

TrusTec[™] Diesel Reference Fuel U-34

Version 1.19

Revision Date 2023-05-18

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	:	TrusTec™ Diesel Reference Fuel U-34
Material	:	1108915, 1024281, 1024280, 1032195, 1024277, 1024279,
		1024278

EC-No.Registration number

Chemical name	CAS-No.	Legal Entity
	EC-No.	Registration number
	Index No.	
Light Cycle Oil	64741-59-9	Chevron Phillips Chemicals International NV
	265-060-4	01-2119489734-23-0015
	649-435-00-3	
C12-C14 Isoalkanes	68551-19-9	Chevron Phillips Chemicals International NV
	271-369-5	01-2119491311-45-0000
C12-C14 Isoalkanes	68551-19-9	Chevron Phillips Chemical Company LP
	271-369-5	01-2119491311-45-0001

1.2

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

Relevant Identified Uses	:	Manufacture
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
SDS Number:100000100096	1/47

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Belgium

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

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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) Cvprus: 1401 Czech Republic: Toxicological Information Center +420 224 919 293, +420 224 915 402 Denmark: Danish Poison Center (Giftlinien): +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 : Product Safety and Toxicology Group Responsible Department E-mail address SDS@CPChem.com Website www.CPChem.com SDS Number:100000100096 2/47

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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

Skin irritation, Category 2

Carcinogenicity, Category 1B

Specific target organ toxicity - repeated exposure, Category 2

Aspiration hazard, Category 1

Short-term (acute) aquatic hazard, Category 1 Long-term (chronic) aquatic hazard, Category 1 H226: Flammable liquid and vapor. H315: Causes skin irritation. H350: May cause cancer. H373: May cause damage to organs through prolonged or repeated exposure. H304: May be fatal if swallowed and enters airways. H400: Very toxic to aquatic life. H410: Very toxic to aquatic life.

2.2

Labeling (REGULATION (EC) No 1272/2008)

Hazard pictograms		
Signal Word	: Danger	
Hazard Statements	: H226 H304	Flammable liquid and vapor. May be fatal if swallowed and enters
	H315	Causes skin irritation.
	H350	May cause cancer.
	H373	May cause damage to organs through prolonged or repeated exposure.
	H410	Very toxic to aquatic life with long lasting effects.
Precautionary Statements	: Prevention:	
-	P201	Obtain special instructions before use.
	P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
	P260	Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
	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.
	P308 + P313	IF exposed or concerned: Get medical advice/ attention.
	P331	Do NOT induce vomiting.
	P370 + P378	In case of fire: Use dry sand, dry chemical
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		P391	or alcohol- Collect spi	resistant foam to llage.	o extinguish.					
Ha •	azardous ingredients 64741-59-9 68551-19-9	which must be l Light Cycle Oi C12-C14 Isoa	isted on the label: I Ikanes							
Ad	Additional Labeling:									
R	estricted to profession	nal users.								
2.3 Ot R a	her hazards Results of PBT and vP ssessment	vB : This be ei	substance/mixture conta ther persistent, bioaccum	ins no compone nulative and toxic	nts considered to c (PBT), or very					
Er pr	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									
			o or o. i /o or higher.							
SECTI	ON 3: Composition/i	nformation on	ingredients							
3.1 - 3. Substa Տչ	2 ance or Mixture /nonyms	: Diese	I Reference Fuel U							
M	olecular formula	: Mixtu	re							
H	azardous ingredient	e								
	Chamical name		Classification	Concentration	Specific Cope					
	Chemical hame	EC-No. Index No.	(REGULATION (EC) No 1272/2008)	[wt%]	Limits, M-factors and ATEs					
	ght Cycle Oil	64741-59-9 265-060-4 649-435-00-3	Flam. Liq. 3; H226 Acute Tox. 4; H332 Skin Irrit. 2; H315 Carc. 1B; H350 STOT RE 2; H373 Asp. Tox. 1; H304 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	60 - 70	M [Acute]=11 M [Chronic]=1 1					
C	12-C14 Isoalkanes	68551-19-9 271-369-5	Asp. Tox. 1; H304	30 - 40						
Fo	or the full text of the H	-Statements me	entioned in this Section, s	see Section 16.						
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SECTION 4: First aid measures

4.1

Description of first-aid measures

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5.3	Advice for firefighters Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
5.2	Special hazards arising from Specific hazards during fire fighting	n tl :	he substance or mixture Do not allow run-off from fire fighting to enter drains or water courses.
	Unsuitable extinguishing media	:	High volume water jet.
	Suitable extinguishing : media		Alcohol-resistant foam. Carbon dioxide (CO2). Dry chemical.
5.1	Extinguishing media		
	Autoignition temperature	:	No data available
	Flash point	:	46,33°C (115,39°F) Method: Tag closed cup
SEC	CTION 5: Firefighting measur	es	
4.3	Treatment	:	No information available.
1 2	Risks	:	No information available.
	Symptoms	:	No information available.
4.2	Most important symptoms a Notes to physician	nd	effects, both acute and delayed
	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.
	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.
	In case of skin contact	:	If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.
	If inhaled	:	If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
	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.

	-	SAFETY DATA SHEET
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	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). Keep away from open flames, hot surfaces and sources of ignition.
	Hazardous decomposition : products	Carbon oxides.
SEC	CTION 6: Accidental release me	asures
61		
0.1	Personal precautions, protect	ive 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 cor Methods for cleaning up :	ntainment and 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.
SEC	CTION 7: Handling and storage	
74		
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
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Tru	isTec™ Diesel Ref	erenc	e Fue	I U-34		
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		lo	cal and	national regula	tions.	
				national regula		
	Advice on protection against fire and explosion	: C T (\ fr	o not spi ake nece vhich mig om open	ray on a naked essary action to ght cause igniti flames, hot su	flame or any incane avoid static electric on of organic vapor infaces and sources	descent material. city discharge s). Keep away of ignition.
7.2	Conditions for safe stora	ae. incl	uding ar	v incompatib	ilities	
		ge, mor	ading ai		intico	
	Storage					
	Requirements for storage areas and containers	: N V C M	o smokir entilated arefully r bserve la naterials	ng. Keep conta place. Contain esealed and ke abel precautior must comply w	ainer tightly closed i ners which are oper ept upright to prever ns. Electrical install ith the technologica	n a dry and well- ned must be nt leakage. ations / working I safety standards.
7.3	Specific End Use Use	: F p	or additio	onal details, se	e the Exposure Sce	nario in the Annex
SEC	TION 8. Exposure control	s/nerso	nal prot	ection		
8.1 Chev	Control parameters Ingredients with workplac	ce conti	ol parar	neters		
Con	nponents	Basis		Value	Control paramete	rs Note
C12	-C14 Isoalkanes	Manufac	turer	TWA	1.200 mg/m3	RCP,
SK						
Zlož	ky	Podsta	ta	Hodnota	Kontrolné parame	etre Poznámka
Nap	hthalene	SK OEL		NPEL priemerný	10 ppm, 50 mg/m3	К,
SI	K Znamená, ze faktor môže b smrteľné otravy, éasto bez prienikom cez kožu, éi už v	SK OEL byť ľahko a varovných podobe kv	bsorbovaný príznakov (r apalín alebo	NPEL krátkodobý kožou. Niektoré fakto napr. anilín, nitrobenz pár, je osobitne dôle	15 ppm, 80 mg/m3 pry, ktoré l'ahko prenikajú ko cén, nitroglykol, fenoly a pod žité zabrániť kožnému kont	K, žou, môžu spôsobovať až .). Pri látkach s významným aktu.
Ses	tavine	Osnova	1	Vrednost	Parametri nadzor	a Pripomba
C12	-C14 Isoalkanes	SIOEL		MV	300 mg/m3	
Nap	hthalene	SI OEL		MV	10 ppm,	2, K,
		SI OEL		MV	50 mg/m3	2, K, Inhalabilna frakcija
		SI OEL		KTV	10 ppm,	2, K,
	 2 Rakotvorne snovi - kategor K Lastnost lažjega prehajanja 	I SI OEL ija 2 a snovi v or	ganizem sko	KTV zi kožo	50 mg/m3	2, K, Inhalabilna frakcija
SE				1 <i>.</i>		
Bes	tändsdelar	Grundy	al	Värde	Kontrollparametra	ar Anmärkning
Nap	nthalene	SE AFS		NGV	10 ppm, 50 mg/m3	
	V Vägledande korttidegräpsvi	SE AFS	wändas som	KGV	15 ppm, 80 mg/m3 högsta värde som inte bör ö	V, verskridas
		ona di			Sour raido som inte DOI O	
RS						

