CHEMICAL SAFETY REPORT

Part B

Straight Run Gas Oils

Prepared by: CONCAWE

9. EXPOSURE ASSESSMENT

Table 9.1. Identified Use Description and Exposure Scenario Number Key

IU	Category	Identified Use Name	Sector	ES Number	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Article Category (AC)	Environmental Release Category (ERC)	Specific Environmental Release Category (SpERC)
1	Straight Run Gas Oils	01 – Manufacture of Substance	Industrial	ES 9.1.1	3, 8, 9	NA	1, 2, 3, 4, 8a, 8b, 15	NA	1, 4	ESVOC SpERC 1.1.v1
2	Straight Run Gas Oils	01b – Use of Substance as Intermediate	Industrial	ES 9.2.1	3, 8, 9	NA	1, 2, 3, 4, 8a, 8b, 15	NA	6a	ESVOC SpERC 6.1a.v1
3	Straight Run Gas Oils	01a – Distribution of Substance	Industrial	ES 9.3.1	3	NA	1, 2, 3, 4, 8a, 8b, 9, 15	NA	1, 2, 3, 4, 5, 6a, 6b, 6c, 6d, 7	ESVOC SpERC 1.1b.v1
4	Straight Run Gas Oils	02 – Formulation & (Re)packing of Substances and Mixtures	Industrial	ES 9.4.1	3, 10	NA	1, 2, 3, 4, 5, 8a, 8b, 9, 14, 15	NA	2	ESVOC SpERC 2.2.v1
5	Straight Run Gas Oils	03a – Uses in Coatings: Industrial	Industrial	ES 9.5.1	3	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 10, 13, 15	NA	4	ESVOC SpERC 4.3a.v1
6	Straight Run Gas Oils	03b – Uses in Coatings: Professional	Professional	ES 9.6.1	22	NA	1, 2, 3, 4, 5, 8a, 8b, 10, 11, 13, 15, 19	NA	8a, 8d	ESVOC SpERC 8.3b.v1
7	Straight Run Gas Oils	04a – Use in Cleaning Agents: Industrial	Industrial	ES 9.7.1	3	NA	1, 2, 3, 4, 7, 8a, 8b, 10, 13	NA	4	ESVOC SpERC 4.4a.v1
8	Straight Run Gas Oils	04b – Use in Cleaning Agents: Professional	Professional	ES 9.8.1	22	NA	1, 2, 3, 4, 8a, 8b, 10, 11, 13	NA	8a, 8d	ESVOC SpERC 8.4b.v1

9	Straight Run Gas Oils	05a – Use in Oil and Gas Field Drilling and Production Operations: Industrial	Industrial	ES 9.9.1	3	NA	1, 2, 3, 4, 8a, 8b	NA	4	QUALITATIVE ASSESSMENT FOR ENVIRONMENT
10	Straight Run Gas Oils	05b – Use in Oil and Gas field drilling and production operations: Professional	Professional	ES 9.10.1	22	NA	1, 2, 3, 4, 8a, 8b	NA	8d	QUALITATIVE ASSESSMENT FOR ENVIRONMENT
11	Straight Run Gas Oils	06a – Lubricants: Industrial	Industrial	ES 9.11.1	3	NA	1, 2, 3, 4, 7, 8a, 8b, 9, 10, 13, 17, 18	NA	4, 7	ESVOC SpERC 4.6a.v1
12	Straight Run Gas Oils	06b – Lubricants: Professional (Low Release)	Professional	ES 9.12.1	22	NA	1, 2, 3, 4, 8a, 8b, 9, 10, 11, 13, 17, 18, 20	NA	9a, 9b	ESVOC SpERC 9.6b.v1
13	Straight Run Gas Oils	06c – Lubricants: Professional (High Release)	Professional	ES 9.13.1	22	NA	1, 2, 3, 4, 8a, 8b, 9, 10, 11, 13, 17, 18, 20	NA	8a, 8d	ESVOC SpERC 8.6c.v1
14	Straight Run Gas Oils	07a – Use in Metal Working Fluids / Rolling Oils: Industrial	Industrial	ES 9.14.1	3	NA	1, 2, 3, 5, 8a, 8b, 9, 10, 11, 13, 17	NA	4	ESVOC SpERC 4.7a.v1
15	Straight Run Gas Oils	07b – Use in Metal working fluids / rolling oils: Professional	Professional	ES 9.15.1	22	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 17	NA	8a, 8d	ESVOC SpERC 8.7c.v1
16	Straight Run Gas Oils	10a – Use as Release Agents or Binders: Industrial	Industrial	ES 9.16.1	3	NA	1, 2, 3, 4, 6, 7, 8b, 10, 13, 14	NA	4	ESVOC SpERC 4.10a.v1
17	Straight Run Gas Oils	10b – Use as Release Agents or Binders: Professional	Professional	ES 9.17.1	22	NA	1, 2, 3, 4, 6, 8a, 8b, 10, 11, 14	NA	8a, 8d	ESVOC SpERC 8.10b.v1
18	Straight Run Gas Oils	12a – Use as a Fuel: Industrial	Industrial	ES 9.18.1	3	NA	1, 2, 3, 8a, 8b, 16	NA	7	ESVOC SpERC 7.12a.v1

19	Straight Run Gas Oils	12b – Use as a Fuel: Professional	Professional	ES 9.19.1	22	NA	1, 2, 3, 8a, 8b, 16	NA	9a, 9b	ESVOC SpERC 9.12b.v1
20	Straight Run Gas Oils	12c – Use as a Fuel: Consumer	Consumer	ES 9.20.1	21	13	NA	NA	9a, 9b	ESVOC SpERC 9.12c.v1
21	Straight Run Gas Oils	18b – Explosives Manufacture & Use: Professional	Professional	ES 9.21.1	22	NA	1, 3, 5, 8a, 8b	NA	8e	ERC DEFINED RELEASE FRACTIONS
22	Straight Run Gas Oils	13a – Use as Functional Fluids: Industrial	Industrial	ES 9.22.1	3	NA	1, 2, 3, 4, 8a, 8b, 9	NA	7	ESVOC SpERC 7.13a.v1
23	Straight Run Gas Oils	13b – Use as Functional Fluids: Professional	Professional	ES 9.23.1	22	NA	1, 2, 3, 8a, 9, 20	NA	9a, 9b	ESVOC SpERC 9.13b.v1
24	Straight Run Gas Oils	15 – Use in Road and Construction Applications: Professional	Professional	ES 9.24.1	22	NA	8a, 8b, 9, 10, 11, 13	NA	8d, 8f	ESVOC SpERC 8.15.v1
25	Straight Run Gas Oils	19 – Rubber Production and processing: Industrial	Industrial	ES 9.25.1	3, 10, 11	NA	1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 13, 14, 15, 21	NA	1, 4, 6d	ESVOC SpERC 4.19.v1
26	Straight Run Gas Oils	16 – Other Consumer Uses	Consumer	ES 9.26.1	21	28, 39	NA	NA	8a, 8d	ESVOC SpERC 8.16.v1

9.1. Manufacture of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) – Industrial

9.1.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)						
Little Manufacture of Substance						
Sector(a) of Line		2 8 0				
Secior(s) or use		3, 8, 9 1, 2, 3, 4, 85, 85, 15				
Frocess Calegories		Further information on the manning and allocation of				
		PROC codes is contained in Table 9.1				
Environmental Release Cate	gories	1, 4				
Specific Environmental Rele	ase Category	ESVOC SpERC 1.1.v1				
Processes, tasks, activities	s covered					
Manufacture of the substance recovery, material transfers, loading (including marine ver	e or use as a proce storage, sampling, ssel/barge, road/rai	ess chemical or extraction agent. Includes recycling / associated laboratory activities, maintenance and il car and bulk container).				
Assessment Method						
See Section 3.						
Section 2 Operational con	ditions and risk m	nanagement measures				
Section 2.1 Control of Wor	rker exposure					
Product characteristics	Liquid					
Vapour pressure (kPa)	Liquid vanour pres	ssure <0.5 kPa at STP $OC3$				
Concentration of substance	Covers percentage	e substance in the product up to 100 % (unless stated				
in product	differently) G13					
Frequency and duration of	Covers daily expos	sures up to 8 hours (unless stated differently) G2				
use/exposure						
Other Operational	Operation is carrie	d out at elevated temperature (> 20°C above ambient				
Conditions affecting	temperature). OC7	7. Assumes a good basic standard of occupational				
exposure	hygiene is impleme	ented G1.				
Specific Risk Management	Measures and Op	perating Conditions				
See Appendix 3.						
Section 2.2 Control of env	rironmental expos	ure				
Product characteristics						
Substance is complex UVCE	3 [PrC3]. Predomin	antly hydrophobic [PrC4a].				
Amounts used						
Fraction of EU tonnage used	l in region	0.1				
Regional use tonnage (tonne	es/year)	7.7e5				
Fraction of Regional tonnage	e used locally	0.78				
Annual site tonnage (tonnes	/vear)	6.0e5				
Maximum daily site tonnage	(kg/dav)	2.0e6				
Frequency and duration of	use					
Continuous release [FD2]	Continuous release [FD2]					
Emission days (days/year)						
Environmental factors not	influenced by risk	k management				
Local freshwater dilution fact	tor	10				
Local marine water dilution f	actor	100				
Other given operational co	nditions affecting	environmental exposure				

9.1.2. Exposure Estimation

9.1.2.1. Human Health

See Appendix 2.

9.1.2.2. Environment

9.2. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) as Intermediate – Industrial

9.2.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)						
Title						
Use of Substance as Interme	ediate					
Use Descriptor						
Sector(s) of Use		3, 8, 9				
Process Categories		1, 2, 3, 4, 8a, 8b, 15				
_		Further information on the mapping and allocation of				
		PROC codes is contained in Table 9.1				
Environmental Release Cate	gories	6a				
Specific Environmental Rele	ase Category	ESVOC SpERC 6.1a.v1				
Processes, tasks, activities	s covered					
Use of substance as an inter	mediate. Includes r	recycling/ recovery, mater	ial transfers, storage,			
sampling, associated laborat	ory activities, main	tenance and loading (inclu	uding marine vessel/barge,			
road/rail car and bulk contair	ier).					
Assessment Method						
See Section 3.						
Section 2 Operational con	ditions and risk m	nanagement measures				
Section 2.1 Control of wor	ker exposure					
Product characteristics						
Physical form of product	Liquid		~~			
Vapour pressure (кна)	Liquid, vapour pres	ssure <0.5 KPa at SIP. U				
	Covers percentage	e substance in the product	up to 100 % (unless stated			
In product	differently) G13	to 9 hours (unlos	a atatad difformative C2			
		sures up to a nours (unles	s stated differentiy) GZ			
Other Operational	Operation is carrie	d out at elevated tempera	ture (> 20°C above ambient			
Conditions affecting	temperature), OC7	Assumes a good basic s	standard of occupational			
exposure	hvaiene is impleme	ented G1.				
Specific Risk Management	Measures and Op	perating Conditions				
•						
See Appendix 3						
See Appendix 5.						
Section 2.2 Control of env	vironmental expos					
Dreduct chorectoristics		ure				
Product characteristics			1			
Substance is complex UVCE	s [PrC3]. Predomin	antiy nydrophobic [PrC4a].			
Amounts used						
Fraction of EU tonnage used	l in region		0.1			
Regional use tonnage (tonne	es/year)		5.1e4			
Fraction of Regional tonnage	e used locally		0.29			
Annual site tonnage (tonnes/	/year)		1.5e4			
Maximum daily site tonnage	(kg/day)		5.0e4			
Frequency and duration of use						
Continuous release [FD2]						
Emission days (days/year)	Emission days (days/year)					
Environmental factors not influenced by risk management						
Local freshwater dilution fact	tor		10			
Local marine water dilution f	actor		100			
Other given operational co	nditions affecting	environmental exposur	A			
other given operational conditions affecting environmental exposure						

Release fraction to air from process (initial release prior to RMM)	1.0e-3					
Release fraction to wastewater from process (initial release prior to RMM)	3.0e-5					
Release fraction to soil from process (initial release prior to RMM)	0.001					
Technical conditions and measures at process level (source) to pre-	vent release					
Common practices vary across sites thus conservative process release e	stimates used [TCS1].					
Technical onsite conditions and measures to reduce or limit dischar	rges, air emissions and					
releases to soil	g,					
Risk from environmental exposure is driven by freshwater sediment [TCF	R1b].					
If discharging to domestic sewage treatment plant, no onsite wastewater Prevent discharge of undissolved substance to or recover from onsite wa	treatment required [TCR9]. stewater [TCR14].					
Treat air emission to provide a typical removal efficiency of (%)	80					
Treat onsite wastewater (prior to receiving water discharge) to provide	50.4					
the required removal efficiency \geq (%)						
If discharging to domestic sewage treatment plant, provide the required	0					
onsite wastewater removal efficiency of \geq (%)						
Organisation measures to prevent/limit release from site						
Do not apply industrial sludge to natural soils [OMS2]. Sludge should be reclaimed [OMS3].	incinerated, contained or					
Conditions and measures related to municipal sewage treatment pla	ant					
Estimated substance removal from wastewater via domestic sewage treatment (%)	94.1					
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94.1					
Maximum allowable site tonnage (M _{Safe}) based on release following total	4.2e5					
wastewater treatment removal (kg/d)						
Assumed domestic sewage treatment plant flow (m ³ /d)	2000					
Conditions and measures related to external treatment of waste for	disposal					
External treatment and disposal of waste should comply with applicable r	egulations [ETW3].					
Conditions and measures related to external recovery of waste	· · · ·					
External recovery and recycling of waste should comply with applicable re	egulations [ERW1]					
Additional information on the basis for the allocation of the indentif	ied OCs and RMMs is					
contained in PETRORISK file.						
Section 3 Exposure Estimation						
3.1. Health						
See Appendix 2.						
3.2. Environment						
The Hydrocarbon Block Method has been used to calculate environmenta	al exposure with the Petrorisk					
model [EE2].						
Section 4 Guidance to check compliance with the Exposure Scenario						
4.1. Health						
Available hazard data do not support the need for a DNEL to be established for other health effects.						
G36. Risk Management Measures are based on qualitative risk characterisation. G37.						
4.2. Environment						
Guidance is based on assumed operating conditions which may not be a	pplicable to all sites; thus,					
scaling may be necessary to define appropriate site-specific risk manage	ment measures [DSU1].					
Required removal efficiency for wastewater can be achieved using onsite	/offsite technologies, either					
alone or in combination [DSU2]. Required removal efficiency for air can l	be achieved using onsite					
technologies, either alone or in combination [USU3]. Further details on s	calling and control					
	or-moustnes-noranes.numl)					

9.2.2. Exposure Estimation

9.2.2.1. Human Health

See Appendix 2.

