrocarbons C7-C8, isoalkanes, < 2% aromatics	Manufacturer	TWA	300 ppm,	

SK

Zložky	Podstata	Hodnota	Kontrolné parametre	Poznámka
2,2,4-Trimethylpentane (Isooctane)	SK OEL	NPEL krátkodobý	300 ppm, 1.400 mg/m3	
	SK OEL	NPEL priemerný	200 ppm, 900 mg/m3	

SI

Sestavine	Osnova	Vrednost	Parametri nadzora	Pripomba
Isoalkanes C7-8	SI OEL	MV	700 mg/m3	
2,2,4-Trimethylpentane (Isooctane)	SI OEL	MV	500 ppm, 2.400 mg/m3	
	SI OEL	KTV	1.000 ppm, 4.800 mg/m3	

SE

Beståndsdelar	Grundval	Värde	Kontrollparametrar	Anmärkning
2,2,4-Trimethylpentane (Isooctane)	SE AFS	NGV	200 ppm, 900 mg/m3	
	SE AFS	KGV	300 ppm, 1.400 mg/m3	V,

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

MK

Съставки	Основа	Стойност	Параметри на контрол	Бележка
2,2,4-Trimethylpentane (Isooctane)	MK OEL	MV	500 ppm, 2.400 mg/m3	

LV

Sastāvdaļas	Bāze	Vērtība	Pārvaldības parametri	Piezīme
2,2,4-Trimethylpentane (Isooctane)	LV OEL	AER 8 st	100 mg/m3	
	LV OEL	AER īslaicīgā	300 mg/m3	

LT

Komponentai	Šaltinis	Verté	Kontrolės parametrai	Pastaba
2,2,4-Trimethylpentane (Isooctane)	LT OEL	IPRD	200 ppm, 900 mg/m3	
	LT OEL	TPRD	300 ppm, 1.400 mg/m3	

HU

Komponensek	Bázis	Érték	Ellenőrzési paraméterek	Megjegyzés
2,2,4-Trimethylpentane (Isooctane)	HU OEL	AK-érték	2.350 mg/m3	R, i,
	HU OEL	CK-érték	4.700 mg/m3	R, i,

i Ingerlő anyag (izgatja a bőrt, nyálkahártyát, szemet vagy mindhármat)
R Azok az anyagok, amelyek egészségkárosító hatása RÖVID expozíció hatására jelentkezik. Korrigált ÁK = ÁK x 8/a napi óraszám

FR

Composants	Base	Valeur	Paramètres de contrôle	Note
Isoalkanes C7-8	FR VLE	VME	1.000 mg/m3	Valeurs limites indicatives, Vapeur
	FR VLE	VLCT (VLE)	1.500 mg/m3	Valeurs limites indicatives, Vapeur
2,2,4-Trimethylpentane (Isooctane)	FR VLE	VME	1.000 mg/m3	Valeurs limites indicatives, Vapeur
	FR VLE	VLCT (VLE)	1.500 mg/m3	Valeurs limites indicatives, Vapeur

Valeurs limites indicatives Valeurs limites indicatives

FI

Aineosat	Peruste	Arvo	Valvontaa koskevat muuttujat	Huomautus
2,2,4-Trimethylpentane (Isooctane)	FI OEL	HTP-arvot 8h	300 ppm, 1.400 mg/m3	
	FI OEL	HTP-arvot 15 min	380 ppm, 1.800 mg/m3	

ES

Componentes	Base	Valor	Parámetros de control	Nota
2,2,4-Trimethylpentane (Isooctane)	ES VLA	VLA-ED	300 ppm, 1.420 mg/m3	