компоненты		Основа	величина	гараметры контроля	заметка
Нафталин		RS OEL	GVI	10 ppm, 50 mg/m3	Carc. cat. 3, EU,
Carc. cat. 3	Chemical substances that ca	ause concern about pos	ssible carcinogenic effects	for humans	
EU	Substance mentioned in ind	icative exposure limit va	alues in Directive 91/322 /	EEC	
RO					
Componente		Sursă	Valoare	Parametri de control	Notă
Naphthalene		RO OEL	TWA	10 ppm, 50 mg/m3	C2,

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Polynuclear Aromatics	RO OFI	TWA	0.2 mg/m3	C1B
C1B poate provoca apari	ția cancerului	1007	0,2 mg/mo	010,
C2 susceptibil de a prov	voca apariţia cancerului			
Componentes	Bases	Valor	Parâmetros de controlo	Nota
Naphthalene	PT OEL	VLE-MP	10 ppm,	P, A3,
A3 Agente carcinogénic	co confirmado nos animais de	laboratório com relevância	a desconhecida no Homem.	
P Perigo de absorção	cutânea			
PL Składniki	Podetowa	Wartość	Paramotry dotyczaco	Liwaga
Skidulliki	Fousiawa	Waltosc	kontroli	Owaya
Naphthalene	PL NDS	NDS	20 mg/m3	
Polynuclear Aromatics	PL NDS PL NDS	NDS	0.002 mg/m3	
			0,002g,0	
NU	Grupplag	Verdi	Kontrolloarametror	Nota
Nontholors	FOR-2011-12-06-			INULA
ivapntnaiene	1358	GV	10 ppm, 50 mg/m3	
Polynuclear Aromatics	FOR-2011-12-06- 1358	GV	0,04 mg/m3	К,
K Kjemikalier som ska	l betraktes som kreftfremkaller	nde.		
Bestanddelen	Basis	Waarde	Controleparameters	Opmerking
Naphthalene	NL WG	TGG-8 uur	50 mg/m3	opinionalig
	NL WG	TGG-15 min	80 mg/m3	
мт				
Components	Basis	Value	Control parameters	Note
Naphthalene	MT OEL	TWA	10 ppm, 50 mg/m3	
мк				
Съставки	Основа	Стойност	Параметри на	Бележка
Naphthalene	MK OEL	MV	10 ppm, 50 mg/m3	
Sastāvdalas	Bāze	Vērtība	Pārvaldības parametri	Piezīme
Naphthalene	LV OEL	AER 8 st	10 ppm, 50 mg/m3	
Composants	Base	Valeur	Paramètres de	Note
			contrôle	
Naphthalene	LU OEL	TWA	10 ppm, 50 mg/m3	
LT	Čaltinia	Marti		Destaha
Nanhthalene		IPRD	10 ppm 50 mg/m3	Pasiaba
IS		ii Ko	to ppin, oo mg/mo	I
Komponenter	Grunnlag	Verdi	Kontrollparametrer	Nota
Naphthalene	IS OEL	TWA	10 ppm, 50 mg/m3	
Polynuclear Aromatics	IS OEL	TWA	0,2 mg/m3	Partikkel
IE				
Components	Basis	Value	Control parameters	Note
Naphthalene	IE OEL	OELV - 8 hrs (TWA)	10 ppm, 50 mg/m3	
HU				
Komponensek	Bázis	Érték	Ellenőrzési	Megjegyzés
Naphthalona		AK órtók	paraméterek	
EU91 91/322/EGK irányelv i Ingerlő anyag (izgatj N Irritáló anyagok, egy	vben közölt érték ja a bőrt, nyálkahártyát, szeme szerű fojtógázok, csekély egé	et vagy mindhármat) szségkárosító hatással bír	ró anyagok. Korrekció NEM sz	ükséges.
Sastoici	Tomoli	Vrijednost	Nadzorni narametri	Bilieška
Light Cycle Oil	HR OEL	GVI	100 ppm. 400 mg/m3	Dijeska
Naphthalene	HROEL	GVI	10 ppm, 50 mg/m3	
	HR OEL		15 ppm, 75 mg/m3	
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GR							
Συστατικά	Βάση	Τιμή	Παράμετροι ελέγχου	Σημείωση			
Naphthalene	GR OEL	TWA	10 ppm, 50 mg/m3				
			- 11 /				
FR							
Composants	Base	Valeur	Paramètres de contrôle	Note			
Naphthalene	FR VLE	VME	10 ppm, 50 mg/m3	C2, Valeurs limites indicatives.			
C2 Cancérigène de catégorie 2 Valeurs limites Valeurs limites indicatives indicatives	- Substances preoccup	bantes en raison d'effets ca	ancerogenes possibles	, mada integ			
Aineosat	Peruste	Arvo	Valvontaa koskevat muuttuiat	Huomautus			
Naphthalene	FIOEL	HTP-arvot 8h	1 ppm. 5 mg/m3				
	FIOEL	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,			
via dérmica Via dérmica							
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	К,			
Polynuclear Aromatics	DK OEL	GV	0,2 mg/m3	partikler			
K Betyder, at stoffet er optage	t på listen over stoffer,	der anses for at være kræf	tfremkaldende.				
			· · · ·				
Inhaltsstoffe	Grundlage	Wert	Zu überwachende Parameter	Bemerkung			
Light Cycle Oil	DE TRGS 900	AGW	100 mg/m3	Gruppen-AGW, AGS,			
Naphthalene	DE TRGS 900	AGW	0,4 ppm, 2 mg/m3	H, Y, Dampf und Aerosole, einatembare Fraktion			
Gruppen-AGW Gruppengrenzwert für Kohle H Hautresorptiv Y Ein Risiko der Fruchtschädi nicht befürchtet zu werden	enwasserstoff-Lösemitte gung braucht bei Einhai	elgemische Itung des Arbeitsplatzgren:	zwertes und des biologischen	Grenzwertes (BGW)			
Složky	Základ	Hodnota	Kontrolní parametry	Poznámka			
Naphthalene	CZ OFI	PFI	50 mg/m3				
	CZ OFI	NPK-P	100 mg/m3				
	01 011		100 11.9,1110				
CY							
Συστατικά	Βάση	Τιμή	Παράμετροι ελέγχου	Σημείωση			
Naphthalene	CY OEL	TWA	10 ppm, 50 mg/m3				
Inhaltsstoffe	Grundlage	Wert	Zu überwachende	Bemerkung			
Naphthalene	CH SUVA	MAK-Wert	10 ppm, 50 mg/m3	H, Carc.Cat.3, NIOSH,			
Polynuclear Aromatics	CH SUVA	MAK-Wert	0,002 mg/m3	H, Carc.Cat.2, M1B, R1BF, NIOSH, OSHA,			
BG BG Carc.Cat.2 Krebserzeugende Stoffe Kategorie 2 Carc.Cat.3 Krebserzeugende Stoffe Kategorie 3 DFG Deutsche Forschungsgemeinschaft 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. M1B Stoffe, die wahrscheinlich vererbare Mutationen an menschlichen Keimzellen auslösen. NIOSH National Institute for Occupational Safety and Health OSHA Occupational Safety and Health Administration R1BF Stoffe, die wahrscheinlich reproduktionstoxisch sind; die Reproduktionstoxizität bezieht sich auf die Fruchtbarkeit oder Sexualität. BG							
Съставки	Основа	Стойност	Параметри на	Бележка			
			контрол				
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Light Cycle Oil	BG OEL	TWA	300 mg/m3	
Naphthalene	BG OEL	TWA	50 mg/m3	
	BG OEL	STEL	75 mg/m3	
RE				

Bestanddelen	Basis	Waarde	Controleparameters	Opmerking
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	Η,

H Besondere Gefahr der Hautresorption

Biological exposure indices

sĸ

Názov látky	Č. CAS	Kontrolné parametre	Doba odberu vzorky	Aktualizácia
Naphthalene	91-20-3	1-hydroxypyrén: 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 1B ()	Koniec vystavenia alebo pracovnej zmeny	2015-04-08
		1-hydroxypyrén: 0.0259 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 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 1B ()	Koniec vystavenia alebo pracovnej zmeny	2015-04-08

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		1-hydroxypyrén: 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 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 1B ()	Koniec vystavenia alebo pracovnej zmeny	2015-04-08
		1-hydroxypyrén: 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 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 1B ()	Koniec vystavenia alebo pracovnej zmeny	2015-04-08
Polynuclear Aromatics	130498-29-2	1-hydroxypyrén: 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 1B ()	Koniec vystavenia alebo pracovnej zmeny	2015-04-08