9.2.2.2. Environment

9.3. Distribution of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) – Industrial

9.3.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)						
Title						
Distribution of Substance						
Use Descriptor						
Sector(s) of Use		3				
Process Categories		1, 2, 3, 4, 8a, 8b, 9, 15 Further information on the mapping and allocation of PROC codes is contained in Table 9.1				
Environmental Release Cate	gories	1, 2, 3, 4, 5, 6a, 6b, 6c, 6	d, 7			
Specific Environmental Rele	ase Category	ESVOC SpERC 1.1b.v1				
Processes, tasks, activities	s covered					
Bulk loading (including marin drums and small packs) of s associated laboratory activiti	ne vessel/barge, rai ubstance, including es.	l/road car and IBC loading its sampling, storage, unl	 and repacking (including oading, maintenance and 			
Assessment Method						
See Section 3.						
Section 2 Operational con	ditions and risk m	nanagement measures				
Section 2.1 Control of wor	ker exposure					
Product characteristics	Liquid					
	Liquid vanaur prov	ouro <0.5 kDo of STD O	~ 2			
Concentration of substance	Covers percentage	substance in the product	up to 100 % (upless stated			
in product	differently) G13					
Frequency and duration of	Covers daily expos	sures up to 8 hours (unles	s stated differently) G2			
use/exposure						
Other Operational	Assumes use at no		ambient temperature, unless			
	bygiene is impleme	onted G1				
Specific Risk Management	Measures and Or	perating Conditions				
See Appendix 3.						
Section 2.2 Control of env	ironmental expos	ure				
Product characteristics						
Substance is complex UVCE	8 [PrC3]. Predomin	antly hydrophobic [PrC4a]].			
Amounts used						
Fraction of EU tonnage used	l in region		0.1			
Regional use tonnage (tonne	es/year)		7.7e5			
Fraction of Regional tonnage	e used locally		0.002			
Annual site tonnage (tonnes	/year)		1.5e3			
Maximum daily site tonnage	(kg/day)		1.5e4			
Frequency and duration of use						
Continuous release [FD2].						
Emission days (days/year)	Emission days (days/year)					
Environmental factors not	influenced by risk	c management				
Local freshwater dilution fact	tor		10			
Local marine water dilution f	actor		100			
Other given operational co	nditions affecting	environmental exposur	e			

Release fraction to air from process (initial release prior to RMM) 1.	.0e-3					
Release fraction to wastewater from process (initial release prior to RMM)	.0e-6					
Release fraction to soil from process (initial release prior to RMM) 0.	.00001					
Technical conditions and measures at process level (source) to preven	nt release					
Common practices vary across sites thus conservative process release esti	mates used [TCS1].					
Technical onsite conditions and measures to reduce or limit discharge	es, air emissions and					
releases to soil						
Risk from environmental exposure is driven by freshwater sediment [TCR1b No wastewater treatment required [TCR6].)].					
Treat air emission to provide a typical removal efficiency of (%) 90	0					
Treat onsite wastewater (prior to receiving water discharge) to provide 0						
the required removal efficiency \geq (%)						
If discharging to domestic sewage treatment plant, provide the required 0 onsite wastewater removal efficiency of $> (\%)$						
Organisation measures to prevent/limit release from site						
Do not apply industrial sludge to natural soils [OMS2]. Sludge should be ind reclaimed [OMS3].	cinerated, contained or					
Conditions and measures related to municipal sewage treatment plant						
Estimated substance removal from wastewater via domestic sewage 94	4.1					
treatment (%)						
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	4.1					
Maximum allowable site tonnage (M _{Safe}) based on release following total 3.	.9e6					
wastewater treatment removal (kg/d)						
Assumed domestic sewage treatment plant flow (m ³ /d) 20	000					
Conditions and measures related to external treatment of waste for dis	sposal					
External treatment and disposal of waste should comply with applicable reg	ulations [ETW3].					
Conditions and measures related to external recovery of waste						
External recovery and recycling of waste should comply with applicable requ	ulations [ERW1].					
Additional information on the basis for the allocation of the indentified	OCs and RMMs is					
contained in PETRORISK file.						
Section 3 Exposure Estimation						
3.1. Health						
See Appendix 2.						
3.2. Environment						
The Hydrocarbon Block Method has been used to calculate environmental e	exposure with the Petrorisk					
model [EE2].						
Section 4 Guidance to check compliance with the Exposure Scenario						
4.1. Health						
Available hazard data do not support the need for a DNEL to be established	Available hazard data do not support the need for a DNEL to be established for other health effects.					
G36. Risk Management Measures are based on qualitative risk characterisation. G37.						
4.2. Environment						
Guidance is based on assumed operating conditions which may not be appli-	licable to all sites; thus,					
scaling may be necessary to define appropriate site-specific risk manageme	ent measures [DSU1].					
Required removal efficiency for wastewater can be achieved using onsite/of	ashioved voing ensite					
aune or in combination [DSU2]. Required removal efficiency for air can be	achieved using onsite					
technologies, either alone of in combination [DSU3]. Further details on scal	industrios librarias html)					
RECOMPOSES ALE DI DIVIDED IL SOFRU JACISCHEL (1000 //CEUC OLO/PO//PACO-IOL-	TOTAL STREET OF ALL STREET					

9.3.2. Exposure Estimation

9.3.2.1. Human Health

See Appendix 2.

9.3.2.2. Environment

9.4. Formulation & (Re)packing of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) – Industrial

9.4.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)						
Title						
Formulation & (Re)packing o	of Substances and I	Mixtures – Industrial				
Use Descriptor						
Sector(s) of Use		3, 10				
Process Categories		1, 2, 3, 4, 5, 8a, 8b, 9, 14	, 15			
		Further information on the mapping and allocation of				
		PROC codes is contained	d in Table 9.1			
Environmental Release Cate	egories	2				
Specific Environmental Rele	ase Category	ESVOC SpERC 2.2.v1				
Processes, tasks, activities	s covered					
Formulation, packing and re-	-packing of the sub	stance and its mixtures in	batch or continuous			
operations, including storage	e, materials transfer	rs, mixing, tabletting, com	pression, pelletization,			
extrusion, large and small so	cale packing, maint	enance, sampling and as	sociated laboratory activities			
See Section 3.						
Section 2 Operational con	altions and risk in	nanagement measures				
Section 2.1 Control of wor	ker exposure					
Product characteristics						
Physical form of product	Liquid					
Vapour pressure (kPa)	Liquid, vapour pres	ssure <0.5 kPa at STP. O	C3.			
Concentration of substance	Covers percentage	e substance in the product	up to 100 % (unless stated			
in product	differently) G13					
Frequency and duration of	Covers daily expos	sures up to 8 hours (unles	s stated differently) G2			
use/exposure						
Other Operational	Assumes use at no	ot more than 20°C above a	ambient temperature, unless			
Conditions affecting	stated differently.	G15. Assumes a good bas	sic standard of occupational			
exposure	hygiene is impleme	ented G1.				
Specific Risk Management	Measures and Op	berating Conditions				
See Appendix 3.						
	· · · · · · · · · · · · · · · · · · ·					
Section 2.2 Control of env	rironmental expos	ure				
Product characteristics						
Substance is complex UVCE	3 [PrC3]. Predomin	antly hydrophobic [PrC4a]].			
Amounts used						
Fraction of EU tonnage used	l in region		0.1			
Regional use tonnage (tonne	es/year)		7.1e5			
Fraction of Regional tonnage	e used locally		0.042			
Annual site tonnage (tonnes	/vear)		3.0e4			
Maximum daily site tonnage	(kg/day)		1.0e5			
Frequency and duration of	use					
Continuous release [FD2]						
Emission days (days/year)			300			
Environmental factors not	influenced by risk	c management				
Local freshwater dilution fact	tor	g	10			
Local marine water dilution f	actor		100			
Other given operational co	nditions affecting	Anvironmental exposur	A			
Stree given operational Co	other given operational conditions anecting environmental exposure					

Release fraction to air from process (<i>after typical onsite RMMs,</i>	1.0e-2					
consistent with EU Solvent Emissions Directive requirements)	0.05.5					
Release fraction to wastewater from process (initial release prior to RMM)	2.0e-5					
Release fraction to soil from process (initial release prior to RMM)	0.0001					
Technical conditions and measures at process level (source) to pre-	vent release					
Common practices vary across sites thus conservative process release e	stimates used [TCS1].					
Technical onsite conditions and measures to reduce or limit dischar	rges, air emissions and					
releases to soil	-					
Risk from environmental exposure is driven by freshwater sediment [TCF	R1b].					
If discharging to domestic sewage treatment plant, no onsite wastewater	treatment required [TCR9].					
Prevent discharge of undissolved substance to or recover from onsite wa	stewater [TCR14].					
Treat air emission to provide a typical removal efficiency of (%)	0					
Treat onsite wastewater (prior to receiving water discharge) to provide	62.8					
the required removal efficiency \geq (%)						
If discharging to domestic sewage treatment plant, provide the required	0					
onsite wastewater removal efficiency of \geq (%)						
Organisation measures to prevent/limit release from site						
Do not apply industrial sludge to natural soils [OMS2]. Sludge should be reclaimed [OMS3].	incinerated, contained or					
Conditions and measures related to municipal sewage treatment pla	ant					
Estimated substance removal from wastewater via domestic sewage	94.1					
treatment (%)	04.4					
(domestic treatment plant) RMMs (%)	94.1					
Maximum allowable site tonnage (M _{Safe}) based on release following total	6.3e5					
wastewater treatment removal (kg/d)						
Assumed domestic sewage treatment plant flow (m°/d)	2000					
Conditions and measures related to external treatment of waste for	disposal					
External treatment and disposal of waste should comply with applicable r	egulations [ETW3].					
Conditions and measures related to external recovery of waste						
External recovery and recycling of waste should comply with applicable re	egulations [ERW1].					
Additional information on the basis for the allocation of the indentified	ied OCs and RMMs is					
contained in PETRORISK file.						
Section 3 Exposure Estimation						
3.1. Health						
See Appendix 2.						
3.2. Environment						
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk						
model [EE2].						
Section 4 Guidance to check compliance with the Exposure Scenario						
4.1. Health Available becard date do not support the pood for a DNEL to be established for other backty affects						
Available nazaru data do not support the need for a DNEL to be established for other health effects.						
4 2 Environment						
Guidance is based on assumed operating conditions which may not be a	policable to all sites: thus					
scaling may be necessary to define appropriate site-specific risk manage	ment measures IDSU11					
Required removal efficiency for wastewater can be achieved using onsite	offsite technologies. either					
alone or in combination [DSU2]. Required removal efficiency for air can	be achieved using onsite					
technologies, either alone or in combination [DSU3]. Further details on s	caling and control					
technologies are provided in SpERC factsheet (http://cefic.org/en/reach-f	or-industries-libraries.html)					
[DSU4].						

9.4.2. Exposure Estimation

9.4.2.1. Human Health

See Appendix 2.

9.4.2.2. Environment

9.5. Uses of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Coatings – Industrial

9.5.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)					
Title					
Uses in Coatings					
Use Descriptor					
Sector(s) of Use		3			
Process Categories		1, 2, 3, 4, 5, 7, 8a, 8b, 10 Further information on the PROC codes is contained	, 13, 15 e mapping and allocation of d in Table 9.1		
Environmental Release Cate	egories	4			
Specific Environmental Rele	ase Category	ESVOC SpERC 4.3a.v1			
Processes, tasks, activitie	s covered				
Covers the use in coatings (materials receipt, storage, pu roller, spreader, dip, flow, flu cleaning, maintenance and a	paints, inks, adhesi reparation and trans idised bed on produ associated laborato	ves, etc) including exposi sfer from bulk and semi-bu uction lines and film forma ry activities.	ures during use (including ulk, application by spray, tion) and equipment		
Assessment Method					
See Section 3.					
Section 2 Operational con	ditions and risk m	nanagement measures			
Section 2.4 Control of way					
Product characteristics	ker exposure				
Physical form of product	Liquid				
Vapour pressure (kPa)	Liquid vapour pres	ssure <0.5 kPa at STP_0	23		
Concentration of substance	Covers percentage	e substance in the product	up to 100 % (unless stated		
in product	differently) G13				
Frequency and duration of use/exposure	Covers daily expos	sures up to 8 hours (unles	s stated differently) G2		
Other Operational	Assumes use at no	ot more than 20°C above a	ambient temperature, unless		
Conditions affecting	stated differently.	G15. Assumes a good bas	ic standard of occupational		
exposure	hygiene is impleme	ented G1.			
Specific Risk Management	: Measures and Op	berating Conditions			
See Appendix 3.					
Section 2.2 Control of env	ironmental expos	ure			
Product characteristics					
Substance is complex UVCE	[PrC3]. Predomin	antly hydrophobic [PrC4a]].		
Amounts used					
Fraction of EU tonnage used	l in region		0.1		
Regional use tonnage (tonne	es/year)		8.2e2		
Fraction of Regional tonnage	e used locally		1		
Annual site tonnage (tonnes	/year)		8.2e2		
Maximum daily site tonnage	(kg/day)		4.1e4		
Frequency and duration of	use		1		
Continuous release [FD2].					
Emission days (days/year)	Emission days (days/year)				
Environmental factors not	influenced by risk	k management			
Local freshwater dilution fac	tor		10		
Local marine water dilution f	actor		100		

Other given operational conditions affecting environmental exposure				
Release fraction to air from process (initial release prior to RMM) 0.98				
Release fraction to wastewater from process (initial release prior to 7.0e-5 RMM)				
Release fraction to soil from process (initial release prior to RMM) 0				
Technical conditions and measures at process level (source) to prevent release				
Common practices vary across sites thus conservative process release estimates used [TCS1].				
Technical onsite conditions and measures to reduce or limit discharges, air emissions and				
releases to soil				
Risk from environmental exposure is driven by freshwater sediment [TCR1b]. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required [TCR9].				
Prevent discharge of undissolved substance to or recover from onsite wastewater [TCR14].				
I reat air emission to provide a typical removal efficiency of (%) 90				
Treat onsite wastewater (prior to receiving water discharge) to provide 74.1 the required removal efficiency \geq (%)				
If discharging to domestic sewage treatment plant, provide the required 0				
onsite wastewater removal efficiency of \geq (%)				
Organisation measures to prevent/limit release from site				
Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].				
Conditions and measures related to municipal sewage treatment plant				
Estimated substance removal from wastewater via domestic sewage 94.1 treatment (%)				
Total efficiency of removal from wastewater after onsite and offsite 94.1				
Maximum allowable site tonnage (M _{Safe}) based on release following total 1.8e5				
wastewater treatment removal (kg/d)				
Assumed domestic sewage treatment plant flow (m ² /d) [2000				
Conditions and measures related to external treatment of waste for disposal				
External treatment and disposal of waste should comply with applicable regulations [ETW3].				
Conditions and measures related to external recovery of waste				
External recovery and recycling of waste should comply with applicable regulations [ERW1].				
Additional information on the basis for the allocation of the indentified OCs and RMMs is				
contained in PETRORISK file.				
Section 3 Exposure Estimation				
3.1. Health See Annendiy 2				
3 2 Environment				
5.2. Environment The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petroris	iek			
model [FE2]	SK			
Section 4 Guidance to check compliance with the Exposure Scenario				
4.1. Health				
Available hazard data do not support the need for a DNEL to be established for other health effects.				
G36. Risk Management Measures are based on qualitative risk characterisation. G37.				
4.2. Environment				
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus,				
scaling may be necessary to define appropriate site-specific risk management measures [DSU1].				
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either				
alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite				
technologies, either alone or in combination [DSU3]. Further details on scaling and control				
technologies are provided in SpERC factsheet (<u>http://cefic.org/en/reach-for-industries-libraries.html</u>) [DSU4].				