EE

Komponendid, osad	Alused	Väärtus	Kontrolliparameetrid	Märkused
2,2,4-Trimethylpentane (Isooctane)	EE OEL	Piirnorm	200 ppm, 900 mg/m3	
	EE OEL	Lühiajalise	300 ppm, 1.400 mg/m3	

		kokkupuute piirnorm		

CH

Inhaltsstoffe	Grundlage	Wert	Zu überwachende Parameter	Bemerkung
2,2,4-Trimethylpentane (Isooctane)	CH SUVA	MAK-Wert	300 ppm, 1.400 mg/m3	NIOSH,
	CH SUVA	KZGW	600 ppm, 2.800 mg/m3	NIOSH,
	CH SUVA	MAK-Wert	100 ppm, 470 mg/m3	
	CH SUVA	KZGW	200 ppm, 940 mg/m3	

NIOSH National Institute for Occupational Safety and Health

AT

Inhaltsstoffe	Grundlage	Wert	Zu überwachende Parameter	Bemerkung
2,2,4-Trimethylpentane (Isooctane)	AT OEL	MAK-TMW	300 ppm, 1.400 mg/m3	
	AT OEL	MAK-KZW	1.200 ppm, 5.600 mg/m3	

DNEL

Hydrocarbons C7-C8, isoalkanes, < 2% aromatics : End Use: Workers
Routes of exposure: Inhalation
Potential health effects: Long-term systemic effects
Value: 2085 mg/m3

End Use: Workers
Routes of exposure: Dermal
Potential health effects: Acute local effects
Value: 300 mg/kg

End Use: Consumers
Routes of exposure: Inhalation
Potential health effects: Long-term systemic effects
Value: 447 mg/m3

End Use: Consumers
Routes of exposure: Dermal
Potential health effects: Long-term systemic effects
Value: 149 mg/kg

End Use: Consumers
Routes of exposure: Oral
Potential health effects: Long-term systemic effects
Value: 149 mg/kg

8.2

Exposure controls
Engineering measures

Adequate ventilation to control airborned 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.
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.

SECTION 9: Physical and chemical properties

9.1

Information on basic physical and chemical properties

Appearance

Form	:	liquid
Physical state	:	liquid
Color	:	Colorless at room temperature
Odor	:	Mild

Safety data

Flash point	:	-11°C (12°F) Method: Tag closed cup
Lower explosion limit	:	1 %(V)
Oxidizing properties	:	No
Autoignition temperature	:	420°C (788°F)
Molecular formula	:	UVCB
Molecular weight	:	Not applicable
pH	:	Not applicable
Pour point	:	No data available

Boiling point/boiling range	:	93,3-104,4°C (199,9-219,9°F)
Vapor pressure	:	114,64 MMHG at 37,8°C (100,0°F)
Relative density	:	0,697 at 15,6 °C (60,1 °F)
Water solubility	:	negligible
Partition coefficient: n-octanol/water	:	No data available
Viscosity, kinematic	:	0,56 cSt at 40°C (104°F)
Relative vapor density	:	2 (Air = 1.0)
Evaporation rate	:	1
Percent volatile	:	> 99 % < 0,01 %

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: Hazardous polymerization does not occur.

Further information: No hazards to be specially mentioned.

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 : Carbon Dioxide
Carbon oxides

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

SECTION 11: Toxicological information

11.1

Information on toxicological effects

Acute oral toxicity

Hydrocarbons C7-C8, isoalkanes, < 2% aromatics : LD50: > 7.100 - 7.800 mg/kg
Species: Rat
Sex: male
Method: OECD Test Guideline 401
Information given is based on data obtained from similar substances.

Acute inhalation toxicity

Hydrocarbons C7-C8, isoalkanes, < 2% aromatics : LC50: > 9,4 mg/l
Exposure time: 4 h
Species: Rat
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration.
Information given is based on data obtained from similar substances.

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Skin irritation : Skin irritation

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Eye irritation : Vapors may cause irritation to the eyes, respiratory system and the skin.

SOLTROL® 10 Isoparaffin Solvent
Sensitization : Did not cause sensitization on laboratory animals.
Information given is based on data obtained from similar substances.