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I-hydroxypyrén: 1.95 µmol/mol kreatinínu V tejto přílohe sú uvedeně aj niektořé chemické faktory s karcinogénnym účinkom (kategória 1A a kategória 1A). Pre tieto chemické faktory platí, že dodržanie BMH nevylučuje riziko škodlivých zdravotných účinkov, preto sů 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 súvislacimi s expoziciou karcinogénnym a mutagénnym faktorom pri práci v znení neskorších predpisov. (moč) Karcinogén kategórie 1B () IT Denominazione della sostanza N. CAS Parametri di controllo Tempo di campionamento Aggiornamento 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 Polynuclear Aromatics 130498-29-2 1-hydroxypyrene: 4 µmol/mol creatinine (Urine) After shift 2011-12-18			1-hydroxypyrén: 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 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 1B. ()	Koniec vystavenia alebo pracovnej zmeny	2015-04-08
Denominazione della sostanza N. CAS Parametri di controllo Tempo di campionamento Aggiornamento GB Substance name CAS-No. Control parameters Sampling time Update Naphthalene 91-20-3 1-hydroxypyrene: 4 µmol/mol After shift 2011-12-18 Polynuclear Aromatics 130498-29-2 1-hydroxypyrene: 4 µmol/mol After shift 2011-12-18	IT		1-hydroxypyrén: 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 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 expoziciou karcinogénnym a mutagénnym faktorom pri práci v znení neskorších predpisov. (moč) Karcinogén kategórie 1B ()	Koniec vystavenia alebo pracovnej zmeny	2015-04-08
GB CAS-No. Control parameters Sampling time Update Naphthalene 91-20-3 1-hydroxypyrene: 4 µmol/mol creatinine (Urine) After shift 2011-12-18 Polynuclear Aromatics 130498-29-2 1-hydroxypyrene: 4 µmol/mol creatinine (Urine) After shift 2011-12-18	Denominazione della sostanza	N. CAS	Parametri di controllo	Tempo di	Aggiornamento
Substance nameCAS-No.Control parametersSampling timeUpdateNaphthalene91-20-31-hydroxypyrene: 4 µmol/mol creatinine (Urine)After shift2011-12-18Polynuclear Aromatics130498-29-21-hydroxypyrene: 4 µmol/mol creatinine (Urine)After shift2011-12-18	GB			campionamonio	
Naphthalene 91-20-3 1-hydroxypyrene: 4 µmol/mol creatinine (Urine) After shift 2011-12-18 Polynuclear Aromatics 130498-29-2 1-hydroxypyrene: 4 µmol/mol creatinine (Urine) After shift 2011-12-18	Substance name	CAS-No.	Control parameters	Sampling time	Update
Creatinine Urine) Polynuclear Aromatics 130498-29-2 1-hydroxypyrene: 4 µmol/mol After shift 2011-12-18 creatinine (Urine) Vine) Vine) Vine)	Naphthalene	91-20-3	1-hydroxypyrene: 4 µmol/mol	After shift	2011-12-18
	Polynuclear Aromatics	130498-29-2	1-hydroxypyrene: 4 µmol/mol creatinine (Urine)	After shift	2011-12-18

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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. Full-Face Air-Purifying Respirator for Organic Vapors, Dusts and Mists. 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

Physical state	:	liquid
Color	:	Yellow
Odor	:	Mild

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	Safety data		
	Flash point	: 46,33°C (115,39°F) Method: Tag closed cup	
	Lower explosion limit	: No data available	
	Upper explosion limit	: No data available	
	Oxidizing properties	: No	
	Autoignition temperature	: No data available	
	Thermal decomposition	: No data available	
	Molecular formula	: Mixture	
	Molecular weight	: Not applicable	
	рН	: Not applicable	
	Pour point	: No data available	
	Boiling point/boiling range	: 173-313°C (343-595°F)	
	Vapor pressure	: No data available	
	Relative density	: 0,876 at 15,6 °C (60,1 °F)	
	Density	: 0,8755 g/cm3	
	Bulk density	: 7,31 L/G	
	Water solubility	: negligible	
	Partition coefficient: n-	: No data available	
	Viscosity, kinematic	: 1,813 cSt at 40°C (104°F)	
	Relative vapor density	: 3 (Air = 1.0)	
	Evaporation rate	: <1	
	Percent volatile	: >99%	
		70 %	
9.2	Other information Conductivity	: No data available	
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SEC	SECTION 40. Stability and reactivity				
SEC					
10.1					
	Reactivity	: Stable under recommended storage conditions.			
10.2					
		<u>-</u>			
	Chemical stability	: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature			
		and pressure.			
10.3	4				
10.0	Possibility of bazardous read	tions			
	T ossibility of hazardous read	40113			
	Hazardous reactions	: Hazardous reactions: Hazardous polymerization does not			
		occur.			
		Hazardous reactions: Vapors may form explosive mixture with			
		air.			
10.4					
	Conditions to avoid	: Heat, flames and sparks.			
10.5	b				
	Materials to avoid	: May react with oxygen and strong oxidizing agents, such as			
		chlorates, nitrates, peroxides, etc.			
	Thermal decomposition	: No data available			
10 6	i				
10.0	Hazardous decomposition	: Carbon oxides			
	products				
	Other data	: No decomposition if stored and applied as directed.			
SEC	TION 11: Toxicological inform	nation			
11.1	Information on toxicological	effects			
	internation on textoological				
	TrusTec™ Diesel Reference I	Fuel U-34			
	Acute oral toxicity	Method: Calculation method			
	TrusTec™ Diesel Reference Fuel U-34				
	Acute inhalation toxicity	: Acute toxicity estimate: 6,64 mg/l			
		Exposure time: 4 h Test atmosphere: dust/mist			
		Method: Calculation method			
	TrusTec™ Diesel Reference Fuel U-34				
	Acute dermal toxicity	: Acute toxicity estimate: > 2.000 mg/kg			
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	Method: Calculation method
TrusTec™ Diesel Reference Skin irritation	Fuel U-34 : Skin irritation largely based on animal evidence.
TrusTec™ Diesel Reference Eye irritation	 Fuel U-34 Vapors may cause irritation to the eyes, respiratory system and the skin.
TrusTec™ Diesel Reference Sensitization	Fuel U-34 : Does not cause skin sensitization. Estimated based on individual component values.
Repeated dose toxicity	
Light Cycle Oil	 Species: Rat, males Sex: males Application Route: Dermal Dose: 0, 8, 25, 125, 500, 1250 mg/kg Exposure time: 90 day Number of exposures: 5 days/wk NOEL: 25 mg/kg Target Organs: Blood, Liver, Thymus
	Species: Rat, females Sex: females Application Route: Dermal Dose: 0, 8, 25, 125, 500, 1250 mg/kg Exposure time: 90 day Number of exposures: 5 days/wk NOEL: 125 mg/kg Target Organs: Blood, Liver, Thymus
C12-C14 Isoalkanes	Species: Rat, male and female Sex: male and female Application Route: oral gavage Dose: 100, 500, 1000 mg/kg/d Exposure time: 13 wk Number of exposures: daily NOEL: > 1000 mg/kg/d Method: OECD Test Guideline 408 No adverse effects expected Information given is based on data obtained from similar substances.
	Species: Rat, male and female Sex: male and female Application Route: Inhalation Dose: 2600, 5200, 10400 mg/m3 Exposure time: 90 d Number of exposures: 6 h/d; 5d/wk NOEL: > 10400 mg/m3 Method: OECD Test Guideline 413 No adverse effects expected Information given is based on data obtained from similar substances.
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Genotoxicity in vitro	
Light Cycle Oil	: Test Type: Modified Ames test Result: positive
	Test Type: Mouse lymphoma assay Result: positive
	Test Type: Sister Chromatid Exchange Assay Result: negative
C12-C14 Isoalkanes	Test Type: Ames test Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative
	Test Type: Mouse lymphoma assay Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative
	Test Type: Sister Chromatid Exchange Assay Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 479 Result: negative
Genotoxicity in vivo	
Light Cycle Oil	: Test Type: Cytogenetic assay Result: negative
C12-C14 Isoalkanes	Test Type: dominant lethal test Species: Rat Route of Application: Intraperitoneal injection Dose: 300, 900 ppm Method: OECD Test Guideline 478 Remarks: Information given is based on data obtained from similar substances.
TrusTec™ Diesel Reference Carcinogenicity	Fuel U-34 : Remarks: May cause cancer.
Developmental Toxicity	
Light Cycle Oil	: Species: Rat Application Route: Dermal Dose: 1, 50, 250 mg/kg/d Number of exposures: once daily Test period: GD 0-19 Method: OECD Guideline 414 NOAEL Teratogenicity: 1 mg/kg NOAEL Maternal: 1 mg/kg
C12-C14 Isoalkanes	Species: Rat Application Route: Inhalation Dose: 0, 400, 1200 ppm Exposure time: 6h Test period: GD 6-15
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	NOAEL Teratogenicity: 1200 ppm NOAEL Maternal: 1200 ppm Information given is based on data obtained from similar substances.
	Species: Rat Application Route: Inhalation Dose: 300, 900 ppm Exposure time: 6h Test period: GD 6-15 NOAEL Teratogenicity: >= 900 ppm NOAEL Maternal: >= 900 ppm Information given is based on data obtained from similar substances.
TrusTec™ Diesel Referenc Aspiration toxicity	e Fuel U-34 : May be fatal if swallowed and enters airways.
Specific Target Organ Tox Light Cycle Oil	 icity (Repeated Exposure) Target Organs: Blood, Liver, thymus gland Assessment: May cause damage to organs through prolonged or repeated exposure.
CMR effects	
Light Cycle Oil	: Carcinogenicity: Possible human carcinogen
C12-C14 Isoalkanes	Carcinogenicity: Not available Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects., In vivo tests did not show mutagenic effects Teratogenicity: Animal testing did not show any effects on fetal development. Reproductive toxicity: Animal testing did not show any effects on fertility.
11.2 Information on other hazar	ds
TrusTec™ Diesel Referenc	e Fuel U-34
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 inform	ation
12.1 Toxicity	
Toxicity to fish	
Light Cycle Oil	: LL50: > 0,3 mg/l Exposure time: 96 h
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		Species: Oncorhynchus mykiss (rainbow trout) semi-static test Method: OECD Test Guideline 203
	C12-C14 Isoalkanes	LL50: > 1.000 mg/l Exposure time: 96 h Species: Oncorhynchus mykiss (rainbow trout) semi-static test Method: OECD Test Guideline 203 Information given is based on data obtained from similar substances.
	Toxicity to daphnia and other a	quatic invertebrates
	Light Cycle Oil :	EL50: 0,32 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) Immobilization Method: OECD Test Guideline 202
	C12-C14 Isoalkanes	EL50: > 1.000 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) static test Method: OECD Test Guideline 202 Information given is based on data obtained from similar substances.
	Toxicity to algae	
	Light Cycle Oil :	EL50: 0,51 mg/l Exposure time: 72 h Species: Pseudokirchneriella subcapitata (green algae) Growth inhibition Method: OECD Test Guideline 201
	C12-C14 Isoalkanes	EL50: > 1.000 mg/l Exposure time: 72 h Species: Pseudokirchneriella subcapitata (green algae) Growth inhibition Method: OECD Test Guideline 201 Information given is based on data obtained from similar substances.
	M-Factor Distillates (petroleum), light : catalytic cracked	M-Factor (Acute Aquat. Tox.) 1
		M-Factor (Chron. Aquat. Tox.) 1
	Toxicity to fish (Chronic toxicit	у)
	C12-C14 Isoalkanes :	No data available:
12.2	Persistence and degradability	
	Biodegradability	
	Light Cycle Oil :	aerobic 56,32 % Testing period: 28 d
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		M E	lethod: OECD Test Guideline 301F xpected to be inherently biodegradable.
	C12-C14 Isoalkanes	: ao R 89 T M In su	erobic lesult: Readily biodegradable. 9,8 % esting period: 28 d lethod: OECD Test Guideline 301F nformation given is based on data obtained from similar ubstances.
12.3	Bioaccumulative potential		
	Bioaccumulation		
	Light Cycle Oil	: T	he product may be accumulated in organisms.
	C12-C14 Isoalkanes	: Т	he product may be accumulated in organisms.
12.4	Mobility in soil		
	Mobility		
	Light Cycle Oil	: N	lo data available
	C12-C14 Isoalkanes	: in	nmobile
12.5	Results of PBT and vPvB ass Results of PBT assessment	sessr : TI to ve 0.	ment his substance/mixture contains no components considered be either persistent, bioaccumulative and toxic (PBT), or ery persistent and very bioaccumulative (vPvB) at levels of .1% or higher.
12.6	Endocrine disrupting proper	ties	
	Endocrine disrupting properties	: TI co to (E le	he substance/mixture does not contain components onsidered to have endocrine disrupting properties according o REACH Article 57(f) or Commission Delegated regulation EU) 2017/2100 or Commission Regulation (EU) 2018/605 at evels of 0.1% or higher.
12.7	Other adverse effects		
	Additional ecological information	: V	ery toxic to aquatic life with long lasting effects.
12.8	Additional Information		
	Ecotoxicology Assessment		
	Short-term (acute) aquatic haza Light Cycle Oil	ard : V	ery toxic to aquatic life.
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C12-C14 Isoalkanes	: This material is not expected to be ha organisms.	Irmful to aquatic
Long-term (chronic) aquatic h Light Cycle Oil	azard : Very toxic to aquatic life with long last	ting effects.
C12-C14 Isoalkanes	: This material is not expected to be ha organisms.	rmful to aquatic