9.5.2. Exposure Estimation

9.5.2.1. Human Health

See Appendix 2.

9.5.2.2. Environment

9.6. Uses of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Coatings – Professional

9.6.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)			
Title			
Uses in Coatings – Professional			
Use Descriptor			
Sector(s) of Use		22	
Process Categories		1, 2, 3, 4, 5, 8a, 8b, 10, 1 Further information on the PROC codes is contained	1, 13, 15, 19 e mapping and allocation of d in Table 9.1
Environmental Release Cate	egories	8a, 8d	
Specific Environmental Rele	ase Category	ESVOC SpERC 8.3b.v1	
Processes, tasks, activitie	s covered		
Covers the use in coatings (materials receipt, storage, pu roller, brush, spreader by ha maintenance and associated	paints, inks, adhesi reparation and trans nd or similar metho d laboratory activitie	ves, etc) including exposi sfer from bulk and semi-bu ds, and film formation), ar es.	ures during use (including ulk, application by spray, nd equipment cleaning,
Assessment Method			
See Section 3.			
Section 2 Operational con	ditions and risk m	nanagement measures	
Section 2.1 Control of wo	kar avnosura		
Product characteristics			
Physical form of product	Liquid		
Vapour pressure (kPa)	Liquid, vapour pres	ssure <0.5 kPa at STP. O	C3.
Concentration of substance in product	Covers percentage differently) G13	e substance in the product	up to 100 % (unless stated
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated differently) G2		
Other Operational Conditions affecting exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently. G15. Assumes a good basic standard of occupational bygiene is implemented G1		
Specific Risk Management Measures and Operating Conditions			
See Appendix 3.			
Section 2.2 Control of env	rironmental expos	ure	
Product characteristics			
Substance is complex UVCE	3 [PrC3]. Predomin	antly hydrophobic [PrC4a]].
Amounts used			
Fraction of EU tonnage used	connage used in region		
Regional use tonnage (tonnes/vear)		1.2e3	
Fraction of Regional tonnage used locally			0.0005
Annual site tonnage (tonnes/vear)			6.2e-1
Maximum daily site tonnage (kg/day)			1 7e0
Frequency and duration of use			
Continuous release (FD2)			
Emission days (days/year)			
Environmental factors not influenced by risk management			
Local freshwater dilution factor			
Local marine water dilution factor			100

Other given operational conditions affecting environmental exposure				
Release fraction to air from wide dispersive use (regional use only)	0.98			
Pelease fraction to wastewater wide dispersive use	0.01			
	0.01			
Release fraction to soil from wide dispersive use (regional use only)	0.01			
Technical conditions and measures at process level (source) to prev	vent release			
Common practices vary across sites thus conservative process release e	stimates used [TCS1].			
Technical onsite conditions and measures to reduce or limit dischar	rges, air emissions and			
releases to soll	2461			
No wastewater treatment required [TCR6]	KIDJ.			
Treat air emission to provide a typical removal efficiency of (%)	N/A			
Treat onsite wastewater (prior to receiving water discharge) to provide	0			
the required removal efficiency \geq (%)				
If discharging to domestic sewage treatment plant, provide the required	0			
onsite wastewater removal efficiency of \geq (%)				
Organisation measures to prevent/limit release from site	•			
Do not apply industrial sludge to natural soils [OMS2]. Sludge should be reclaimed [OMS3].	incinerated, contained or			
Conditions and measures related to municipal sewage treatment pla	ant			
· · · · ·				
Estimated substance removal from wastewater via domestic sewage	94.1			
Total efficiency of removal from wastewater after onsite and offsite	94 1			
(domestic treatment plant) RMMs (%)				
Maximum allowable site tonnage (M _{Safe}) based on release following total	4.1e2			
wastewater treatment removal (kg/d)				
Assumed domestic sewage treatment plant flow (m ³ /d)	2000			
Conditions and measures related to external treatment of waste for	disposal			
External treatment and disposal of waste should comply with applicable r	egulations [ETW3].			
Conditions and measures related to external recovery of waste				
External recovery and recycling of waste should comply with applicable re	egulations [ERW1].			
Additional information on the basis for the allocation of the indentificontained in PETRORISK file.	ied OCs and RMMs is			
Section 3 Exposure Estimation				
3.1. Health				
See Appendix 2.				
3.2. Environment				
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk				
model [EE2].				
Section 4 Guidance to check compliance with the Exposure Scenar	io			
4.1. Health				
Available hazard data do not support the need for a DNEL to be established for other health effects. G36. Risk Management Measures are based on qualitative risk characterisation. G37.				
4.2. Environment				
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus,				
scaling may be necessary to define appropriate site-specific risk manage	ment measures [DSU1].			
Required removal efficiency for wastewater can be achieved using onsite	/offsite technologies, either			
alone of in combination [DSU2]. Required removal efficiency for all call be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control				
technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries html)				
IDSU41.				

9.6.2. Exposure Estimation

9.6.2.1. Human Health

See Appendix 2.

9.6.2.2. Environment

9.7. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Cleaning Agents – Industrial

9.7.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)			
Title			
	Use Descriptor		
Sector(s) of Use			2
Process Categories		Further information on the PROC codes is contained	3 9 mapping and allocation of 1 in Table 9.1
Environmental Release Cate	egories	4	
Specific Environmental Rele	ase Category	ESVOC SpERC 4.4a.v1	
Processes, tasks, activities	s covered		
Covers the use as a compor pouring/unloading from drum and cleaning activities (inclu- equipment cleaning and mai	nent of cleaning pro ns or containers. Ex ding spraying, brus ntenance.	ducts including transfer fro posures during mixing/dilu hing, dipping, wiping, auto	om storage, uting in the preparatory phase mated and by hand), related
Assessment Method			
See Section 3.			
Section 2 Operational con	ditions and risk m	nanagement measures	
Continue 2.4. Control of way			
Section 2.1 Control of Wor	ker exposure		
Physical form of product	Liquid		
Vapour pressure (kPa)	Liquid vanour pres	ssure <0.5 kPa at STP _0	23
Concentration of substance	Covers percentage	substance in the product	up to 100 % (unless stated
in product	differently) G13		
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated differently) G2		
Other Operational	Assumes use at no	ot more than 20°C above a	ambient temperature, unless
Conditions affecting	stated differently. G15. Assumes a good basic standard of occupational		
exposure	xposure hygiene is implemented G1.		
Specific Risk management	i measures and Op	berating Conditions	
See Appendix 3.			
Section 2.2 Control of env	ironmental expos	ure	
Product characteristics			
Substance is complex UVCE	3 [PrC3]. Predomin	antly hydrophobic [PrC4a]	
Amounts used			
Fraction of EU tonnage used in region 0.1		0.1	
Regional use tonnage (tonnes/year)			1.4e1
Fraction of Regional tonnage used locally 1			1
Annual site tonnage (tonnes/year)			1.4e1
Maximum daily site tonnage (kg/day)			7.1e2
Frequency and duration of use			
Continuous release [FD2].			
Emission days (days/year) 20			
Environmental factors not influenced by risk management			
Local freshwater dilution factor 10			
Local marine water dilution factor			100

Other given operational conditions affecting environmental exposure				
Release fraction to air from process (initial release prior to RMM)	1.0			
Release fraction to wastewater from process (initial release prior to	3.0e-7			
RMM)				
Release fraction to soil from process (initial release prior to RMM)	0			
Technical conditions and measures at process level (source) to prev	vent release			
Common practices vary across sites thus conservative process release e	stimates used [TCS1].			
Technical onsite conditions and measures to reduce or limit dischar	ges, air emissions and			
Rick from environmental exposure is driven by freshwater [TCR1a]				
No wastewater treatment required [TCR6]				
Prevent discharge of undissolved substance to or recover from onsite wa	stewater [TCR14].			
Treat air emission to provide a typical removal efficiency of (%)	70			
Treat onsite wastewater (prior to receiving water discharge) to provide	0			
the required removal efficiency \geq (%)				
If discharging to domestic sewage treatment plant, provide the required	0			
onsite wastewater removal efficiency of \geq (%)				
Organisation measures to prevent/limit release from site				
Do not apply industrial sludge to natural soils [OMS2]. Sludge should be reclaimed [OMS3].	incinerated, contained or			
Conditions and measures related to municipal sewage treatment pla	int			
Estimated substance removal from wastewater via demostic sources	04.4			
treatment (%)	94.1			
Total efficiency of removal from wastewater after onsite and offsite	94.1			
(domestic treatment plant) RMMs (%)				
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/d)	2.5e5			
Assumed domestic sewage treatment plant flow (m ³ /d)	2000			
Conditions and measures related to external treatment of waste for	disnosal			
External treatment and disposal of waste should comply with applicable re-	egulations [ETW3].			
Conditions and measures related to external recovery of waste				
External recovery and recycling of waste should comply with applicable re	egulations [ERW1].			
Additional information on the basis for the allocation of the indentifi	ed OCs and RMMs is			
contained in PETRORISK file.				
Section 3 Exposure Estimation				
3.1. Health				
See Appendix 2.				
3.2. Environment The Hydrocarbon Block Mothod has been used to calculate environmental exposure with the Petrorisk				
model [FF2]				
Section 4 Guidance to check compliance with the Exposure Scenar	io			
4.1. Health				
Available hazard data do not support the need for a DNEL to be established for other health effects.				
G36. Risk Management Measures are based on qualitative risk characterisation. G37.				
4.2. Environment				
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus,				
scaling may be necessary to define appropriate site-specific risk management measures [DSU1].				
alone or in combination [DSI12] Required removal efficiency for air can be achieved using onsite				
technologies, either alone or in combination [DSU3]. Further details on scaling and control				
technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html)				
[DSU4].				

9.7.2. Exposure Estimation

9.7.2.1. Human Health

See Appendix 2.

9.7.2.2. Environment

9.8. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Cleaning Agents – Professional

9.8.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)			
Title			
Use in Cleaning Agents			
Use Descriptor			
Sector(s) of Use		22	
Process Categories		1, 2, 3, 4, 8a, 8b, 10, 11, 13 Further information on the mapping and allocation of PROC codes is contained in Table 9.1	
Environmental Release Cate	egories	8a, 8d	
Specific Environmental Rele	ase Category	ESVOC SpERC 8.4b.v1	
Processes, tasks, activities	s covered		
Covers the use as a compor containers; and exposures d (including spraying, brushing	nent of cleaning pro uring mixing/diluting g, dipping, wiping au	ducts including pouring/ur g in the preparatory phase utomated and by hand).	nloading from drums or and cleaning activities
Assessment Method			
See Section 3.			
Section 2 Operational con	ditions and risk m	nanagement measures	
Section 2.1 Control of way			
Product characteristics	ker exposure		
Physical form of product	Liquid		
Vapour pressure (kPa)	Liquid vanour pres	ssure <0.5 kPa at STP	<u></u>
Concentration of substance	Covers percentage	substance in the product	up to 100 % (upless stated
in product	differently) G13		
Frequency and duration of	Covers daily exposures up to 8 hours (unless stated differently) G2		
use/exposure			
Other Operational	Assumes use at not more than 20°C above ambient temperature, unless		
	stated differentity. GT5. Assumes a good basic standard of occupational		
Exposure Specific Rick Management	Moosures and Or	ented GI.	
Specific Risk Management Measures and Operating Conditions			
See Appendix 3.			
Section 2.2 Control of env	ironmental expos	ure	
Product characteristics			
Substance is complex UVCE	3 [PrC3]. Predomin	antly hydrophobic [PrC4a]].
Amounts used			
Fraction of EU tonnage used in region 0.1		0.1	
Regional use tonnage (tonnes/year)		1.4e1	
Fraction of Regional tonnage used locally			1
Annual site tonnage (tonnes/year)			7.1e-3
Maximum daily site tonnage (kg/day)			1.9e-2
Frequency and duration of use			
Continuous release (FD2)			
Emission days (days/year)			
Environmental factors not influenced by risk management			
Local freshwater dilution factor			
Local marine water dilution factor 10			100
Cotar manine water unution labor offecting environmental surgeons			
Other given operational conditions affecting environmental exposure			

9.8.2. Exposure Estimation

9.8.2.1. Human Health

See Appendix 2.