Repeated dose toxicity

Hydrocarbons C7-C8, isoalkanes, < 2% aromatics : Species: Rat, male and female
Sex: male and female
Application Route: Inhalation
Dose: 0, 400, 1200 ppm
Exposure time: 12 wk
Number of exposures: 6 hr/d, 5 d/wk
NOEL: 1200 ppm

Method: OECD Test Guideline 413
Target Organs: Kidney
Information given is based on data obtained from similar substances.

Genotoxicity in vitro

Hydrocarbons C7-C8, isoalkanes, < 2% aromatics	:	Test Type: Ames test Result: negative

Reproductive toxicity

Hydrocarbons C7-C8, isoalkanes, < 2% aromatics	:	Species: Rat Sex: male and female Application Route: inhalation (vapor) Number of exposures: 6 h/d; 5 d/wk Method: OECD Test Guideline 416 NOAEL Parent: 10,560 mg/m3 NOAEL F1: 31, 680 mg/m3 NOAEL F2: 31,680 mg/m3 Fertility and developmental toxicity tests did not reveal any effect on reproduction. Information given is based on data obtained from similar substances.

Developmental Toxicity

Hydrocarbons C7-C8, isoalkanes, < 2% aromatics	:	Species: Rat Application Route: Inhalation Dose: 500, 2000, 7000 ppm Exposure time: 6h/d Test period: GD 6-15 Method: OECD Guideline 414 NOAEL Teratogenicity: > 21,000 mg/m3 NOAEL Maternal: > 21,000 mg/m3 Animal testing did not show any effects on fetal development. Information given is based on data obtained from similar substances.

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Aspiration toxicity : May be fatal if swallowed and enters airways.

Specific Target Organ Toxicity (Single Exposure)

Hydrocarbons C7-C8, isoalkanes, < 2% aromatics	:	Route of Exposure:Inhalation Target Organs: Central nervous system Assessment: May cause drowsiness or dizziness.

CMR effects

Hydrocarbons C7-C8, isoalkanes, < 2% aromatics	:	Carcinogenicity: Not available Mutagenicity: In vitro tests did not show mutagenic effects Reproductive toxicity: No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

11.2 Information on other hazards

SOLTROL® 10 Isoparaffin Solvent

Further information : Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Concentrations substantially above the TLV value may cause narcotic effects. Solvents may degrease the skin.

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 12: Ecological information

12.1

Toxicity

Ecotoxicity effects

Toxicity to fish

Hydrocarbons C7-C8, isoalkanes, < 2% aromatics : LC50: 5,4 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)
Method: OECD Test Guideline 203
Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates

Hydrocarbons C7-C8, isoalkanes, < 2% aromatics : EL50: 143 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
static test Method: OECD Test Guideline 202

Toxicity to algae

Hydrocarbons C7-C8, isoalkanes, < 2% aromatics : EL50: 29,0 mg/l
Exposure time: 72 h
Species: Raphidocellus subcapitata (algae)
Growth inhibition Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity)

Hydrocarbons C7-C8, isoalkanes, < 2% aromatics : NOELR: 0,778 mg/l
Exposure time: 28 d
Species: Oncorhynchus mykiss (rainbow trout)
Method: QSAR modeled data

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

Hydrocarbons C7-C8, isoalkanes, < 2% aromatics : NOELR: 1 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

Method: OECD Test Guideline 211
Information given is based on data obtained from similar substances.

12.2
Persistence and degradability

Biodegradability

Hydrocarbons C7-C8, isoalkanes, < 2% aromatics	:	Result: Not readily biodegradable. 60 % Testing period: 60 d Method: OECD Test Guideline 301F Expected to be inherently biodegradable. Information given is based on data obtained from similar substances.

12.3
Bioaccumulative potential
Elimination information (persistence and degradability)

Bioaccumulation

Hydrocarbons C7-C8, isoalkanes, < 2% aromatics	:	This material is not expected to bioaccumulate.

12.4
Mobility in soil

Mobility	:	Medium: Air Method: Calculation, Mackay Level III Fugacity Model Content: 100 %

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
Hydrocarbons C7-C8, isoalkanes, < 2% aromatics : Toxic to aquatic life.