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) UN1202, DIESEL FUEL, 3, III

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS) UN1202, DIESEL FUEL, 3, III, (46,33 °C c.c.), MARINE POLLUTANT, (LIGHT CYCLE OIL)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

UN1202, DIESEL FUEL, 3, III

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ADR (AGREEMENT ON UN1202, DIESEL FU OIL)	I DANGEROUS GOOD EL, 3, III, (D/E), ENVIR	OS BY ROAD (EUROPE)) RONMENTALLY HAZARDOUS, (LIG	GHT CYCLE	
RID (REGULATIONS CO DANGEROUS GOODS 30,UN1202,DIESEL F	DNCERNING THE INT (EUROPE)) UEL, 3, III, ENVIRONN	ERNATIONAL TRANSPORT OF	CYCLE OIL)	
ADN (EUROPEAN AGR OF DANGEROUS GOO UN1202, DIESEL FU	EEMENT CONCERNI DS BY INLAND WATE EL, 3, III, ENVIRONME	NG THE INTERNATIONAL CARRIA ERWAYS) ENTALLY HAZARDOUS, (LIGHT C`	AGE YCLE OIL)	
Maritime transport in b	oulk according to IMO	instruments		
SECTION 15: Regulatory int	formation			
SECTION 15. Regulatory in	ormation			
15.1 Safety, health and envi National legislation	ronmental regulation	s/legislation specific for the subs	tance or mixture	
Commission Regulation the European Parliamen Restriction of Chemicals	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 highl	y water endangering		
15.2 Oberniege Opfathe Associ				
Chemical Safety Asses				
Chamical Safaty Assas	(petroleum), light catalytic cracked		205-000-4	
Chemical Salety Asses		A Chamical Safety Assessment	071 260 F	
	Aikanes, C12-14- iso-	A Chemical Safety Assessment has been carried out for this substance.A quantitative risk assessment is not required for human health.A quantitative risk assessment is not required for the environment.	271-369-5	
Major Accident Hazard Legislation	: 96/82/EC Flammable. 6 Quantity 1: 5	Update: .000 t		
	Quantity 2: 5	0.000 t		
	: 96/82/EC Dangerous fo 9b Quantity 1: 2 Ouantity 2: 5	Update: or the environment 00 t		
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Importation or manufacture of this product is still permitted provided the Korean Importer of Record ha 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 inventoryTaiwan TCSI:China IECSC:On the inventory, or in compliance with the inventory
Importation or manufacture of this product is still permitted provided the Korean Importer of Record ha 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
Notification statusEurope REACH: This product is in full compliance according to REAC regulation 1907/2006/EC.United States of America (USA) TSCA: On or in compliance with the active portion of the TSCA inventorySwitzerland CH INV Canada DSL: On the inventory, or in compliance with the inventory canada DSLAustralia AIIC New Zealand NZIOC Japan ENCS Korea KECI: Not in compliance with the inventory : On the inventory, or in compliance with the inventory : On the inventory, or in compliance with the inventory : Not in compliance with the inventory : On the inventory, or in compliance with the inventory : On the inventory, or in compliance with the inventory : On the inventory, or in compliance with the inventory : On the inventory, or in compliance with the inventory : On the inventory, or in compliance with the inventory : On the inventory, or in compliance with the inventory : A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations.
 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 purpos and with similar properties as regards flammability and environmental hazards as the products referred to in points to (d) 34 Quantity 1: 2.500 t Quantity 2: 25.000 t
: ZEU_SEVES3 Update: ENVIRONMENTAL HAZARDS E1 Quantity 1: 100 t Quantity 2: 200 t
: ZEU_SEVES3 Update: FLAMMABLE LIQUIDS P5c Quantity 1: 5.000 t Quantity 2: 50.000 t
 96/82/EC 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 13 Quantity 1: 2.500 t Quantity 2: 25.000 t

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SECTION 16: Other information

NFPA Classification	: Health Hazard: 2 Fire Hazard: 2 Reactivity Hazard: 0	2 0
Further information		
Legacy SDS Number	: 664950	

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.