9.8.2.2. Environment

9.9. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Oil and Gas Field Drilling and Production Operations – Industrial

9.9.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)			
Title			
Use in Oil and Gas Field Drilling and Production Operations			
Use Descriptor			
Sector(s) of Use		3	
Process Categories		1, 2, 3, 4, 8a, 8b	
		Further information on the	e mapping and allocation of
Environmental Balageo Cate	corioo	PRUC codes is contained	1 In Table 9.1
Environmental Release Cale	gones	4 Qualitativo assessment	
		Qualitative assessment	
Oil field well drilling and proc	<u>s coverea</u>	(including drilling mude and	d woll cleaning) including
on neid wen drinning and prod	mulation well hear	d operations, shaker room	activities and related
maintenance.		a operations, shaker reem	
Assessment Method			
See Section 3.			
Section 2 Operational con	ditions and risk m	nanagement measures	
Section 2.1 Control of wor	ker exposure		
Product characteristics			
Physical form of product	Liquid		
Vapour pressure (kPa)	Liquid, vapour pres	ssure <0.5 kPa at STP. O	C3.
Concentration of substance	Covers percentage	e substance in the product	up to 100 % (unless stated
In product	differentiy) G 13	ourse up to 9 hours (uplos	a atotod difforantly) C2
riequency and duration of	Covers daily exposures up to 8 nours (unless stated differently) G2		
Other Operational	Assumes use at not more than 20°C above ambient temperature, unless		
Conditions affecting	stated differently. G15. Assumes a good basic standard of occupational		
exposure	hygiene is impleme	ented G1.	
Specific Risk Management	Measures and Op	perating Conditions	
See Appendix 3.			
Section 2.2 Control of env	ironmental expos	ure	
Product characteristics			
Substance is complex UVCE	3 [PrC3]. Predomin	antly hydrophobic [PrC4a]	
Amounts used			
Fraction of EU tonnage used	in region [A1]		1
Regional use tonnage (tonnes/vear) [A2]			2.26E+04
Fraction of Regional tonnage	e used locally [A3]		Not Applicable
Annual site tonnage (tonnes/year) [A5]			Not Applicable
Maximum daily site tonnage	Maximum daily site tonnage (kg/day) [A4] Not Applicable		
Frequency and duration of use			
Emission days (days/vear) [FD4] Not Applicable			
Environmental factors not influenced by risk management			
l ocal marine water dilution factor [EE2]			
Other given operational co	nditions affecting	environmental exposure	e

Release fraction to air from process (initial release prior to RMM) [OOC4]	Not Applicable		
Release fraction to wastewater from process (initial release prior to RMM) [OOC5]	Not Applicable		
Technical conditions and measures at process level (source) to pre	vent release		
Discharge to aquatic environment is restricted (see Section 4.2).			
Technical onsite conditions and measures to reduce or limit discha	rges, air emissions and		
releases to soil			
Not Applicable			
Treat air emission to provide a typical removal efficiency of (%) [TCR7]	Not Applicable		
Treat onsite wastewater (prior to receiving water discharge) to provide	Not Applicable		
the required removal efficiency \geq (%)			
If discharging to domestic sewage treatment plant, provide the required	Not Applicable		
onsite wastewater removal efficiency of \geq (%)			
Organisation measures to prevent/limit release from site			
Prevent environmental discharge consistent with regulatory requirements	3.		
Conditions and measures related to municipal sewage treatment pla	ant		
Estimated substance removal from wastewater via domestic sewage	Not Applicable		
treatment (%)			
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	Not Applicable		
Maximum allowable site tonnage (M _{Safe}) based on domestic sewage treatment release (kg/d)	Not Applicable		
Assumed domestic sewage treatment plant flow (m ³ /d)	Not Applicable		
Conditions and measures related to external treatment of waste for disposal			
External treatment and disposal of waste should comply with applicable local and/or national			
regulations.			
Conditions and measures related to external recovery of waste			
External recovery and recycling of waste should comply with applicable le	ocal and/or national		
regulations.			
Section 3 Exposure Estimation			
3.1. Health			
See Appendix 2.			
3.2. Environment			
Quantitative exposure and risk assessment not possible due to lack of er	nissions to aquatic		
environment. Qualitative approach used to conclude safe use.			
Section 4 Guidance to check compliance with the Exposure Scenar	io		
4.1. Health			
Available hazard data do not support the need for a DNEL to be established for other health effects.			
G36. Risk Management Measures are based on qualitative risk characterisation. G37.			
4.2. Environment			
Discharge to aquatic environment is restricted by law and industry prohib	vits release.1		
10SPAR Commission 2009. Discharges, Spills and Emissions from Offs	shore Oil and Gas installations		
in 2007, including the assessment of data reported in 2006 and 2007.			

9.9.2. Exposure Estimation

9.9.2.1. Human Health

See Appendix 2.

9.9.2.2. Environment

9.10. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Oil and Gas Field Drilling and Production Operations – Professional

9.10.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)			
Title			
Use in Oil and Gas Field Drilling and Production Operations			
Use Descriptor			
Sector(s) of Use		22	
Process Categories		1, 2, 3, 4, 8a, 8b	
		Further information on the	e mapping and allocation of
Frankraumantal Dalagaa Cata		PROC codes is contained	a in Table 9.1
Environmental Release Cate	egories	8D	
Specific Environmental Rele	ase Category	Qualitative assessment	
Processes, tasks, activities	<u>s covered</u>		including material transform
On heid wen drining operation	ns (including drilling d operations, shake	g muds and well cleaning)	ad maintenance
Assessment Method		er room activities and relat	ed maintenance.
Assessment wethod			
See Section 3. Operational con	ditions and rick m	anagement measures	
Section 2 Operational con	iuitions and tisk ii	ianayement measures	
Section 2.1 Control of wor	rker exposure		
Product characteristics			
Physical form of product	Liguid		
Vapour pressure (kPa)	Liquid, vapour pres	ssure <0.5 kPa at STP. O	C3.
Concentration of substance	Covers percentage	e substance in the product	up to 100 % (unless stated
in product	differently) G13		
Frequency and duration of	Covers daily exposures up to 8 hours (unless stated differently) G2		
use/exposure			
Other Operational	Assumes use at not more than 20°C above ambient temperature, unless		
Conditions affecting	stated differently. G15. Assumes a good basic standard of occupational		
Specific Pick Management	Mossures and Or		
Specific Risk Management	i measures and Op	berating conditions	
See Appendix 3.			
Section 2.2 Control of env	vironmental expos	ure	
Product characteristics			
Substance is complex UVCE	3 [PrC3]. Predomin	antly hydrophobic [PrC4a]	
Amounts used			
Fraction of EU tonnage used in region [A1]		1	
Regional use tonnage (tonnes/vear) [A2]			2.26E+04
Fraction of Regional tonnage used locally [A3]		Not Applicable	
Annual site tonnage (tonnes/year) [A5] Not Applicable			Not Applicable
Maximum daily site tonnage (kg/day) [A4]		Not Applicable	
Frequency and duration of use			
Emission days (days/year) [ED4]			
Environmental factors not influenced by risk management			
Local marine water dilution factor [FE2]			
Other given operational ac	Other given operational conditions affecting environmental exposure		
oner gren operational conditions ancoung environmental exposure			

Release fraction to air from process (initial release prior to RMM) [OOC4]	Not Applicable			
Release fraction to wastewater from process (initial release prior to RMM) [OOC5]	Not Applicable			
Technical conditions and measures at process level (source) to pre	vent release			
Discharge to aquatic environment is restricted (see Section 4.2).				
Technical onsite conditions and measures to reduce or limit discha	rges, air emissions and			
releases to soil				
Not Applicable				
Treat air emission to provide a typical removal efficiency of (%) [TCR7]	Not Applicable			
Treat onsite wastewater (prior to receiving water discharge) to provide	Not Applicable			
the required removal efficiency \geq (%)				
If discharging to domestic sewage treatment plant, provide the required	Not Applicable			
onsite wastewater removal efficiency of \geq (%)				
Organisation measures to prevent/limit release from site				
Prevent environmental discharge consistent with regulatory requirements	S.			
Conditions and measures related to municipal sewage treatment pla	ant			
Estimated substance removal from wastewater via domestic sewage treatment (%)	Not Applicable			
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	Not Applicable			
Maximum allowable site tonnage (M _{Safe}) based on domestic sewage treatment release (kg/d)	Not Applicable			
Assumed domestic sewage treatment plant flow (m ³ /d)	Not Applicable			
Conditions and measures related to external treatment of waste for disposal				
External treatment and disposal of waste should comply with applicable I regulations.	ocal and/or national			
Conditions and measures related to external recovery of waste				
External recovery and recycling of waste should comply with applicable local and/or national				
Section 3 Exposure Estimation				
3.1. Health				
See Appendix 2.				
3.2. Environment				
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk				
model [EE2].	•			
Section 4 Guidance to check compliance with the Exposure Scenar	io			
4.1. Health				
Available hazard data do not support the need for a DNEL to be established for other health effects.				
G36. Risk Management Measures are based on qualitative risk characterisation. G37.				
4.2. Environment				
Discharge to aquatic environment is restricted by law and industry prohibits release.1 10SPAR Commission 2009. Discharges, Spills and Emissions from Offshore Oil and Gas Installations				
in 2007, including the assessment of data reported in 2006 and 2007.				

9.10.2. Exposure Estimation

9.10.2.1. Human Health See Appendix 2.

9.10.2.2. Environment

9.11. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Lubricants – Industrial

9.11.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)			
Title			
Lubricants			
Use Descriptor			
Sector(s) of Use		3	
Process Categories		1, 2, 3, 4, 7, 8a, 8b, 9, 10	, 13, 17, 18
		Further information on the	e mapping and allocation of
		PROC codes is contained	d in Table 9.1
Environmental Release Cate	egories	4,7	
Specific Environmental Rele	ase Category	ESVOC SpERC 4.6a.v1	
Processes, tasks, activities	s covered		······
Covers the use of formulated	d lubricants in close	ed and open systems inclu	ding material transfers,
operation of machinery/engine	nes and similar artic	cles, reworking on reject a	rticles, equipment
maintenance and disposal of	f wastes.		
Assessment Method			
See Section 3.			
Section 2 Operational con	ditions and risk m	nanagement measures	
Section 2.4 Control of way			
Section 2.1 Control of Wor	rker exposure		
Product characteristics	Liquid		
Vapour prossuro (kPa)	Liquid vapour prog	source <0.5 kPa at STP 0	\sim
Concentration of substance	Liquid, vapour pressure < 0.5 kPa at STP. 003.		
in product	differently) G13		
Frequency and duration of	Covers daily exposures up to 8 hours (unless stated differently) G2		
use/exposure		, , ,	5,
Other Operational	Assumes use at not more than 20°C above ambient temperature, unless		
Conditions affecting	stated differently. G15. Assumes a good basic standard of occupational		
exposure	e hygiene is implemented G1.		
Specific Risk Management Measures and Operating Conditions			
See Appendix 3.			
Section 2.2 Control of env	rironmental expos	ure	
Product characteristics			
Substance is complex UVCE	B [PrC3]. Predomin	antly hydrophobic [PrC4a]].
Amounts used			
Fraction of EU tonnage used in region 0.1			0.1
Regional use tonnage (tonnes/year)			3.8e3
Fraction of Regional tonnage used locally			0.026
Annual site tonnage (tonnes/year)			1.0e2
Maximum daily site tonnage (kg/day)			5.0e3
Frequency and duration of use			
Continuous release [FD2]			
Emission days (days/year)			
Environmental factors not influenced by risk management			
Local freshwater dilution fact	tor	-	10

Local marine water dilution factor	100
Other given operational conditions affecting environmental exposur	e
Release fraction to air from process (initial release prior to RMM)	5.0e-3
Release fraction to wastewater from process (initial release prior to RMM)	3.0e-6
Release fraction to soil from process (initial release prior to RMM)	0.001
Technical conditions and measures at process level (source) to pre-	vent release
Common practices vary across sites thus conservative process release estimates used [TCS1]	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and	
releases to soil	
Risk from environmental exposure is driven by freshwater [TCR1a]. No wastewater treatment required [TCR6].	
Prevent discharge of undissolved substance to or recover from onsite wa	stewater [TCR14].
Treat air emission to provide a typical removal efficiency of (%)	70
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency \geq (%)	0
In discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $> (\%)$	0
Organisation measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or	
reclaimed [OMS3].	
Conditions and measures related to municipal sewage treatment pla	ant
Estimated substance removal from wastewater via domestic sewage treatment (%)	94.1
Total efficiency of removal from wastewater after onsite and offsite	94.1
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (M_{Safe}) based on release following total	1.3e6
Assumed domestic sewage treatment plant flow (m ³ /d)	2000
Conditions and measures related to external treatment of waste for	disposal
External treatment and disposal of waste should comply with applicable regulations [FTW3]	
Conditions and measures related to external resource of warts	
External recovery and recycling of waste should comply with applicable regulations [EDW1]	
Additional information on the basis for the allocation of the indentified OCs and RMMs is	
contained in PETRORISK file	
Section 3 Exposure Estimation	
3.1. Health	
See Appendix 2.	
3.2. Environment	
The Hydrocarbon Block Method has been used to calculate environment	al exposure with the Petrorisk
model [EE2].	
Section 4 Guidance to check compliance with the Exposure Scenar	io
4.1. Health	
Available hazard data do not support the need for a DNEL to be establish	ned for other health effects.
G36. Risk Management Measures are based on qualitative risk characterisation. G37.	
4.2. Environment	
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus,	
scaling may be necessary to define appropriate site-specific risk management measures [DSU1].	
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either	
alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite	
technologies, either alone or in combination [USU3]. Further details on scaling and control	
recrinologies are provided in SpERC factsheet (<u>http://cefic.org/en/reach-f</u>	or-industries-libraries.html)

9.11.2. Exposure Estimation

9.11.2.1. Human Health

See Appendix 2.