Long-term (chronic) aquatic hazard
Hydrocarbons C7-C8, isoalkanes, < 2% aromatics : 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.

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.

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)

UN3295, HYDROCARBONS, LIQUID, N.O.S., 3, II, MARINE POLLUTANT, (2,2,4-TRIMETHYLPENTANE (ISOOCTANE)), RQ (2,2,4-TRIMETHYLPENTANE (ISOOCTANE))

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

UN3295, HYDROCARBONS, LIQUID, N.O.S., 3, II, (-11 °C c.c.), MARINE POLLUTANT, (ISOALKANES C7-8, 2,2,4-TRIMETHYLPENTANE (ISOOCTANE))

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

UN3295, HYDROCARBONS, LIQUID, N.O.S., 3, II

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

UN3295, HYDROCARBONS, LIQUID, N.O.S., 3, II, (D/E), ENVIRONMENTALLY HAZARDOUS, (ISOALKANES C7-8, 2,2,4-TRIMETHYLPENTANE (ISOOCTANE))

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

33,UN3295,HYDROCARBONS, LIQUID, N.O.S., 3, II, ENVIRONMENTALLY HAZARDOUS, (ISOALKANES C7-8, 2,2,4-TRIMETHYLPENTANE (ISOOCTANE))

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

UN3295, HYDROCARBONS, LIQUID, N.O.S., 3, II, ENVIRONMENTALLY HAZARDOUS, (ISOALKANES C7-8, 2,2,4-TRIMETHYLPENTANE (ISOOCTANE))

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 2 water endangering

15.2

Chemical Safety Assessment

Components	:	Hydrocarbons C7-C8, isoalkanes, < 2% aromatics	A Chemical Safety Assessment has been carried out for this substance.

Major Accident Hazard Legislation : 96/82/EC Update: 2003
Dangerous for the environment
9b
Quantity 1: 200 t
Quantity 2: 500 t

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

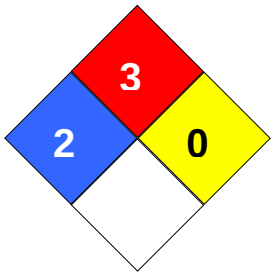
: ZEU_SEVES3 Update:
ENVIRONMENTAL HAZARDS
E2
Quantity 1: 200 t
Quantity 2: 500 t

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) TSCA	:	On or in compliance with the active portion of the TSCA inventory
Canada DSL	:	This product has been notified and approved for listing on the Canadian DSL. At this time, only Chevron Phillips Chemical Company LP can legally import the product into Canada.
Other AICS	:	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
Korea KECI	:	A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations. Importation or manufacture of this product is still permitted provided the Korean Importer of Record has themselves notified the substance or the exported amount does not exceed the minimum threshold quantity of the non-registered substance(s).
Philippines PICCS	:	Not in compliance with the inventory
China IECSC	:	Not in compliance with the inventory
Taiwan TCSI	:	On the inventory, or in compliance with the inventory

SECTION 16: Other information

NFPA Classification : Health Hazard: 2
Fire Hazard: 3
Reactivity Hazard: 0



Further information

Legacy SDS Number : 34750

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
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.

H225	Highly flammable liquid and vapor.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.

Annex: Exposure Scenarios

Table of Contents

ES 1: Use as a fuel - industrial; Industrial uses (SU3); Closed systems.