	American Conference of		
	Government Industrial Hygienists	LD20	Leinal Dose 50%
AIIC	Australian Inventory of Industrial Chemicals	LOAEL	Lowest Observed Adverse Eff Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agend
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupation
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
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentra
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 Substa
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recov
>=	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	TSCA	Toxic Substance Control Act
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	New Chemical Substances		
KECI	Korea, Existing Chemical	UVCB	Unknown or Variable Composition,
	Inventory		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. H304 May be fatal if swallowed and enters airways. Causes skin irritation. H315 Harmful if inhaled. H332 H350 May cause cancer. May cause damage to organs through prolonged or repeated exposure. H373 H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects.

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Annex

1. Short title of Exposure Scenario: Ma	nufacture
Main User Groups Sector of use Process category	 SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites SU3: Industrial Manufacturing (all) 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 PROC15: Use as laboratory reagent
Environmental release category	: ERC1, ERC4: Manufacture of substances, Industrial use of processing aids in processes and products, not becoming part of articles
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 control Manufacture of substances, Indu products, not becoming part of a	ling environmental exposure for:ERC1, ERC4: strial use of processing aids in processes and rticles
Product characteristics Remarks	Substance is complex UVCB., Predominantly hydrophobic.
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d):(Msafe)	: 930.000
Environment factors not influenced Flow rate Dilution Factor (River) Dilution Factor (Coastal Areas)	by risk management : 18.000 m3/d : 10 : 100
Other given operational conditions a Continuous exposure Number of emission days per year Emission or Release Factor: Air Emission or Release Factor: Water Emission or Release Factor: Soil	iffecting environmental exposure : 300 : 1 % : 0,03 % : 0,01 %
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Technical conditions and measures / Organizational measures

Air	: I reat air emission to provide a typical removal efficiency of
	(%): (Effectiveness: 90 %)
Motor	Tract anoite wester (prier to reaciving water discharge) to
water	. Treat onsite wastewater (phor to receiving water discharge) to
	provide the required removal efficiency of \geq (%):
	(Effectiveness: 98,7 %)
Remarks	: Do not apply industrial sludge to natural soils.
Water	· If discharging to domestic sewage treatment plant, provide the
Water	\cdot in disording ing to domestic sewage inclusion plant, provide the
	required onsite wastewater removal efficiency of \geq (%):
	(Effectiveness: 83,6 %)
Remarks	: Sludge should be incinerated, contained or reclaimed.
Remarks	Common practices vary across sites thus conservative
	process release estimates used
	process release estimates used.
Remarks	: Risk from environmental exposure is driven by freshwater
	sediment.
Pomorko	· Oppite westewater treatment required
Remarks	. Onsite wastewater treatment required.

Conditions and measures related to external recovery of waste

Recovery	Methods
110000019	Moundus

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During manufacturing 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
Frequency and duration of use Remarks	: Covers daily exposures up to 8 hours (unless stated differently)
Other operational conditions affec Remarks	 ting workers exposure 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 measure Consider technical advances and p releases. Minimize exposure using general/local exhaust ventilation. If containment. Clean/flush equipme Where there is potential for exposu training to operators to minimize ex contamination; wear respiratory pro- clear up spills immediately and disp arrangements are in place to mana Consider the need for risk based he system provided with extract ventilat Organizational measures to preven Avoid direct skin contact with produ (tested to EN374) if hand contact w occur. Wash off any skin contamina- minimise exposures and to report a 	s rocess upgrades (including automation) for the elimination of g measures such as closed systems, dedicated facilities and suitable Drain down systems and clear transfer lines prior to breaking int, where possible, prior to maintenance. re: Restrict access to authorized persons; provide specific activity posures; wear suitable gloves and coveralls to prevent skin tection when its use is identified for certain contributing scenarios; iose of wastes safely. Ensure safe systems of work or equivalent ge risks. Regularly inspect, test and maintain all control measures. ealth surveillance.,Handle substance within a predominantly closed ition.,Store substance within a closed system. ht /limit releases, dispersion and exposure ct. Identify potential areas for indirect skin contact. Wear gloves ith substance likely. Clean up contamination/spills as soon as they atton immediately. Provide basic employee training to prevent / ny skin problems that may develop.

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2.2 Contributing scenario control continuous process with occasio	lling worker exposure for: PROC2: Use in closed, onal controlled exposure		
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 affectir Remarks	 ng workers exposure 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 Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimize exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance. Where there is potential for exposure: Restrict access to authorized persons; provide specific activity training to operators to minimize exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance.,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 occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. 			
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 affectir Remarks	 ng workers exposure 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 Consider technical advances and pro releases. Minimize exposure using r general/local exhaust ventilation. Dra containment. Clean/flush equipment Where there is potential for exposure training to operators to minimize expo contamination; wear respiratory prote clear up spills immediately and dispos	cess upgrades (including automation) for the elimination of neasures such as closed systems, dedicated facilities and suitable ain down systems and clear transfer lines prior to breaking , where possible, prior to maintenance. : Restrict access to authorized persons; provide specific activity psures; wear suitable gloves and coveralls to prevent skin ction when its use is identified for certain contributing scenarios; se of wastes safely. Ensure safe systems of work or equivalent		
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arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance.,Sample via a closed loop or other system intended to avoid exposure

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

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
Frequency and duration of use Remarks	: Covers daily exposures up to 8 hours (unless stated differently)
Other energianal conditions offer	ting workers expective

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

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimize exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance. Where there is potential for exposure: Restrict access to authorized persons; provide specific activity training to operators to minimize exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance.,Drain down and flush system prior to equipment opening or maintenance.

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

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
Frequency and duration of use Remarks	: Covers daily exposures up to 8 hours (unless stated differently)
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recycle.

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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

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimize exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance. Where there is potential for exposure: Restrict access to authorized persons; provide specific activity training to operators to minimize exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance., Drain down and flush system prior to equipment opening or maintenance., Retain drain downs in sealed storage pending disposal or for subsequent

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 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

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

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

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

: 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

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimize exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance.

Where there is potential for exposure: Restrict access to authorized persons; provide specific activity training to operators to minimize exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance...Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure.

Organizational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves

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(tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

3. Exposure estimation and reference to its source

Environment

Contributing ScenarioExposure Assessment MethodSpecific conditionsCompartmentValue typeLevel of ExposureRisk characterization ratio (PEC/PNEC):ERC1, ERC4Hydrocarbon Block Method with PetroriskAir0,046 mg/m3							
ERC1, ERC4Hydrocarbon Block Method with PetroriskAir0,046 mg/m3Image: Constraint of the section of the	Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value type	Level of Exposure	Risk characterization ratio (PEC/PNEC):
Freshwater 0,0056 mg/L 0,73 Marine water 0,00056 mg/L 0,073 Freshwater 0,46 mg/kg 0,91 sediment wet weight 0 Marine sediment 0,046 mg/kg 0,091 Marine sediment 0,046 mg/kg 0,091 Wet weight 0,001 0,00069 Marine sediment 0,00069 0,0018 Marine sediment 0,00069 0,0018	ERC1, ERC4	Hydrocarbon Block Method with Petrorisk		Air		0,046 mg/m3	
Marine water 0,00056 mg/L 0,073 Freshwater 0,46 mg/kg 0,91 sediment wet weight 0 Marine sediment 0,046 mg/kg 0,091 Marine sediment 0,046 mg/kg 0,091 Marine sediment 0,046 mg/kg 0,001 Marine sediment 0,00069 0,0018 mg/kg wet weight weight				Freshwater		0,0056 mg/L	0,73
Freshwater sediment 0,46 mg/kg wet weight 0,91 Marine sediment 0,046 mg/kg wet weight 0,091 Agricultural soil 0,0069 mg/kg wet weight 0,0018				Marine water		0,00056 mg/L	0,073
Marine sediment 0,046 mg/kg wet weight 0,091 Agricultural soil 0,00069 0,0018 mg/kg wet weight mg/kg wet weight 0,0018				Freshwater sediment		0,46 mg/kg wet weight	0,91
Agricultural soil 0,00069 0,0018 mg/kg wet weight				Marine sediment		0,046 mg/kg wet weight	0,091
				Agricultural soil		0,00069 mg/kg wet weight	0,0018