9.11.2.2. Environment
9.12. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Lubricants – Professional: Low Environmental Release

9.12.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)			
Title			
Lubricants – Professional: Lo	ow Environmental F	Release	
Use Descriptor			
Sector(s) of Use		22	
Process Categories		1, 2, 3, 4, 8a, 8b, 9, 10, 11, 13, 17, 18, 20	
		Further information on the	e mapping and allocation of
		PROC codes is contained	l in Table 9.1
Environmental Release Cate	gories	9a, 9b	
Specific Environmental Rele	ase Category	ESVOC SPERC 9.60.VT	
Processes, tasks, activitie	s covered	· · · · · · · · · · · · · · · · · · ·	
Covers the use of formulated	lubricants in close	ed and open systems includ	ding material transfers,
operation of engines and sin	hilar articles, rework	(ing on reject articles, equi	pment maintenance and
Assessment Method			
Assessment method			
Section 2 Operational con	ditions and risk m	nanagement measures	
Section 2 Operational con	ultions and risk m	lallayement measures	
Section 2.1 Control of wor	ker exposure		
Product characteristics			
Physical form of product	Liquid		
Vapour pressure (kPa)	Liquid, vapour pres	ssure <0.5 kPa at STP. OC	03.
Concentration of substance	Covers percentage substance in the product up to 100 % (unless stated		
in product	differently) G13		
Frequency and duration of	Covers daily exposures up to 8 hours (unless stated differently) G2		
use/exposure			
Other Operational	Assumes use at no	ot more than 20°C above a	imbient temperature, unless
Conditions affecting	stated differently.	G15. Assumes a good bas	ic standard of occupational
exposure Invglene is Implemented G1.			
Specific Risk Management Measures and Operating Conditions			
See Appendix 3.			
Section 2.2. Control of environmental exposure			
Product characteristics			
FIGUUCE Characteristics			
Fraction of EU tonnage used in region			0.1
Regional use tonnage (tonnes/year)			3.5e1
Fraction of Regional tonnage used locally			0.0005
Annual site tonnage (tonnes/year)			1.8e-2
Maximum daily site tonnage (kg/day)			4.8e-2
Frequency and duration of use			
Continuous release [FD2].			
Emission days (days/year) 365			
Environmental factors not influenced by risk management			
Local freshwater dilution factor 10			
Local marine water dilution factor 100			
Other given operational conditions affecting environmental exposure			

Release fraction to air from wide dispersive use (regional use only)	0.01			
Release fraction to wastewater wide dispersive use 0.01				
Release fraction to soil from wide dispersive use (regional use only) 0.01				
Technical conditions and measures at process level (source) to prev	vent release			
Common practices vary across sites thus conservative process release as	stimates used [TCS1]			
Technical onsite conditions and measures to reduce or limit dischar	des air emissions and			
releases to soil	ges, an emissions and			
Risk from environmental exposure is driven by freshwater sediment [TCR	1b].			
No wastewater treatment required [TCR6].	-			
Treat air emission to provide a typical removal efficiency of (%)	N/A			
Treat onsite wastewater (prior to receiving water discharge) to provide	0			
the required removal efficiency \geq (%)				
If discharging to domestic sewage treatment plant, provide the required	0			
onsite wastewater removal efficiency of \geq (%)				
Organisation measures to prevent/limit release from site				
Do not apply industrial sludge to natural soils [OMS2]. Sludge should be i	incinerated, contained or			
reclaimed [OMS3].				
Conditions and measures related to municipal sewage treatment plan	nt			
Estimated substance removal from wastewater via domestic sewage	94.1			
treatment (%)	04.4			
I otal efficiency of removal from wastewater after onsite and offsite	94.1			
(domestic treatment plant) Rivivis (%)	1 7-1			
Maximum allowable site tonnage (M _{Safe}) based on release following total	1.701			
wastewater treatment removal (kg/u) Assumed demostic sources treatment plant flow (m^3/d)	2000			
	2000			
External treatment and disposal of waste should comply with applicable regulations [FTW3]				
External treatment and disposal of waste should comply with applicable regulations [E1W3].				
Conditions and measures related to external recovery of waste				
External recovery and recycling of waste should comply with applicable regulations [ERW1].				
contained in PETRORISK file.				
Section 3 Exposure Estimation				
3.1. Health				
See Appendix 2.				
3.2. Environment				
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk				
model [EE2].				
Section 4 Guidance to check compliance with the Exposure Scenari	0			
4.1. Health				
Available hazard data do not support the need for a DNEL to be established for other health effects.				
G36. Risk Management Measures are based on qualitative risk characterisation. G37.				
4.2. Environment				
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus,				
scaling may be necessary to define appropriate site-specific risk management measures [DSU1].				
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either				
alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite				
technologies, either alone or in combination [USU3]. Further details on scaling and control				
to always a size and many ideal in OnEDO for the state of the the size of a size to the size of the si	in the device of the second second second second			
technologies are provided in SpERC factsheet (<u>http://cefic.org/en/reach-fo</u>	or-industries-libraries.html)			

9.12.2. Exposure Estimation

9.12.2.1. Human Health

See Appendix 2.

9.12.2.2. Environment

9.13. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Lubricants – Professional: High Environmental Release

9.13.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)			
Title			
Lubricants – Professional: High Environmental Release			
Use Descriptor			
Sector(s) of Use 22			
Process Categories		1, 2, 3, 4, 8a, 8b, 9, 10, 1 Further information on the PROC codes is contained	1, 13, 17, 18, 20 e mapping and allocation of d in Table 9.1
Environmental Release Categories 8a, 8d			
Specific Environmental Release Category ESVOC SpERC 8.6c.v1			
Processes, tasks, activities	s covered		
Covers the use of formulated lubricants in closed and open systems including material transfers, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil.			
Assessment Method			
See Section 3.			
Section 2 Operational con	ditions and risk m	nanagement measures	
Section 2.1 Control of wor	ker exposure		
Product characteristics	المستط		
Physical form of product			
Concentration of substance	Liquid, vapour pressure < 0.5 kPa at STP. 003.		
in product	differently) G13		
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated differently) G2		
Other Operational Conditions affecting exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently. G15. Assumes a good basic standard of occupational hygiene is implemented G1		
Specific Risk Management Measures and Operating Conditions			
See Appendix 3.			
Section 2.2 Control of environmental exposure			
Product characteristics			
Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].			
Amounts used			
Fraction of EU tonnage used in region 0.1			0.1
Regional use tonnage (tonnes/year)			3.5e1
Fraction of Regional tonnage used locally			0.0005
Annual site tonnage (tonnes/year)			1.8e-2
Maximum daily site tonnage (kg/dav)			4.8e-2
Frequency and duration of use			
Continuous release [FD2].			
Emission days (days/year) 365			
Environmental factors not influenced by risk management			
Local freshwater dilution factor 10			

Local marine water dilution factor	100			
Other given operational conditions affecting environmental exposur	e			
Release fraction to air from wide dispersive use (regional use only)	1.5e-1			
Release fraction to wastewater wide dispersive use	0.05			
Release fraction to soil from wide dispersive use (regional use only)	0.05			
Technical conditions and measures at process level (source) to prev	vent release			
Common practices vary across sites thus conservative process release e	stimates used [TCS1].			
Technical onsite conditions and measures to reduce or limit dischar releases to soil	rges, air emissions and			
Risk from environmental exposure is driven by freshwater [TCR1a].				
No wastewater treatment required [TCR6].				
Treat air emission to provide a typical removal efficiency of (%)	N/A			
Treat onsite wastewater (prior to receiving water discharge) to provide	0			
the required removal efficiency \geq (%)				
If discharging to domestic sewage treatment plant, provide the required	0			
onsite wastewater removal efficiency of \geq (%)				
Organisation measures to prevent/limit release from site				
Do not apply industrial sludge to natural soils [OMS2]. Sludge should be reclaimed [OMS3].	incinerated, contained or			
Conditions and measures related to municipal sewage treatment pla	Int			
Estimated substance removal from wastewater via domestic sewage treatment (%)	94.1			
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94.1			
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/d)	1.6e1			
Assumed domestic sewage treatment plant flow (m ³ /d)	2000			
Conditions and measures related to external treatment of waste for	disposal			
External treatment and disposal of waste should comply with applicable regulations [ETW3].				
Conditions and measures related to external recovery of waste				
External recovery and recycling of waste should comply with applicable regulations (EDW/1)				
Additional information on the basis for the allocation of the indentified OCs and RMMs is				
contained in PETRORISK file.				
Section 3 Exposure Estimation				
3.1. Health				
See Appendix 2.				
3.2. Environment				
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk				
model [EE2].				
Section 4 Guidance to check compliance with the Exposure Scenar	io			
4.1. Health				
Available hazard data do not support the need for a DNEL to be established for other health effects.				
G36. Risk Management Measures are based on qualitative risk characterisation. G37.				
4.2. Environment				
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus,				
scaling may be necessary to define appropriate site-specific risk management measures [DSU1].				
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either				
technologies, either alone or in combination [DSU3]. Further details on scaling and control				
technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries html)				
[DSU4].				

9.13.2. Exposure Estimation

9.13.2.1. Human Health

See Appendix 2.

9.13.2.2. Environment

9.14. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Metal Working Fluids/Rolling Oils – Industrial

9.14.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)			
Title			
Use in Metal Working Fluids/Rolling Oils			
Use Descriptor			
Sector(s) of Use		3	
Process Categories		1, 2, 3, 4, 5, 7, 8a, 8b, 9, Further information on the PROC codes is contained	10, 13, 17 e mapping and allocation of d in Table 9.1
Environmental Release Cate	egories	4	
Specific Environmental Release Category ESVOC SpERC 4.7a.v1			
Processes, tasks, activitie	s covered		
Covers the use in formulated MWFs/rolling oils including transfer operations, rolling and annealing activities, cutting/machining activities, automated and manual application of corrosion protections (including brushing, dipping and spraying), equipment maintenance, draining and disposal of waste oils.			
Assessment Method			
See Section 3.			
Section 2 Operational con	altions and risk m	nanagement measures	
Section 2.1 Control of wor	ker exposure		
Product characteristics			
Physical form of product	Liquid		
Vapour pressure (kPa)	Liquid, vapour pres	ssure <0.5 kPa at STP. O	C3.
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) G13		
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated differently) G2		
Other Operational Conditions affecting exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently. G15. Assumes a good basic standard of occupational hygiene is implemented G1.		
Specific Risk Management Measures and Operating Conditions			
See Appendix 3.			
Section 2.2 Control of env	vironmental expos	ure	
Product characteristics			
Substance is complex UVCE	3 [PrC3]. Predomin	antly hydrophobic [PrC4a]	
Amounts used			
Fraction of EU tonnage used in region			
Regional use tonnage (tonnes/year)			6.7e3
Fraction of Regional tonnage used locally			0.015
Annual site tonnage (tonnes/vear)			1.0e2
Maximum daily site tonnage (kg/day)			5.0e3
Frequency and duration of	Frequency and duration of use		
Continuous release [ED2]			
Emission days (days/year)			
Environmental factors not influenced by risk management			
Local freshwater dilution factor			
_ocal marine water dilution factor 100			100

Other given operational conditions affecting environmental exposure					
Release fraction to air from process (initial release prior to RMM)	0.02				
Release fraction to wastewater from process (initial release prior to RMM)	3.0e-6				
Release fraction to soil from process (initial release prior to RMM)	0				
Technical conditions and measures at process level (source) to prev	/ent release				
Common practices vary across sites thus conservative process release e	stimates used ITCS11.				
Technical onsite conditions and measures to reduce or limit dischar	ges, air emissions and				
releases to soil					
Risk from environmental exposure is driven by freshwater sediment [TCR	.1b].				
No wastewater treatment required [TCR6].					
Prevent discharge of undissolved substance to or recover from onsite wa	stewater [TCR14].				
Treat air emission to provide a typical removal efficiency of (%)	70				
Treat onsite wastewater (prior to receiving water discharge) to provide	0				
the required removal efficiency \geq (%)	-				
If discharging to domestic sewage treatment plant, provide the required	0				
onsite wastewater removal efficiency of \geq (%)					
Organisation measures to prevent/limit release from site					
Do not apply industrial sludge to natural soils [OMS2]. Sludge should be reclaimed [OMS3].	incinerated, contained or				
Conditions and measures related to municipal sewage treatment pla	int				
	04.4				
Estimated substance removal from wastewater via domestic sewage treatment (%)	94.1				
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94.1				
Maximum allowable site tonnage (M _{Safe}) based on release following total wastewater treatment removal (kg/d)	1.3e6				
Assumed domestic sewage treatment plant flow (m ³ /d)	2000				
Conditions and measures related to external treatment of waste for disposal					
External treatment and disposal of waste should comply with applicable regulations [ETW3].					
Conditions and measures related to external recovery of waste					
External recovery and recycling of waste should comply with applicable regulations [ERW1]					
Additional information on the basis for the allocation of the indentified OCs and RMMs is					
contained in PETRORISK file.					
Section 3 Exposure Estimation					
3.1. Health					
See Appendix 2.					
3.2. Environment					
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk					
model [EE2].					
Section 4 Guidance to check compliance with the Exposure Scenario					
4.1. Health					
Available hazard data do not support the need for a DNEL to be established for other health effects.					
4.2 Environment					
4.2. Environment					
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus,					
scaling may be necessary to define appropriate site-specific fisk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either					
alone or in combination IDSU21 Required removal efficiency for air can be achieved using onsite					
technologies, either alone or in combination [DSU3]. Further details on scaling and control					
technologies, entre alone of in combination [DS03]. Further details of scaling and control technologies are provided in SpERC factsheet (<u>http://cefic.org/en/reach-for-industries-libraries.html</u>) [DSU4].					

9.14.2. Exposure Estimation

9.14.2.1. Human Health

See Appendix 2.