1.1. Title section

Exposure Scenario name	:	Use as a fuel - industrial
Structured Short Title	:	Use as a fuel - industrial; Industrial uses (SU3); Closed systems.
Substance	:	alkanes, C7-8-iso- EC-No.: 274-273-1

Environment		
CS 1	**Use as a fuel - industrial**	ERC7
Worker		
CS 2	**General exposures (closed systems), Use in contained batch processes, Storage**	PROC1
CS 3	**General exposures (closed systems), Use in contained batch processes, Storage**	PROC2
CS 4	**General exposures (closed systems), Use in contained batch processes, (closed systems)**	PROC3
CS 5	**Equipment cleaning and maintenance**	PROC8a
CS 6	**Drum/batch transfers, Bulk transfers**	PROC8b
CS 7	**Use in fuel**	PROC16

1.2. Conditions of use affecting exposure

1.2.1. Control of environmental exposure: Industrial use of substances in closed systems (ERC7)

Amount used (or contained in articles), frequency and duration of use/exposure		
Maximum allowable site tonnage (MSafe)	:	260.000 kg
Critical compartment for Msafe	:	Sewage treatment plant
Release type	:	Continuous release
Emission days	:	20
Technical and organisational conditions and measures		
Risk from environmental exposure is driven by freshwater sediment. No wastewater treatment required. Air - minimum efficiency of 95 % Water - minimum efficiency of 0 %		
Conditions and measures related to sewage treatment plant		
STP type	:	Municipal sewage treatment plant

STP sludge treatment	:	Prevent discharge of undissolved substance to or recover from wastewater. Do not apply industrial sludge to natural soils. Sewage sludge should be incinerated, contained or reclaimed.
STP effluent	:	2.000 m3/d

Conditions and measures related to treatment of waste (including article waste)		
Waste treatment	:	This substance is consumed during use and no waste of the substance is generated.

Other conditions affecting environmental exposure		
Receiving surface water flow	:	18.000 m3/d
Local freshwater dilution factor	:	10
Local marine water dilution factor	:	100

1.2.2. Control of worker exposure: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Liquid

Amount used (or contained in articles), frequency and duration of use/exposure		
Duration	:	Covers daily exposures up to 8 hours

Technical and organisational conditions and measures
Handle substance within a closed system. Store substance within a closed system.

Other conditions affecting workers exposure		
Temperature	:	Assumes use at not more than 20°C above ambient temperature.

1.2.3. Control of worker exposure: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Liquid

Amount used (or contained in articles), frequency and duration of use/exposure		
Duration	:	Covers daily exposures up to 8 hours

Technical and organisational conditions and measures
Handle substance within a closed system. Store substance within a closed system.
Other conditions affecting workers exposure
Temperature : Assumes use at not more than 20°C above ambient temperature.

1.2.4. Control of worker exposure: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

Product (article) characteristics
Covers percentage substance in the product up to 100 %.
Physical form of product : Liquid
Amount used (or contained in articles), frequency and duration of use/exposure
Duration : Covers daily exposures up to 8 hours
Technical and organisational conditions and measures
Handle substance within a closed system. No other specific measures identified.
Other conditions affecting workers exposure
Temperature : Assumes use at not more than 20°C above ambient temperature.

1.2.5. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a)

Product (article) characteristics
Covers percentage substance in the product up to 100 %.
Physical form of product : Liquid
Amount used (or contained in articles), frequency and duration of use/exposure
Duration : Covers daily exposures up to 8 hours
Technical and organisational conditions and measures
No other specific measures identified.
Other conditions affecting workers exposure
Temperature : Assumes use at not more than 20°C above ambient

temperature.

1.2.6. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Liquid
Amount used (or contained in articles), frequency and duration of use/exposure		
Duration	:	Covers daily exposures up to 8 hours
Technical and organisational conditions and measures		
No other specific measures identified.		
Other conditions affecting workers exposure		
Temperature	:	Assumes use at not more than 20°C above ambient temperature.

1.2.7. Control of worker exposure: Using material as fuel sources, limited exposure to unburned product to be expected (PROC16)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Liquid
Amount used (or contained in articles), frequency and duration of use/exposure		
Duration	:	Covers daily exposures up to 8 hours
Technical and organisational conditions and measures		
Handle substance within a closed system.		
Other conditions affecting workers exposure		
Temperature	:	Assumes use at not more than 20°C above ambient temperature.