ERC1: Manufacture of substances

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

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	0,14
			Worker – long-term – systemic Combined routes		0,14
PROC1, CS85	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,5 mg/m3	0,02
			Worker – dermal, long- term – systemic	1,37 mg/kg/d	0,57
			Worker – long-term – systemic Combined routes		0,59
PROC2, CS85	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,05 mg/m3	0,02
			Worker – dermal, long- term – systemic	1,37 mg/kg/d	0,57
			Worker – long-term – systemic Combined routes		0,59
PROC3, CS2	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,04
			Worker – dermal, long- term – systemic	0,34 mg/kg/d	0,14
			Worker – long-term – systemic Combined routes		0,18
PROC8a, CS39	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	5 mg/m3	0,02
			Worker – dermal, long- term – systemic	1,371 mg/kg/d	0,57
			Worker – long-term – systemic Combined routes		0,59
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PROC8b, CS39	ECETOC TRA Modified	Worker – inhalation, long-term – systemic	5 mg/m3	0,18
		Worker – dermal, long- term – systemic	1,37 mg/kg/d	0,57
		Worker – long-term – systemic Combined routes		0,75
PROC15, CS36	ECETOC TRA Modified	Worker – inhalation,	0,5 mg/m3	0,00
	Weathea	Worker – dermal, long- term – systemic	0,03 mg/kg/d	0,01
		Worker – long-term – systemic Combined		0,01
PROC1: Use CS15: Gener	in closed proces al exposures (clo	no likelihood of exposure ed systems)		
PROC1: Use CS85: Bulk p	in closed process product storage	no likelihood of exposure		
PROC2: Use CS85: Bulk p	in closed, continu roduct storage	ous process with occasional control	led exposure	
PROC3: Use CS2: Process	in closed batch p s sampling	ocess (synthesis or formulation)		
PROC8a: Tra at non-dedica CS39: Equip	ansfer of substand ated facilities ment cleaning and	e or preparation (charging/dischargin maintenance	ng) from/to vessels	s/large containers
PROC8b: Tra containers at CS39: Equip	ansfer of substand dedicated facilitie ment cleaning and	e or preparation (charging/ discharg s maintenance	ing) from/ to vesse	els/ large
PROC15: Us CS36: Labora	e as laboratory re atory activities	gent		
. Guidance t by the Expos	o Downstream ure Scenario	Jser to evaluate whether he w	orks inside the	boundaries set
Predicted e	exposures are not	expected to exceed the DN(M)EL w	hen the Risk Mana	agement
Measures/ Where othe ensure that	Operational Conc er Risk Managem t risks are manag	ions outlined in Section 2 are imple nt Measures/Operational Condition d to at least equivalent levels.	mented. s are adopted, the	n users should
Available h Available h Available h	nazard data do no nazard data do no nazard data do no	enable the derivation of a DNEL for enable the derivation of a DNEL for support the need for a DNEL to be	dermal irritant effe carcinogenic effe established for oth	ects. cts. er health
Risk Mana assumed c necessary	gement Measures operating condition to define appropr	are based on qualitative risk charac s which may not be applicable to all ate site-specific risk management m	cterisation.Guidano sites; thus, scaling easures.	ce is based on g may be
Required r either alon	emoval efficiency e or in combinatio	or wastewater can be achieved usir	ng onsite/offsite teo	chnologies,
Required r	emoval efficiency	or air can be achieved using on-site	e technologies, eith	ner alone or in
Further de (http://cefic	tails on scaling ar c.org/en/reach-for	l control technologies are provided industries-libraries.html).	in SpERC factshee	et
DS Number 1	0000100006	30/4	7	
	00000100030	52/4		

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Scaled local assessments for EU refineries have been performed using site-specific data and are attached in PETRORISK file – "Site-Specific Production" worksheet.

1. Short title of Exposure Scenario: Use as a fuel - industrial

Main User Groups Sector of use Process category	 SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites SU3: Industrial Manufacturing (all) 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.

2.1 Contributing scenario controlling environmental exposure for:ERC7: Industrial use of substances in closed systems

Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

Product characteristics

Remarks	Substance is complex UVCB., Predominantly hydrophobic.
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d):(Msafe)	: 920.000
Environment factors not influenced b	by risk management
Flow rate	: 18.000 m3/d
Dilution Factor (River)	: 10
Dilution Factor (Coastal Areas)	: 100
Other given operational conditions a	ffecting environmental exposure
Continuous exposure	
Number of emission days per year	: 300
Emission or Release Factor: Air	: 0,5 %
Emission or Release Factor: Water	: 0,001 %
Emission or Release Factor: Soil	: 0%
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Technical conditions and measures /	Organizational measures
Air	: Treat air emission to provide a typical removal efficiency of
Water	 (%): (Effectiveness: 95 %) Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of ≥ (%):
Damarke	 Ellectiveness. oo,9 % Do not apply industrial sludge to natural soils
Water	 Do not apply industrial studge to natural solid. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of ≥ (%): (Effectiveness: 0 %)
Remarks	: Sludge should be incinerated, contained or reclaimed.
Remarks	: Common practices vary across sites thus conservative
Remarks	 process release estimates used. Risk from environmental exposure is driven by freshwater
Remarks	 If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Conditions and measures related to I Type of Sewage Treatment Plant Flow rate of sewage treatment plant effluent	 municipal sewage treatment plant Municipal sewage treatment plant 2.000 m3/d
Effectiveness (of a measure)	: 92.3 %
Percentage removed from waste water	: 92,3 %
Conditions and measures related to	avtornal traatment of waeta for disnocal
Remarks	 Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure
	assessment.
Conditions and measures related to a	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 control process, no likelihood of exposu	ling worker exposure for: PROC1: Use in closed
• · · · · · · · ·	
Product characteristics	
Remarks	Substance is complex UVCB., Predominantly hydrophobic.
Physical Form (at time of use) Remarks	 Liquid mixture 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 exectional conditions offectin	
Remarks	 g workers exposure 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 Consider technical advances and proc releases. Minimize exposure using m general/local exhaust ventilation. Dra containment. Clean/flush equipment, Where there is potential for exposure:	cess upgrades (including automation) for the elimination of neasures such as closed systems, dedicated facilities and suitable ain down systems and clear transfer lines prior to breaking , where possible, prior to maintenance. Restrict access to authorized persons; provide specific activity
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training to operators to minimize exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance.,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 occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Product characteristics Remarks	Substance is complex UVCB., Predominantly hydrophobic.
Physical Form (at time of use) Remarks	: Liquid mixture : 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 affer	ting 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

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimize exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance.

Where there is potential for exposure: Restrict access to authorized persons; provide specific activity training to operators to minimize exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance.,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 occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Product characteristics Remarks	Substance is complex UVCB., Predominantly hydrophobic.
Physical Form (at time of use) Remarks	 Liquid mixture Liquid, vapour pressure < 0.5 kPa at STP
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_ nd duration of u