9.14.2.2. Environment

9.15. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Metal Working Fluids/Rolling Oils – Professional

9.15.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)				
Title				
Use in Metal working fluids / rolling oils – Professional				
Use Descriptor				
Sector(s) of Use		22		
Process Categories		1, 2, 3, 5, 8a, 8b, 9, 10, 11, 13, 17 Further information on the mapping and allocation of PROC codes is contained in Table 9.1		
Environmental Release Cate	gories	8a, 8d		
Specific Environmental Rele	ase Category	ESVOC SpERC 8.7c.v1		
Processes, tasks, activities	Processes, tasks, activities covered			
Covers the use in formulated MWFs including transfer operations, open and contained cutting/machining activities, automated and manual application of corrosion protections, draining and working on contaminated/ reject articles, and disposal of waste oils				
Assessment Method	,	•		
See Section 3.				
Section 2 Operational con	ditions and risk m	nanagement measures		
Section 2.1 Control of wor	ker exposure			
Product characteristics	-			
Physical form of product	Liquid			
Vapour pressure (kPa)	Liquid, vapour pressure <0.5 kPa at STP. OC3.			
Concentration of substance	Covers percentage substance in the product up to 100 % (unless stated			
in product	differently) G13			
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated differently) G2			
Other Operational	Assumes use at no	ot more than 20°C above a	ambient temperature, unless	
Conditions affecting	stated differently.	G15. Assumes a good bas	sic standard of occupational	
exposure [hygiene is implemented G1.				
Specific Risk Management Measures and Operating Conditions				
See Appendix 3.				
Section 2.2 Control of environmental exposure				
Product characteristics				
Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].				
Amounts used				
Fraction of EU tonnage used in region			0.1	
Regional use tonnage (tonnes/vear)			5.1e2	
Fraction of Regional tonnage used locally			0.0005	
Annual site tonnage (tonnes/vear)			2.6e-1	
Maximum daily site tonnage (kg/day)			7.0e-1	
Frequency and duration of use				
Continuous release [ED2]				
Emission days (days/year)				
Environmental factors not influenced by risk management				
Local freebyeter dilution factor				
Local marine water dilution for	actor		100	
Cotar manine water unution ration offersting environmental evinesure				
Other given operational conditions affecting environmental exposure				

Release fraction to air from wide dispersive use (regional use only) 1.5e-1 Release fraction to wastewater wide dispersive use 0.05 Release fraction to soil from wide dispersive use (regional use only) 0.05 Technical conditions and measures at process level (source) to prevent release 0.05 Common practices vary across sites thus conservative process release estimates used [TCS1]. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater [TCR1a]. No wastewater treatment required [TCR6]. No wastewater treatment required [TCR6]. N/A Treat air emission to provide a typical removal efficiency of (%) N/A Treat onsite wastewater (prior to receiving water discharge) to provide 0 the required removal efficiency ≥ (%) 0 f discharging to domestic sewage treatment plant, provide the required 0 onsite wastewater removal efficiency of ≥ (%) 0 Organisation measures to prevent/limit release from site 0 Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3]. 94.1 Conditions and measures related to municipal sewage treatment plant 94.1 etatment (%) 94.1 Maximum all				
Release fraction to wastewater wide dispersive use 0.05 Release fraction to soil from wide dispersive use (regional use only) 0.05 Technical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process release estimates used [TCS1]. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater [TCR1a]. No wastewater treatment required [TCR6]. Treat air emission to provide a typical removal efficiency of (%) N/A Treat onsite wastewater (prior to receiving water discharge) to provide 0 the required removal efficiency of ≥ (%) 0 0 cond apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3]. Conditions and measures related to municipal sewage treatment plant Conditions and measures related to musicipal sewage freatment plant Cotal efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (Msafe) based on release following total vastewater treatment removal (kg/d) 1.3e2 Assumed domestic sewage treatment plant flow (m³/d) 2000 Conditions and measures related to externa				
Release fraction to soil from wide dispersive use (regional use only) 0.05 Technical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process release estimates used [TCS1]. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater [TCR1a]. No wastewater treatment required [TCR6]. Treat air emission to provide a typical removal efficiency of (%) N/A Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency ≥ (%) If discharging to domestic sewage treatment plant, provide the required Ononite wastewater removal efficiency of ≥ (%) Organisation measures to prevent/limit release from site Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3]. Conditions and measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage 94.1 domestic treatment plant) RMMs (%) 1.3e2 Vaxinum allowable site tonnage (Msare) based on release following total allowable waste water treatment plant flow (m³/d) 2000 Conditions and measures related to external treatment of waste for disposal 1.3e2				
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External treatment and disposal of waste should comply with applicable regulations [ETW3]. Conditions and measures related to external recovery of waste				
Conditions and measures related to external recovery of waste				
Conditions and measures related to external recovery of waste				
External recovery and recycling of waste should comply with applicable regulations [ERW1].				
Additional information on the basis for the allocation of the indentified OCs and RMMs is				
Contained in PETRORISK file.				
Section 3 Exposure Estimation				
3 2 Environment				
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk				
model [EE2].				
Section 4 Guidance to check compliance with the Exposure Scenario				
4.1. Health				
Available hazard data do not support the need for a DNEL to be established for other health effects.				
G36. Risk Management Measures are based on qualitative risk characterisation. G37.				
4.2. Environment				
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus,				
scaling may be necessary to define appropriate site-specific risk management measures [DSU1].				
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either				
alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite				
technologies, either alone or in combination [DSU3]. Further details on scaling and control				
ecnnologies are provided in SpERC factsheet (<u>http://cefic.org/en/reach-for-industries-libraries.html</u>) [DSU4].				

9.15.2. Exposure Estimation

9.15.2.1. Human Health

See Appendix 2.

9.15.2.2. Environment

9.16. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) as Release Agents or Binders – Industrial

9.16.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)				
Title				
Use as Release Agents or B	inders			
Use Descriptor				
Sector(s) of Use		3		
Process Categories		1, 2, 3, 4, 6, 7, 8b, 10, 13 Further information on the PROC codes is contained	, 14 9 mapping and allocation of 1 in Table 9.1	
Environmental Release Cate	egories	4		
Specific Environmental Rele	ase Category	ESVOC SpERC 4.10a.v1		
Processes, tasks, activitie	s covered	·		
Covers the use as binders and release agents including material transfers, mixing, application (including spraying and brushing), mould forming and casting, and handling of waste.				
See Section 3.				
Section 2 Operational con	ditions and risk m	nanagement measures		
Section 2.1 Control of wor	rker exposure			
Product characteristics				
Physical form of product	Liquid			
Vapour pressure (kPa)	Liquid, vapour pres	ssure <0.5 kPa at STP. <mark>O(</mark>	C3.	
Concentration of substance	Covers percentage	e substance in the product	up to 100 % (unless stated	
in product	differently) G13			
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated differently) G2			
Other Operational Conditions affecting exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently. G15. Assumes a good basic standard of occupational bygiene is implemented G1			
Specific Risk Management Measures and Operating Conditions				
See Appendix 3.				
Section 2.2 Control of environmental exposure				
Product characteristics				
Substance is complex UVCE	3 [PrC3]. Predomin	antly hydrophobic [PrC4a]	l.	
Amounts used				
Fraction of ELI tonnage used	t in region		0 1	
Praction of EO tornage (tennes/year)			2 2 2 2	
Regional use tonnage (tonnes/year)				
Fraction of Regional tonnage used locally			0.77	
Annual site tonnage (tonnes/year)			2.5e3	
Maximum daily site tonnage (kg/day) 2.5e4			2.5e4	
Frequency and duration of use				
Continuous release [FD2].				
Emission days (days/year)	Emission days (days/year) 100			
Environmental factors not influenced by risk management				
Local freshwater dilution factor 10				
Local marine water dilution factor 100				
Other given operational conditions affecting environmental exposure				
		••		

Release fraction to air from process (initial release prior to RMM)	1.0				
Release fraction to wastewater from process (initial release prior to	3.0e-7				
RMM)					
Release fraction to soil from process (initial release prior to RMM)	0				
Technical conditions and measures at process level (source) to prevent release					
Common practices vary across sites thus conservative process release e	stimates used [TCS1].				
Technical onsite conditions and measures to reduce or limit dischar	ges, air emissions and				
releases to soil					
Risk from environmental exposure is driven by humans via indirect expos	ure (primarily inhalation)				
[TCR1k]. No wastewater treatment required [TCR6].					
Prevent discharge of undissolved substance to or recover from onsite was	stewater [TCR14].				
I reat air emission to provide a typical removal efficiency of (%)	80				
I reat onsite wastewater (prior to receiving water discharge) to provide	0				
the required removal efficiency \geq (%)	0				
It discharging to domestic sewage treatment plant, provide the required	0				
onsite wastewater removal efficiency of \geq (%)	l				
Urganisation measures to prevent/limit release from site	incincrated contained on				
reclaimed IOMS31	incinerated, contained or				
Conditions and measures related to municipal sowage treatment pla	unt				
iounations and measures related to municipal sewage treatment pla					
Estimated substance removal from wastewater via domestic sewage	94.1				
treatment (%)	01.1				
Total efficiency of removal from wastewater after onsite and offsite	94.1				
(domestic treatment plant) RMMs (%)					
Maximum allowable site tonnage (M _{Safe}) based on release following total	2.9e5				
wastewater treatment removal (kg/d)					
Assumed domestic sewage treatment plant flow (m ³ /d)	2000				
Conditions and measures related to external treatment of waste for disposal					
External treatment and disposal of waste should comply with applicable regulations [ETW3].					
Conditions and measures related to external recovery of waste					
External recovery and recycling of waste should comply with applicable regulations [ERW1].					
Additional information on the basis for the allocation of the indentified OCs and RMMs is					
contained in PETRORISK file.					
Section 3 Exposure Estimation					
3.1. Health					
See Appendix 2.					
3.2. Environment					
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk					
Model [EE2].					
Section 4 Guidance to check compliance with the Exposure Scenario					
4.1. Health Available beyond data do not assess the pool for a DNEL to be actually by	ad for other bealth affects				
Available nazaru data do not support the need for a DNEL to be established for other health effects.					
4.2 Environment					
4.2. Environment					
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus,					
scaling may be necessary to define appropriate site-specific risk management measures [DSU1].					
alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite					
technologies, either alone or in combination IDSU31. Further details on scaling and control					
technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html)					
[DSU4].					
•					

9.16.2. Exposure Estimation

9.16.2.1. Human Health

See Appendix 2.

9.16.2.2. Environment

9.17. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Release Agents or Binders – Professional

9.17.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)			
Title			
Use as Release Agents or B	inders		
Use Descriptor			
Sector(s) of Use		22	
Process Categories		1, 2, 3, 4, 6, 8a, 8b, 10, 11, 14 Further information on the mapping and allocation of PROC codes is contained in Table 9.1	
Environmental Release Cate	egories	8a, 8d	
Specific Environmental Rele	ase Category	ESVOC SpERC 8.10b.v1	
Processes, tasks, activitie	s covered		
Covers the use as binders a spraying, brushing, and hand	nd release agents i dling of waste.	ncluding material transfers	, mixing, application by
Assessment method			
See Section 3.			
Section 2 Operational con	ditions and risk m	nanagement measures	
O stine 0.4. O stated of way	•		
Section 2.1 Control of wol	rker exposure		
Product characteristics	Liquid		
	Liquia		20
Vapour pressure (KPa)	Liquid, vapour pres	SSURE < 0.5 KPa at 51 P. Ot	$\frac{1}{23}$.
	differently) G13		
Frequency and duration of	Covers daily exposures up to 8 hours (upless stated differently) G2		
use/exposure			
Other Operational Conditions affecting	Assumes use at not more than 20°C above ambient temperature, unless stated differently. G15. Assumes a good basic standard of occupational		
exposure	hygiene is implemented G1.		
Specific Risk Management Measures and Operating Conditions			
See Appendix 3.			
Section 2.2 Control of environmental exposure			
Product characteristics			
Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].			
Amounts used			
Fraction of EU tonnage used	1 in region		0.1
Regional use tonnage (tonne	<u>ee/vear)</u>		4 902
Fraction of Pagional tangage used lessible			4.962
Annual Sile Ionnage (Ionnes/year)			
Maximum daily site tonnage (kg/day) [6.7e-1			
Frequency and duration of use			
Continuous release [FD2].			
Emission days (days/year) 365			
Environmental factors not influenced by risk management			
Local freshwater dilution factor 10			
Local marine water dilution factor 100			
Other given operational conditions affecting environmental exposure			

Release fraction to air from wide dispersive use (regional use only)	0.95				
Release fraction to wastewater wide dispersive use	0.025				
Release fraction to soil from wide dispersive use (regional use only)	0.025				
Technical conditions and measures at process level (source) to prev	vent release				
Common practices vary across sites thus conservative process release estimates the second sec	stimates used [TCS1].				
Technical onsite conditions and measures to reduce or limit dischar	ges, air emissions and				
releases to soil					
Risk from environmental exposure is driven by freshwater sediment [TCR	1b].				
No wastewater treatment required [TCR6].					
I reat air emission to provide a typical removal efficiency of (%)	N/A				
I reat onsite wastewater (prior to receiving water discharge) to provide	0				
the required removal efficiency \geq (%)	2				
If discharging to domestic sewage treatment plant, provide the required	0				
onsite wastewater removal efficiency of \geq (%)					
Organisation measures to prevent/limit release from site	incinerated contained or				
reclaimed [OMS3].	incinerated, contained of				
Conditions and measures related to municipal sewage treatment pla	nt				
Estimated substance removal from wastewater via domestic sewage treatment (%)	94.1				
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94.1				
Maximum allowable site tonnage (M _{Safe}) based on release following total	1.6e2				
wastewater treatment removal (kg/d)					
Assumed domestic sewage treatment plant flow (m ³ /d)	2000				
Conditions and measures related to external treatment of waste for disposal					
External treatment and disposal of waste should comply with applicable regulations [ETW3].					
Conditions and measures related to external recovery of waste					
External recovery and recycling of waste should comply with applicable regulations [ERW1].					
Additional information on the basis for the allocation of the indentified OCs and RMMs is contained in PETRORISK file.					
Section 2 Expedius Estimation					
Section 3 Exposure Estimation					
See Annendix 2					
3 2 Environment					
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk					
model [EE2].					
Section 4 Guidance to check compliance with the Exposure Scenario					
4.1. Health					
Available hazard data do not support the need for a DNEL to be established for other health effects.					
G36. Risk Management Measures are based on qualitative risk characterisation. G37.					
4.2. Environment					
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus,					
scaling may be necessary to define appropriate site-specific risk management measures [DSU1].					
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either					
alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite					
technologies, either alone of in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factshoot (http://cofig.org/op/reach_for_industriag_librariag_html)					
technologies are provided in SpERC factsheet (<u>http://cefic.org/en/reach-for-industries-libraries.html</u>)					

9.17.2. Exposure Estimation

9.17.2.1. Human Health

See Appendix 2.