1.3. Exposure estimation and reference to its source

1.3.1. Environmental release and exposure: Industrial use of substances in closed systems (ERC7)

Protection Target	Exposure estimate	RCR

Freshwater	0,0000005 mg/l (Hydrocarbon Block Method (Petrorisk))	0,000
Freshwater sediment	0,0000017 mg/kg wet weight (Hydrocarbon Block Method (Petrorisk))	0,000
Sea water	0,0000000 mg/l (Hydrocarbon Block Method (Petrorisk))	0,000
Sea sediment	0,0000017 mg/kg wet weight (Hydrocarbon Block Method (Petrorisk))	0,000
Soil	0,0000000 mg/kg wet weight (Hydrocarbon Block Method (Petrorisk))	0,000

Additional information on exposure estimation
Common practices vary across sites thus conservative process release estimates used.

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

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic		0,05 mg/m³	0,000
dermal	systemic		0,34 mg/kg/d	0,000
combined routes				0,000

Additional information on exposure estimation
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

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

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic		48,67 mg/m³	0,024
dermal	systemic		1,37 mg/kg/d	0,002
combined routes				0,026

Additional information on exposure estimation
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

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

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic		121,68 mg/m³	0,060
dermal	systemic		0,34 mg/kg/d	0,000
combined routes				0,060

Additional information on exposure estimation
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

1.3.5. Worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic		243,35 mg/m³	0,120
dermal	systemic		13,71 mg/kg/d	0,018
combined routes				0,137

Additional information on exposure estimation
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

1.3.6. Worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic		243,35 mg/m³	0,120
dermal	systemic		6,86 mg/kg/d	0,009
combined routes				0,128

Additional information on exposure estimation
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

1.3.7. Worker exposure: Using material as fuel sources, limited exposure to unburned product to be expected (PROC16)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic		24,34 mg/m³	0,012
dermal	systemic		0,34 mg/kg/d	0,000
combined routes				0,012

Additional information on exposure estimation
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

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

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

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).

ES 2: Use as a fuel – professional; Professional uses (SU22); Closed systems.

2.1. Title section

Exposure Scenario name	:	Use as a fuel – professional
Structured Short Title	:	Use as a fuel – professional; Professional uses (SU22); Closed systems.
Substance	:	alkanes, C7-8-iso- EC-No.: 274-273-1

Environment		
CS 1	**Use as a fuel - industrial**	ERC9a, ERC9b
Worker		
CS 2	**General exposures (closed systems), Storage**	PROC1
CS 3	**General exposures (closed systems)**	PROC2
CS 4	**Equipment cleaning and maintenance**	PROC8a
CS 5	**Bulk transfers, Drum/batch transfers, Refuelling**	PROC8b
CS 6	**Use in fuel**	PROC16

2.2. Conditions of use affecting exposure

2.2.1. Control of environmental exposure: Widespread use of functional fluid (indoor) (ERC9a) / Widespread use of functional fluid (outdoor) (ERC9b)

Amount used (or contained in articles), frequency and duration of use/exposure		
Maximum allowable site tonnage (MSafe)	:	860 kg
Critical compartment for Msafe	:	Sewage treatment plant
Release type	:	Continuous release
Emission days	:	365
Technical and organisational conditions and measures		
Risk from environmental exposure is driven by freshwater. No wastewater treatment required. Water - minimum efficiency of 0 %		
Conditions and measures related to sewage treatment plant		
STP type	:	Municipal sewage treatment plant
STP sludge treatment	:	Prevent discharge of undissolved substance to or recover from wastewater. Do not apply industrial sludge to natural soils.

		Sewage sludge should be incinerated, contained or reclaimed.
STP effluent	:	2.000 m3/d

Conditions and measures related to treatment of waste (including article waste)		
Waste treatment	:	This substance is consumed during use and no waste of the substance is generated.