Remarks	
	: Covers daily exposures up to 8 hours (unless stated differently)
Other energianal conditions offectiv	na warkara avnasura
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	
Consider technical advances and measures Consider technical advances and pro- releases. Minimize exposure using n general/local exhaust ventilation. Dra containment. Clean/flush equipment Where there is potential for exposures training to operators to minimize expo contamination; wear respiratory prote clear up spills immediately and dispos arrangements are in place to manage Consider the need for risk based heat	cess upgrades (including automation) for the elimination of neasures such as closed systems, dedicated facilities and suitable ain down systems and clear transfer lines prior to breaking , where possible, prior to maintenance. : Restrict access to authorized persons; provide specific activity osures; wear suitable gloves and coveralls to prevent skin ction when its use is identified for certain contributing scenarios; se of wastes safely. Ensure safe systems of work or equivalent e risks. Regularly inspect, test and maintain all control measures. Ith surveillance.,Handle substance within a closed system.
Organizational measures to prevent	limit releases, dispersion and exposure
Avoid direct skin contact with product (tested to EN374) if hand contact with occur. Wash off any skin contamination minimise exposures and to report any	. Identify potential areas for indirect skin contact. Wear gloves a substance likely. Clean up contamination/spills as soon as they on immediately. Provide basic employee training to prevent / y skin problems that may develop.
2.2 Contributing scenario control substance or preparation (chargi	lling worker exposure for: PROC8a: Transfer of ng/discharging) from/to vessels/large containers at
Braduat abaractoristics	
Remarks	Substance is complex UVCB., Predominantly hydrophobic.
Physical Form (at time of use)	· Liquid mixture
Remarks	: Liquid, vapour pressure < 0.5 kPa at STP
	: Liquid, vapour pressure < 0.5 kPa at STP
Remarks Frequency and duration of use Remarks	 Liquid mixture Liquid, vapour pressure < 0.5 kPa at STP Covers daily exposures up to 8 hours (unless stated differently)
Remarks Frequency and duration of use Remarks Other operational conditions affectir	 Elquid mixture Liquid, vapour pressure < 0.5 kPa at STP Covers daily exposures up to 8 hours (unless stated differently)
Remarks Frequency and duration of use Remarks Other operational conditions affectir Remarks	 Liquid mixture Liquid, vapour pressure < 0.5 kPa at STP Covers daily exposures up to 8 hours (unless stated differently) ng workers exposure Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.
Remarks Frequency and duration of use Remarks Other operational conditions affectir Remarks Technical conditions and measures	 Liquid mixture Liquid, vapour pressure < 0.5 kPa at STP Covers daily exposures up to 8 hours (unless stated differently) ng workers exposure Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.
 Remarks Frequency and duration of use Remarks Other operational conditions affecting Remarks Technical conditions and measures Consider technical advances and properties releases. Minimize exposure using methods and the second properties of the	 Liquid mixture Liquid, vapour pressure < 0.5 kPa at STP Covers daily exposures up to 8 hours (unless stated differently) ng workers exposure Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented. cess upgrades (including automation) for the elimination of neasures such as closed systems, dedicated facilities and suitable ain down systems and clear transfer lines prior to breaking there possible, prior to maintenance. Restrict access to authorized persons; provide specific activity posures; wear suitable gloves and coveralls to prevent skin other when its use is identified for certain contributing scenarios;
 Kemarks Frequency and duration of use Remarks Other operational conditions affectir Remarks Technical conditions and measures Consider technical advances and pro- releases. Minimize exposure using m general/local exhaust ventilation. Dra containment. Clean/flush equipment Where there is potential for exposure: training to operators to minimize expo- contamination; wear respiratory prote- clear up spills immediately and disposed 	 Liquid mixture Liquid, vapour pressure < 0.5 kPa at STP Covers daily exposures up to 8 hours (unless stated differently) ng workers exposure Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented. cess upgrades (including automation) for the elimination of neasures such as closed systems, dedicated facilities and suitable ain down systems and clear transfer lines prior to breaking , where possible, prior to maintenance. Restrict access to authorized persons; provide specific activity psures; wear suitable gloves and coveralls to prevent skin ction when its use is identified for certain contributing scenarios; se of wastes safely. Ensure safe systems of work or equivalent
 Remarks Frequency and duration of use Remarks Other operational conditions affecting Remarks Technical conditions and measures Consider technical advances and pro- releases. Minimize exposure using m general/local exhaust ventilation. Dra containment. Clean/flush equipment Where there is potential for exposures training to operators to minimize expo- contamination; wear respiratory prote clear up spills immediately and dispose arrangements are in place to manage Consider the need for risk based heal 	 Liquid, vapour pressure < 0.5 kPa at STP Covers daily exposures up to 8 hours (unless stated differently) ng workers exposure Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented. cess upgrades (including automation) for the elimination of neasures such as closed systems, dedicated facilities and suitable ain down systems and clear transfer lines prior to breaking , where possible, prior to maintenance. Restrict access to authorized persons; provide specific activity osures; wear suitable gloves and coveralls to prevent skin ction when its use is identified for certain contributing scenarios; se of wastes safely. Ensure safe systems of work or equivalent e risks. Regularly inspect, test and maintain all control measures.

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opening or maintenance., Clear spills immediately

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 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

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	Substance is complex UVCB., Predominantly hydrophobic.
Physical Form (at time of use) Remarks	: Liquid mixture : 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

: 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

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimize exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance.

Where there is potential for exposure: Restrict access to authorized persons; provide specific activity training to operators to minimize exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance.,Ensure material transfers are under containment or extract ventilation.

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

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	Substance is complex UVCB., Predominantly hydrophobic.
Physical Form (at time of use)	: Liquid mixture
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Remarks		: Lio	quid, vapour pressu	ıre < 0.5 kP	a at STP	
Frequency and Remarks	d duration of use	e : Co dif	overs daily exposur ferently)	es up to 8 h	nours (unless	stated
Other operation Remarks	onal conditions a	ffecting wo : As ter sta	rkers exposure soumes use at not r mperature, unless s andard of occupatio	nore than 2 stated differ onal hygiene	0°C above ar ently., Assum e is implemen	nbient les a good basic ted.
 Technical conditions and measures Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimize exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance. Where there is potential for exposure: Restrict access to authorized persons; provide specific activity training to operators to minimize exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance.,Handle 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 occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.						
3. Exposure	estimation and	reference	to its source			
Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value type	Level of Exposure	Risk characterization ratio (PEC/PNEC):
ERC7	Hydrocarbon Block Method with Petrorisk		Air		0,039 mg/m3	0,65
			Freshwater		0,028 mg/L	0,65
			Marine water		0,0028 mg/L	0,065
			sediment		weight	0,74
			Marine sediment		0,14 mg/kg wet weiaht	0,074
			Agricultural soil		0,00055 mg/kg wet weight	0,0072

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, CS85	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,5 mg/m3	0,02
			Worker – dermal, long- term – systemic	1,37 mg/kg/d	0,57
			Worker – long-term –		0,59
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		systemic Combined routes		
PROC2, CS85	ECETOC TRA Modified	Worker – inhalation, long-term – systemic	0,5 mg/m3	0,02
		Worker – dermal, long- term – systemic	1,37 mg/kg/d	0,57
		Worker – long-term – systemic Combined routes		0,59
PROC3, CS107	ECETOC TRA Modified	Worker – inhalation, long-term – systemic	1 mg/m3	0,04
		Worker – dermal, long- term – systemic	0,34 mg/kg/d	0,14
		Worker – long-term – systemic Combined routes		0,18
PROC8a, CS39	ECETOC TRA Modified	Worker – inhalation, long-term – systemic	0,5 mg/m3	0,02
		Worker – dermal, long- term – systemic	13,71 mg/kg/d	0,57
		Worker – long-term – systemic Combined routes		0,59
PROC8b, CS14, CS8	ECETOC TRA Modified	Worker – inhalation, long-term – systemic	0,5 mg/m3	0,02
		Worker – dermal, long- term – systemic	0,69 mg/kg/d	0,29
		Worker – long-term – systemic Combined routes		0,31
PROC16, CS107	ECETOC TRA Modified	Worker – inhalation, long-term – systemic	5 mg/m3	0,18
		Worker – dermal, long- term – systemic	0,03 mg/kg/d	0,01
		Worker – long-term – systemic Combined routes		0,20
PROC1: Use CS85: Bulk p	in closed process, roduct storage	no likelihood of exposure		
PROC2: Use CS85: Bulk p	in closed, continue	us process with occasional control	lled exposure	

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

PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities CS14: Bulk transfers 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

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 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 enable the derivation of a DNEL for carcinogenic 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 (/tttp://cariba.tom//tac.or//care.tom//tac.or//tac.or//care.tom//tac.or//care.tom		
1. Short title of Exposure Scenario: Use	as a fuel – professional	
Main User Groups :	SU 22: Professional uses: Public domain (administration,	
Sector of use :	education, entertainment, services, craftsmen) SU 22: Professional uses: Public domain (administration,	
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 :	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 controllin	ng environmental exposure for:ERC9a, ERC9b: Wide	
alspersive indoor use of substance substances in closed systems	es in closed systems, Wide dispersive outdoor use of	
Covers the use as a fuel (or fuel addition equipment maintenance and handling of	ve) and includes activities associated with its transfer, use, of waste.	
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 (kg/d):(Msafe)	: 31.000
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 a Continuous exposure	ffecting environmental exposure
Number of emission days per year	: 365
Emission or Release Factor: Water	: 0,001 %
Emission or Release Factor: Soil	: 0,001 %
Technical conditions and measures	/ Organizational measures
Water	: Treat onsite wastewater (prior to receiving water discharge) to
	provide the required removal efficiency of \geq (%):
Demerke	(Effectiveness: 0%)
Water	. Do not apply industrial studge to flatural soils.
Water	required onsite wastewater removal efficiency of > (%):
	(Effectiveness: 0 %)
Remarks	: Sludge should be incinerated, contained or reclaimed.
Remarks	: Common practices vary across sites thus conservative
	process release estimates used.
Remarks	: No wastewater treatment required.
Remarks	: Risk from environmental exposure is driven by freshwater.
Remarks	: No wastewater treatment required.
Remarks	: Not applicable
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)	: 92,3 %
Percentage removed from waste	: 92,3 %
water	
Conditions and measures related to	external treatment of waste for disposal
Remarks	: Combustion emissions limited by required exhaust emission
	controls.
	Combustion emissions considered in regional exposure
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 according control	ling worker everence for PDOC1. Use in closed
process, no likelihood of exposu	re
Product characteristics	
Remarks	Substance is complex UVCB., Predominantly hydrophobic.
SDS Number:100000100096	41/47

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Consider the need for risk based health surveillance.