9.17.2.2. Environment

9.18. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) as a Fuel – Industrial

9.18.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)			
Title			
Use as a Fuel			
Use Descriptor			
Sector(s) of Use		3	
Process Categories		1, 2, 3, 8a, 8b, 16 Further information on the PROC codes is contained	mapping and allocation of in Table 9.1
Environmental Release Cate	egories	7	
Specific Environmental Rele	ase Category	ESVOC SpERC 7.12a.v1	
Processes, tasks, activitie	s covered		
Covers the use as a fuel (or with its transfer, use, equipm	fuel additives and a nent maintenance a	additive components) and in nd handling of waste.	ncludes activities associated
See Section 3.	Principal states and		
Section 2 Operational con	ditions and risk m	nanagement measures	
Out the second and the second			
Section 2.1 Control of wor	Ker exposure		
Product characteristics	Liquid		
	Liquid vapour pres	auro ZO 5 kDa at STD OC	<u>م</u>
Concentration of substance	Covers percentage	SSULE SUD KHA ALOTH. UU	vo. up to 100 % (upless stated
in product	differently) G13	e substance in the product	up to 100 % (unless stated
Frequency and duration of	Covers daily expos	sures up to 8 hours (unless	stated differently) G2
use/exposure			
Other Operational	Assumes use at not more than 20°C above ambient temperature, unless		
Conditions affecting	stated differently. G15. Assumes a good basic standard of occupational		
exposure [hygiene is implemented G1.			
Specific Risk management		Derating Conditions	
See Appendix 3.			
Section 2.2 Control of env	vironmental expos	ure	
Product characteristics			
Substance is complex UVCE	3 [PrC3]. Predomin	antly hydrophobic [PrC4a].	
Amounts used	<u> </u>	· · · _	
Fraction of EU tonnage used	1 in region	(0 1
Regional use tonnage (tonne	ee/vear)	1	5 205
Fraction of Regional tonnage		,	1
			1 E 225
Annual site tonnage (tonnes/year)			1 7 26
Iviaximum daily site tonnage (kg/day) [1.766			
Frequency and duration of use			
Continuous release [FD2].			~~~
Emission days (days/year) 300			
Environmental factors not influenced by risk management			
Local freshwater dilution factor 10			
Local marine water dilution factor 100			
Other given operational conditions affecting environmental exposure			

Release fraction to air from process (initial release prior to RMM)	5.0e-3				
Release fraction to wastewater from process (initial release prior to	0.00001				
RMM)					
Release fraction to soil from process (initial release prior to Rivin)					
rechnical conditions and measures at process level (source) to prev	vent release				
Common practices vary across sites thus conservative process release e	stimates used [ICS1].				
releases to soil	rges, air emissions and				
Risk from environmental exposure is driven by freshwater sediment [TCR	(1b].				
If discharging to domestic sewage treatment plant, no onsite wastewater Onsite wastewater treatment required [TCR13]	treatment required [TCR9].				
Treat air emission to provide a typical removal efficiency of (%)	95				
Treat onsite wastewater (prior to receiving water discharge) to provide	95.7				
the required removal efficiency $> (\%)$					
If discharging to domestic sewage treatment plant, provide the required	28.1				
onsite wastewater removal efficiency of $> (\%)$					
Organisation measures to prevent/limit release from site					
Do not apply industrial sludge to natural soils [OMS2]. Sludge should be	incinerated contained or				
reclaimed [OMS3].					
Conditions and measures related to municipal sewage treatment pla	int				
· · · ·					
Estimated substance removal from wastewater via domestic sewage	94.1				
treatment (%)					
Total efficiency of removal from wastewater after onsite and offsite	95.7				
(domestic treatment plant) RMMs (%)					
Maximum allowable site tonnage (M _{Safe}) based on release following total	1.7e6				
wastewater treatment removal (kg/d)					
Assumed domestic sewage treatment plant flow (m ³ /d)	2000				
Conditions and measures related to external treatment of waste for	disposal				
Combustion emissions limited by required exhaust emission controls [ETW1]. Combustion emissions					
Conditions and measures related to external recovery of waste					
External recovery and recycling of waste should comply with applicable regulations [FRW1]					
External recovery and recycling or waste should comply with applicable regulations [ERW1].					
Additional information on the basis for the allocation of the indentified OCs and RMMs is contained in PETRORISK file.					
Section 3 Exposure Estimation					
3.1. Health					
See Appendix 2.					
3.2. Environment					
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk					
model [EE2].					
Section 4 Guidance to check compliance with the Exposure Scenar	io				
4.1. Health					
Available hazard data do not support the need for a DNEL to be established for other health effects.					
G36. Risk Management Measures are based on qualitative risk characterisation. G37.					
4.2. Environment					
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus,					
scaling may be necessary to define appropriate site-specific risk management measures [DSU1].					
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either					
alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite					
technologies, either alone or in combination [USU3]. Further details on scaling and control					
technologies are provided in SpERC factsheet (<u>http://cefic.org/en/reach-for-industries-libraries.html</u>)					
[DSU4].					

9.18.2. Exposure Estimation

9.18.2.1. Human Health

See Appendix 2.

9.18.2.2. Environment

9.19. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) as a Fuel – Professional

9.19.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)			
Title			
Use as a Fuel			
Use Descriptor			
Sector(s) of Use		22	
Process Categories		1, 2, 3, 8a, 8b, 16 Further information on the PROC codes is contained	mapping and allocation of in Table 9.1
Environmental Release Cate	gories	9a, 9b	
Specific Environmental Rele	ase Category	ESVOC SpERC 9.12b.v1	
Processes, tasks, activitie	s covered	·	
Covers the use as a fuel (or with its transfer, use, equipm	fuel additives and a nent maintenance a	additive components) and ir nd handling of waste.	ncludes activities associated
Assessment Method			
See Section 3.			
Section 2 Operational con	ditions and risk m	nanagement measures	
Section 2.1 Control of wor	ker exposure		
Product characteristics			
Physical form of product	Liquid		
Vapour pressure (kPa)	Liquid, vapour pres	ssure <0.5 kPa at STP. OC	<u>3.</u>
Concentration of substance in product	Covers percentage differently) G13	e substance in the product i	up to 100 % (unless stated
Frequency and duration of	Covers daily expos	sures up to 8 hours (unless	stated differently) G2
use/exposure			
Other Operational Conditions affecting	Assumes use at not more than 20°C above ambient temperature, unless stated differently, G15. Assumes a good basic standard of occupational		
exposure	hygiene is implemented G1.		
Specific Risk Management	Measures and Or	perating Conditions	
		J. J	
See Appendix 3.			
Section 2.2 Control of env	ironmental expos	ure	
Product characteristics			
Substance is complex UVCE	3 [PrC3]. Predomin	antly hydrophobic [PrC4a].	
Amounts used			
Fraction of EU tonnage used	in region	().1
Regional use tonnage (tonne	es/year)	1	1.0e5
Fraction of Regional tonnage	e used locally	(0.0005
Annual site tonnage (tonnes/year)		5	5.1e1
Maximum daily site tonnage	(kg/day)		1.4e2
Frequency and duration of use			
Continuous release [FD2].			
Emission days (days/year) 365			
Environmental factors not influenced by risk management			
Local freshwater dilution factor			
Local marine water dilution factor 100			100
Other given operational conditions affecting environmental exposure			
<u> </u>	<u></u>		

Release fraction to air from wide dispersive use (regional use only)	1.0e-4			
Release fraction to wastewater wide dispersive use	0.00001			
Release fraction to soil from wide dispersive use (regional use only)	0.00001			
Technical conditions and massures at process level (course) to provent release				
Common proof including and measures at process level (source) to prev				
Common practices vary across sites thus conservative process release e	stimates used [ICS1].			
releases to soil	ges, air emissions and			
Risk from environmental exposure is driven by freshwater [TCR1a]				
No wastewater treatment required ITCR61				
Treat air emission to provide a typical removal efficiency of (%)	N/A			
Treat onsite wastewater (prior to receiving water discharge) to provide	0			
the required removal efficiency $> (\%)$	-			
If discharging to domestic sewage treatment plant, provide the required	0			
onsite wastewater removal efficiency of \geq (%)				
Organisation measures to prevent/limit release from site				
Do not apply industrial sludge to natural soils [OMS2]. Sludge should be	incinerated, contained or			
reclaimed [OMS3].	·			
Conditions and measures related to municipal sewage treatment pla	Int			
Estimated substance removal from wastewater via domestic sewage	94.1			
treatment (%)				
Total efficiency of removal from wastewater after onsite and offsite	94.1			
(domestic treatment plant) RMMs (%)				
Maximum allowable site tonnage (M _{Safe}) based on release following total	4.7e4			
wastewater treatment removal (kg/d)	0000			
Assumed domestic sewage treatment plant flow (m [°] /d)	2000			
Conditions and measures related to external treatment of waste for disposal				
Combustion emissions limited by required exhaust emission controls [ETW1]. Combustion emissions				
considered in regional exposure assessment [E1W2].				
Conditions and measures related to external recovery of waste				
External recovery and recycling of waste should comply with applicable re	egulations [ERW1].			
Additional information on the basis for the allocation of the indentified OCs and RMMs is				
Contained in PETRORISK Tile.				
Section 3 Exposure Estimation				
See Annendix 2				
3 2 Environment				
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk				
model [EE2].				
Section 4 Guidance to check compliance with the Exposure Scenario				
4.1. Health				
Available hazard data do not support the need for a DNEL to be established for other health effects.				
G36. Risk Management Measures are based on qualitative risk characterisation. G37.				
4.2. Environment				
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus,				
scaling may be necessary to define appropriate site-specific risk management measures [DSU1].				
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either				
alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite				
technologies, either alone of in combination [DSUS]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/ep/reach_for_industries_librarios_html)				

9.19.2. Exposure Estimation

9.19.2.1. Human Health

See Appendix 2.

9.19.2.2. Environment

9.20. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) as a Fuel – Consumer

9.20.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)				
Sector(s) of Use		21		
Product Categories		13 Eurther information on the	monning and allocation of	
		PC codes is contained in	7 Tapping and allocation of Table 9.1	
Environmental Release Cate	aories	9a 9h		
Specific Environmental Rele	ase Category	ESVOC SpERC 9 12c v1		
Brocossos tasks activition	s covered			
Covers consumer uses in fu				
Accessment Method	515			
See Section 3.	PC			
Section 2 Operational con	ditions and risk m	nanagement measures		
Section 2.4. Control of corr				
Section 2.1 Control of con	sumer exposure			
Product characteristics	Liquid			
Vapour prossuro (kPa)	Liquid vapour proc	sura <0.5 kPa at STR	23	
Concentration of substance		Sule SUS Kra al SIF. Ou	$\frac{\sqrt{3}}{\sqrt{2}}$	
	differently) G13	substance in the product	up to 100 % (unless stated	
Frequency and duration of	Covers daily evos	sures up to 8 hours (unless	a stated differently) C2	
	Covers daily expos		s stated unerenity) 62	
Other Operational	Assumes use at no	ot more than 20°C above a	ambient temperature unless	
Conditions affecting	stated differently G15 Assumes a good basic standard of occupational			
exposure	hygiene is implemented G1.			
Specific Risk Management	Measures and Or	perating Conditions		
See Appendix 3.				
Section 2.2 Control of env	ironmental expos	ure		
Product characteristics				
Substance is complex UVCE	3 [PrC3]. Predomin	antly hydrophobic [PrC4a]		
Amounts used				
Fraction of EU tonnage used in region			0.1	
Regional use tonnage (tonne	es/vear)		6.4e4	
Fraction of Regional tonnage used locally			0.0005	
Annual site tonnage (tonnes/vear)			3 2e1	
Maximum daily site tonnage (kg/day)			8 7o1	
Erromenant any site torinage (kg/uay) [0.701				
Continuous roloaso (ED2)				
Continuous release [FD2].				
Environmental factors not influenced by risk management				
Level freehunden diktien festen				
Local meshwater dilution factor				
Local manne water dilution factor [100				
other given operational conditions affecting environmental exposure				

Release fraction to air from wide dispersive use (regional use only) Release fraction to wastewater wide dispersive use Release fraction to soil from wide dispersive use (regional use only) Conditions and measures related to municipal sewage treatment pla	1.0e-4 0.00001 0.00001				
Release fraction to wastewater wide dispersive use Release fraction to soil from wide dispersive use (regional use only) Conditions and measures related to municipal sewage treatment pla	0.00001 0.00001				
Release fraction to soil from wide dispersive use (regional use only) Conditions and measures related to municipal sewage treatment pla	0.00001				
Conditions and measures related to municipal sewage treatment pla					
	ant				
Risk from environmental exposure is driven by freshwater [STP7a].					
Estimated substance removal from wastewater via domestic sewage treatment (%)	94.1				
Maximum allowable site tonnage (M _{Safe}) based on release following total wastewater treatment removal (kg/d)	3.0e4				
Assumed domestic sewage treatment plant flow (m ³ /d)	2000				
Conditions and measures related to external treatment of waste for	disposal				
Combustion emissions limited by required exhaust emission controls [ETW1]. Combustion emissions considered in regional exposure assessment [ETW2].					
Conditions and measures related to external recovery of waste	Conditions and measures related to external recovery of waste				
External recovery and recycling of waste should comply with applicable re	egulations [ERW1].				
Additional information on the basis for the allocation of the indentified OCs and RMMs is					
contained in PETRORISK file.					
Section 3 Exposure Estimation					
3.1. Health					
See Appendix 2.					
3.2. Environment					
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].					
Section 4 Guidance to check compliance with the Exposure Scenario					
4.1. Health					
Available hazard data do not support the need for a DNEL to be established for other health effects.					
G36. Risk Management Measures are based on qualitative risk characterisation. G37.					
4.2. Environment					
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4]					

9.20.2. Exposure Estimation

9.20.2.1. Human Health

See Appendix 2.