Other conditions affecting environmental exposure		
Receiving surface water flow	:	18.000 m3/d
Local freshwater dilution factor	:	10
Local marine water dilution factor	:	100

2.2.2. Control of worker exposure: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Liquid

Amount used (or contained in articles), frequency and duration of use/exposure		
Duration	:	Covers daily exposures up to 8 hours

Technical and organisational conditions and measures
Handle substance within a closed system. Store substance within a closed system.

Other conditions affecting workers exposure		
Temperature	:	Assumes use at not more than 20°C above ambient temperature.

2.2.3. Control of worker exposure: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Liquid

Amount used (or contained in articles), frequency and duration of use/exposure		
Duration	:	Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Handle substance within a closed system.
Other conditions affecting workers exposure
Temperature : Assumes use at not more than 20°C above ambient temperature.

2.2.4. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a)

Product (article) characteristics
Covers percentage substance in the product up to 100 %.
Physical form of product : Liquid
Amount used (or contained in articles), frequency and duration of use/exposure
Duration : Covers daily exposures up to 8 hours
Technical and organisational conditions and measures
No other specific measures identified.
Other conditions affecting workers exposure
Temperature : Assumes use at not more than 20°C above ambient temperature.

2.2.5. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b)

Product (article) characteristics
Covers percentage substance in the product up to 100 %.
Physical form of product : Liquid
Amount used (or contained in articles), frequency and duration of use/exposure
Duration : Covers daily exposures up to 8 hours
Technical and organisational conditions and measures
Handle substance within a closed system. Clear transfer lines prior to de-coupling. No other specific measures identified.
Other conditions affecting workers exposure
Temperature : Assumes use at not more than 20°C above ambient temperature.

2.2.6. Control of worker exposure: Use of fuels (PROC16)

Product (article) characteristics	
Covers percentage substance in the product up to 100 %.	
Physical form of product	: Liquid
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: Covers daily exposures up to 8 hours
Technical and organisational conditions and measures	
Handle substance within a closed system.	
Other conditions affecting workers exposure	
Temperature	: Assumes use at not more than 20°C above ambient temperature.

2.3. Exposure estimation and reference to its source

2.3.1. Environmental release and exposure: Widespread use of functional fluid (indoor) (ERC9a) / Widespread use of functional fluid (outdoor) (ERC9b)

Protection Target	Exposure estimate	RCR
Freshwater	0,0000000 mg/l (Hydrocarbon Block Method (Petrorisk))	0,000
Freshwater sediment	0,0000000 mg/kg wet weight (Hydrocarbon Block Method (Petrorisk))	0,000
Sea water	0,0000000 mg/l (Hydrocarbon Block Method (Petrorisk))	0,000
Sea sediment	0,0000000 mg/kg wet weight (Hydrocarbon Block Method (Petrorisk))	0,000
Soil	0,0000000 mg/kg wet weight (Hydrocarbon Block Method (Petrorisk))	0,000

Additional information on exposure estimation
Common practices vary across sites thus conservative process release estimates used.

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

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR

inhalative	systemic		0,05 mg/m³	0,000
dermal	systemic		0,34 mg/kg/d	0,000
combined routes				0,000

Additional information on exposure estimation
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

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

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic		97,34 mg/m³	0,048
dermal	systemic		1,37 mg/kg/d	0,002
combined routes				0,050

Additional information on exposure estimation
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

2.3.4. Worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic		486,71 mg/m³	0,239
dermal	systemic		13,71 mg/kg/d	0,018
combined routes				0,257

Additional information on exposure estimation
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

2.3.5. Worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic		243,35 mg/m³	0,120
dermal	systemic		6,86 mg/kg/d	0,009
combined routes				0,128

Additional information on exposure estimation
Estimated workplace exposures are not expected to exceed DNELs when the identified risk

management measures are adopted.

2.3.6. Worker exposure: Use of fuels (PROC16)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic		48,67 mg/m³	0,024
dermal	systemic		0,34 mg/kg/d	0,000
combined routes				0,024

Additional information on exposure estimation
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

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

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

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).