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 occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop., 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	Substance is complex UVCB., Predominantly hydrophobic.
Physical Form (at time of use) Remarks	 Liquid mixture 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 affectin Remarks	 ig workers exposure 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 Consider technical advances and proce releases. Minimize exposure using m general/local exhaust ventilation. Dra containment. Clean/flush equipment, Where there is potential for exposure: training to operators to minimize expo contamination; wear respiratory protect clear up spills immediately and dispose arrangements are in place to manage Consider the need for risk based heal Organizational measures to prevent a Avoid direct skin contact with product. (tested to EN374) if hand contact with occur. Wash off any skin contamination minimise exposures and to report any identified.	cess upgrades (including automation) for the elimination of neasures such as closed systems, dedicated facilities and suitable ain down systems and clear transfer lines prior to breaking , where possible, prior to maintenance. Restrict access to authorized persons; provide specific activity sures; wear suitable gloves and coveralls to prevent skin ction when its use is identified for certain contributing scenarios; se of wastes safely. Ensure safe systems of work or equivalent risks. Regularly inspect, test and maintain all control measures. th surveillance. //imit releases, dispersion and exposure . Identify potential areas for indirect skin contact. Wear gloves substance likely. Clean up contamination/spills as soon as they on immediately. Provide basic employee training to prevent / skin problems that may develop., No other specific measures
2.2 Contributing scenario control substance or preparation (chargin non-dedicated facilities	ling worker exposure for: PROC8a: Transfer of ng/discharging) from/to vessels/large containers at
Remarks	Substance is complex UVCB., Predominantly hydrophobic.
Physical Form (at time of use) Remarks	: Liquid mixture : Liquid, vapour pressure < 0.5 kPa at STP
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Frequecy 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 Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimize exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventiliation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance. Where there is potential for exposure. Restrict access to autohrized persons, provide specific activity training to operators to minimize exposure usitable gloves and coverails to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and minitani all control measures. Consider the need for risk based health surveillance. Drain down and flush system prior to equipment opening or maintenance. Clear spills immediately 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 product. Identify potential areas for indirect skin contact. Wear gloves to substance length and in product identify potential areas for indirect skin contact. Wear gloves tested tocuru. Wash off any skin contamination immediately. Provi					
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 Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimize exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance. Where there is potential for exposure: Restrict access to authorized persons; provide specific activity training to operators to minimize exposures; wear suitable gloves and coveralls to prevent skin containment, wear respiratory protection when its uses is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveiliance., Drain down and flush system prior to equipment opening or maintenance. Clear spills immediately Organizational measures related to personal protection, hygiene and health evaluation. Wear chemically resistant gloves (tested to EN374) in combination with "basic" employee training. 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 Substance is complex UVCB., Predominantly hydrophobic. <td< td=""><td>Frequency and duration of use Remarks</td><td>: Covers daily exposures up to 8 hours (unless stated differently)</td></td<>	Frequency and duration of use Remarks	: Covers daily exposures up to 8 hours (unless stated differently)			
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TrusTec™ Diesel Reference Fuel U-34 Version 1.19 Revision Date 2023-05-18 clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. Ensure material transfers are under containment or extract ventilation. 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 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 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 Substance is complex UVCB., Predominantly hydrophobic. Physical Form (at time of use) : Liquid mixture 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 : 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 Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimize exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance. Where there is potential for exposure: Restrict access to authorized persons; provide specific activity training to operators to minimize exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. 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 occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop., No other specific measures identified. 3. Exposure estimation and reference to its source Environment Contributing Specific Level of Risk Exposure Compartment Value type characterization Assessment

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SDS Number:100000100096

SAFETY DATA SHEET

TrusTec[™] Diesel Reference Fuel U-34

Version 1.19

Revision Date 2023-05-18

Scenario	Method	conditions		Exposure	ratio (PEC/PNEC):
ERC9a, ERC9b	Hydrocarbon Block Method with Petrorisk		Air	0,00015 mg/m3	
			Freshwater	0,000029 mg/L	0,00092
			Marine water	0,0000005 mg/L	0,000023
			Freshwater sediment	0,0032 mg/kg wet weight	0,00085
			Marine sediment	0,0001 mg/kg wet weight	0,00
			Agricultural soil	0,00022 mg/kg wet weight	0,000058

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, 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	0,14	
			Worker – long-term – systemic Combined routes		0,14	
PROC2, CS15	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,5 mg/m3	0,04	
			Worker – dermal, long- term – systemic	1,37 mg/kg/d	0,57	
			Worker – long-term – systemic Combined routes		0,61	
PROC3, CS107	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m³	0,04	
			Worker – dermal, long- term – systemic	0,34 mg/kg/d	0,14	
			Worker – long-term – systemic Combined routes		0,18	
PROC8a, CS39	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	5 mg/m3	0,18	
			Worker – dermal, long- term – systemic	13,71 mg/kg/d	0,57	
			Worker – long-term – systemic Combined routes		0,75	
PROC8b, CS14	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	5 mg/m³	0,04	
			Worker – inhalation, long-term – systemic	0,69 mg/kg/d	0,28	
			Worker – long-term – systemic Combined routes		0,32	
PROC8b, CS8, CS507	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	5 mg/m³	0,18	
			Worker – inhalation, long-term – systemic	6,86 mg/kg/d	0,57	
			Worker – long-term – systemic Combined routes		0,75	
PROC16, CS107	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	20 mg/m ³	0,76	
			Worker – dermal, long- term – systemic	0,34 mg/kg/d	0,14	
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		Worker – long-term – systemic Combined routes		0,87		
PROC1: Use in closed process CS67: Storage	, no likelihood c	of exposure				
PROC2: Use in closed, continue CS15: General exposures (clos	PROC2: Use in closed, continuous process with occasional controlled exposure CS15: General exposures (closed systems)					
PROC3: Use in closed batch pr CS107: (closed systems)	ocess (synthes	is or formulation)				
PROC8a: Transfer of substance at non-dedicated facilities CS39: Equipment cleaning and	e or preparation maintenance	n (charging/discharg	ing) from/to vesse	els/large containers		
PROC8b: Transfer of substance containers at dedicated facilities CS14: Bulk transfers	e or preparation s	n (charging/ discharg	jing) from/ to vess	sels/ large		
PROC8b: Transfer of substance containers at dedicated facilities CS8: Drum/batch transfers CS507: Refueling	e or preparation s	n (charging/ discharg	jing) from/ to vess	sels/ large		
PROC16: Using material as fue CS107: (closed systems)	I sources, limite	ed exposure to unbu	rned product to b	e expected		
4. Guidance to Downstream by the Exposure Scenario	User to evalu	ate whether he w	vorks inside the	e boundaries set		
Predicted exposures are not Measures/Operational Condi Where other Risk Manageme ensure that risks are manage	expected to exe tions outlined in ent Measures/O ed to at least eq	ceed the DN(M)EL v Section 2 are imple perational Condition uivalent levels.	when the Risk Ma emented. Is are adopted, th	nagement en users should		
Available hazard data do not Available hazard data do not Available hazard data do not	enable the deri enable the deri support the nee	vation of a DNEL fo vation of a DNEL fo ed for a DNEL to be	r dermal irritant e r carcinogenic eff established for o	trects. ects. ther health		
Risk Management Measures assumed operating condition necessary to define appropria	are based on c s which may nc ate site-specific	ualitative risk chara t be applicable to al risk management n	cterisation.Guidal I sites; thus, scali neasures.	nce is based on ng may be		
Required removal efficiency f either alone or in combinatior Required removal efficiency f	for wastewater on. For air can be ac	can be achieved usi	ng onsite/offsite t	echnologies, ther alone or in		
combination. Further details on scaling and (http://cefic.org/en/reach-for-i	d control techno industries-librar	ologies are provided ies.html).	in SpERC factsh	eet		
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