9.20.2.2. Environment

9.21. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Explosives Manufacture and Use - Professional

9.21.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)			
Title			
Explosives Manufacture and Use			
Use Descriptor			
Sector(s) of Use		22	
Process Categories		1, 3, 5, 8a, 8b Further information on the PROC codes is contained	e mapping and allocation of I in Table 9.1
Environmental Release Cate	egories	8e	
Specific Environmental Rele	ase Category	Not Applicable	
Processes, tasks, activities	s covered		
Covers exposures arising fro transfer, mixing and charging Assessment Method	om the manufacture g) and equipment cl	e and use of slurry explosiv leaning	es (including materials
See Section 3.			_
Section 2 Operational con	ditions and risk m	nanagement measures	
•			
Section 2.1 Control of wor	ker exposure		
Product characteristics			
Physical form of product	Liquid		
Vapour pressure (kPa)	Liquid, vapour pres	ssure <0.5 kPa at STP. OC	03
Concentration of substance	Covers percentage	e substance in the product	up to 100 % (unless stated
in product	differently) G13		
Frequency and duration of use/exposure	Covers daily expos	sures up to 8 hours (unless	s stated differently) G2
Other Operational Conditions affecting	Assumes use at not more than 20°C above ambient temperature, unless stated differently. G15. Assumes a good basic standard of occupational byging is implemented G1		
Specific Risk Management	Measures and Or	perating Conditions	
	, measure and a		
See Appendix 3.			
Section 2.2 Control of env	ironmental expos	ure	
Product characteristics			
Substance is complex UVCE	3 [PrC3]. Predomin	antly hydrophobic [PrC4a]	
Amounts used	<u> </u>	,,,,,	
Fraction of EU tonnage used	l in region		0.1
Pogional use tonnage (tonn			6 802
Regional use tonnage (tonno	55/yeary		0.002
Fraction of Regional tonnay			
Annual site tonnage (tonnes	/year)		3.4e-1
Maximum daily site tonnage (kg/day) 9.3e-1			9.3e-1
Frequency and duration of use			
Continuous release [FD2].			
Emission days (days/year) 365			
Environmental factors not influenced by risk management			
Local freshwater dilution factor			
Local marine water dilution factor 100			
Other given operational conditions affecting environmental exposure			
<u> </u>	<u></u>		2

0.001					
0.02					
0.01					
Technical conditions and measures at process level (source) to prevent release					
stimates used [TCS1].					
rges, air emissions and					
. goo, oo					
R1b].					
Ν/Δ					
0					
0					
0					
0					
•					
incinerated, contained or					
ant					
94.1					
94.1					
2.2e2					
2000					
Conditions and measures related to external treatment of waste for disposal					
External treatment and disposal of waste should comply with applicable regulations [ETW3].					
Conditions and measures related to external recovery of waste					
External recovery and recycling of waste should comply with applicable regulations [ERW1].					
Additional information on the basis for the allocation of the indentified OCs and RMMs is contained in PETRORISK file					
3.1. Health					
See Appendix 2.					
3.2. Environment					
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk					
model [EE2].					
Section 4 Guidance to check compliance with the Exposure Scenario					
4.1. Health					
Available hazard data do not support the need for a DNEL to be established for other health effects.					
4.2 Environment					
4.2. Environment					
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus,					
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either					
alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite					
technologies, either alone or in combination [DSU3].					

9.21.2. Exposure Estimation

9.21.2.1. Human Health

See Appendix 2.

9.21.2.2. Environment

9.22. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Functional Fluids – Industrial

9.22.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)				
Title				
Use as Functional Fluids				
Use Descriptor				
Sector(s) of Use		3		
Process Categories		1, 2, 3, 4, 8a, 8b, 9 Further information on the PROC codes is contained	e mapping and allocation of I in Table 9.1	
Environmental Release Cate	egories	7		
Specific Environmental Rele	ase Category	ESVOC SpERC 7.13a.v1		
Processes, tasks, activitie	s covered			
Use as functional fluids e.g. industrial equipment includin Assessment Method	cable oils, transfer og maintenance and	oils, coolants, insulators, r I related material transfers	efrigerants, hydraulic fluids in	
See Section 3				
Section 2 Operational con	ditions and risk m	nanagement measures		
Section 2.1 Control of wor	rker exposure			
Product characteristics	•			
Physical form of product	Liquid			
Vapour pressure (kPa)	Liquid, vapour pres	ssure <0.5 kPa at STP. <mark>OC</mark>	03.	
Concentration of substance	Covers percentage	e substance in the product	up to 100 % (unless stated	
in product	differently) G13			
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated differently) G2			
Other Operational Conditions affecting exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently. G15. Assumes a good basic standard of occupational byging is implemented G1			
Specific Risk Management	Measures and Op	perating Conditions		
		-		
See Appendix 3.				
Section 2.2 Control of environmental exposure				
Product characteristics				
Substance is complex UVCE	3 [PrC3]. Predomin	antly hydrophobic [PrC4a]		
Amounts used		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Fraction of ELL tonnage used	1 in region		0.1	
Pegional use tonnage (tonn	a in region		4 201	
Frequencies of Degional tenness			4.261	
Fraction of Regional tonnage used locally			0.24	
Annual site tonnage (tonnes/year)			1.001	
Maximum daily site tonnage (kg/day) 5.0e2				
Frequency and duration of use				
Continuous release [FD2].				
Emission days (days/year) 20				
Environmental factors not influenced by risk management				
Local freshwater dilution factor 10			10	
Local marine water dilution factor 100			100	
Other given operational conditions affecting environmental exposure				
· · ·		_		

Release fraction to air from process (initial release prior to RMM)	5.0e-3				
Release fraction to wastewater from process (initial release prior to	3.00-6				
Release fraction to wastewater from process (initial release prior to 5.0e-o					
Release fraction to soil from process (initial release prior to RMM) 0.001					
Technical conditions and measures at process level (source) to prevent release					
Common practices vary across sites thus conservative process release e	stimates used [TCS1]				
Technical onsite conditions and measures to reduce or limit dischar	ges, air emissions and				
releases to soil	g,				
Risk from environmental exposure is driven by freshwater [TCR1a].					
No wastewater treatment required [TCR6].					
Prevent discharge of undissolved substance to or recover from onsite was	stewater [TCR14].				
Treat air emission to provide a typical removal efficiency of (%)	0				
Treat onsite wastewater (prior to receiving water discharge) to provide	0				
the required removal efficiency \geq (%)					
If discharging to domestic sewage treatment plant, provide the required	0				
onsite wastewater removal efficiency of \geq (%)					
Organisation measures to prevent/limit release from site					
Do not apply industrial sludge to natural soils [OMS2]. Sludge should be	incinerated, contained or				
reclaimed [OMS3].					
Conditions and measures related to municipal sewage treatment pla	int				
Estimated substance removal from wastewater via domestic sewage	94.1				
treatment (%)					
Total efficiency of removal from wastewater after onsite and offsite	94.1				
(domestic treatment plant) RMMs (%)					
Maximum allowable site tonnage (M _{Safe}) based on release following total	1.7e5				
wastewater treatment removal (kg/d)					
Assumed domestic sewage treatment plant flow (m°/d)	2000				
Conditions and measures related to external treatment of waste for disposal					
External treatment and disposal of waste should comply with applicable re	egulations [ETW3].				
Conditions and measures related to external recovery of waste					
External recovery and recycling of waste should comply with applicable re	egulations [ERW1].				
Additional information on the basis for the allocation of the indentified OCs and RMMs is					
contained in PETRORISK file.					
Section 3 Exposure Estimation					
3.1. Health					
See Appendix 2.					
3.2. Environment					
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk					
model [EE2].					
Section 4 Guidance to check compliance with the Exposure Scenario					
4.1. Health					
Available hazard data do not support the need for a DNEL to be established for other health effects.					
G36. Risk Management Measures are based on qualitative risk characterisation. G37.					
4.2. Environment					
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus,					
scaling may be necessary to define appropriate site-specific risk management measures [DSU1].					
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either					
alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite					
technologies, either alone or in combination [USU3]. Further details on scaling and control					
[D304].					

9.22.2. Exposure Estimation

9.22.2.1. Human Health

See Appendix 2.

9.22.2.2. Environment

9.23. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Functional Fluids – Professional

9.23.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)			
Title			
Use as Functional Fluids			
Use Descriptor			
Sector(s) of Use		22	
Process Categories		1, 2, 3, 8a, 9, 20 Further information on the r	mapping and allocation of
	. <u>.</u>	PROC codes is contained in	n Table 9.1
Environmental Release Cate	gories	9a, 9b	
Specific Environmental Rele	ase Category	ESVOC SPERC 9.13b.v1	
Processes, tasks, activitie	s covered		· · · · · · · ·
Use as functional fluids e.g.	cable oils, transfer	oils, insulators, refrigerants,	hydraulic fluids in
professional equipment inclu	iding maintenance	and related material transfer	S.
Assessment method			
See Section 3.			
Section 2 Operational con	ditions and risk m	nanagement measures	
O the O.A. Dentrol of mo	•		
Section 2.1 Control of wol	rker exposure		
Product characteristics	امنينها		
Physical form of product	Liquia	a sure and 5 kDa at STD 002	•
Vapour pressure (KPa)	Liquid, vapour pres	SSURE < U.5 KPa at 51P. UC3	$\sim 100^{0}$ (uploss stated
Concentration of substance	Covers percentage	e substance in the product u	p to 100 % (unless stated
In product	Covers daily expos	ourse up to 8 hours (uplace o	stated differently) C2
use/exposure			
Other Operational	Assumes use at no	ot more than 20°C above an	bient temperature, unless
Conditions affecting	stated differently. 615. Assumes a good basic standard of occupational bygiene is implemented G1		
exposure [hygiene is implemented G1.			
	: Measures and Op	Derating Conditions	
See Appendix 3.			
Section 2.2 Control of env	vironmental expos	ure	
Product characteristics			
Substance is complex UVCE	3 [PrC3]. Predomin	antly hydrophobic [PrC4a].	
Amounts used	<u> </u>	, , <u>-</u> <u>-</u>	
Fraction of EU tonnage used	t in region	0.	1
Regional use tonnage (tonne	<u>ee/vear)</u>	4	 عم1
Fraction of Pegional tonnage		 ۱	0005
Appual site tennage (tennes		2	1000
Annual site tonnage (tonnes/year)		2. E	0-0
Maximum daily site tonnage (kg/day) 5.9e-2			.9e-2
Frequency and duration of use			
Continuous release [FD2].			
Emission days (days/year) 365			
Environmental factors not influenced by risk management			
Local freshwater dilution factor 10			
Local marine water dilution factor 100			
Other given operational conditions affecting environmental exposure			

Release fraction to air from wide dispersive use (regional use only)	0.05				
Release fraction to wastewater wide dispersive use	0.025				
Release fraction to soil from wide dispersive use (regional use only)	0.025				
Technical conditions and measures at process level (source) to prevent release					
Common practices vary across sites thus conservative process release e	stimates used ITCS11				
Technical onsite conditions and measures to reduce or limit dischar	rges air emissions and				
releases to soil	ges, an emissions and				
Risk from environmental exposure is driven by freshwater [TCR1a].					
No wastewater treatment required [TCR6].					
Treat air emission to provide a typical removal efficiency of (%)	N/A				
Treat onsite wastewater (prior to receiving water discharge) to provide	0				
the required removal efficiency \geq (%)					
If discharging to domestic sewage treatment plant, provide the required	0				
onsite wastewater removal efficiency of \geq (%)					
Organisation measures to prevent/limit release from site					
Do not apply industrial sludge to natural soils [OMS2]. Sludge should be	incinerated, contained or				
reclaimed [OMS3].					
Conditions and measures related to municipal sewage treatment pla	int				
Estimated substance removal from wastewater via demostic sources	04.1				
treatment (%)	94.1				
Total efficiency of removal from wastewater after onsite and offsite	0/ 1				
(domestic treatment plant) RMMs (%)	94.1				
Maximum allowable site tonnage (M_{cref}) based on release following total	2 0e1				
wastewater treatment removal (kg/d)	2.001				
Assumed domestic sewage treatment plant flow (m ³ /d)	2000				
Conditions and measures related to external treatment of waste for	disposal				
External treatment and disposal of waste should comply with applicable regulations [ETW3].					
Conditions and measures related to external recovery of waste					
External recovery and recycling of waste should comply with applicable regulations [FRW1]					
Additional information on the basis for the allocation of the indentified OCs and RMMs is					
contained in PETRORISK file.					
Section 3 Exposure Estimation					
3.1. Health					
See Appendix 2.					
3.2. Environment					
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].					
Section 4 Guidance to check compliance with the Exposure Scenar	io				
4.1. Health					
Available hazard data do not support the need for a DNEL to be established for other health effects.					
4.2 Environment					
4.2. Environment					
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus,					
scaling may be necessary to define appropriate site-specific risk management measures [DSU1].					
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSI 12]. Required removal efficiency for air can be achieved using onsite					
technologies, either alone or in combination [DSU3]. Further details on scaling and control					
technologies, enner alone of in combination [DS05]. Future details off stechnologies are provided in SnERC factsheet (http://cefic.org/en/reach.f	or-industries-libraries html)				
IDSU41.					
lf=1.					

9.23.2. Exposure Estimation

9.23.2.1. Human Health

See Appendix 2.

9.23.2.2. Environment

9.24. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Road and Construction Applications – Professional

9.24.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)				
Title				
Use in Road and Construction Applications				
Use Descriptor				
Sector(s) of Use		22		
Process Categories		8a, 8b, 9, 10, 11, 13		
		Further information on the mapping and allocation of		
		PROC codes is contained in Table 9.1		
Environmental Release Categories		8d, 8f		
Specific Environmental Release Category		ESVOC SpERC 8.15.v1		
Processes, tasks, activities covered				
Application of surface coatings and binders in road and construction activities, including paving uses,				
manual mastic and in the application of roofing and water-proofing membranes.				
Assessment Method				
See Section 3.				
Section 2 Operational con	ditions and risk m	nanagement measures		
· · · · · · · · · · · · · · · · · · ·				
Section 2.1 Control of worker exposure				
Product characteristics				
Physical form of product	Liquid			
Vapour pressure (kPa)	Liquid, vapour pressure <0.5 kPa at STP. OC3.			
Concentration of substance	Covers percentage substance in the product up to 100 % (unless stated			
in product	differently) G13			
Frequency and duration of	Covers daily exposures up to 8 hours (unless stated differently) G2			
use/exposure				
Other Operational	Assumes use at not more than 20°C above ambient temperature, unless			
Conditions affecting	Istated differently. G15. Assumes a good basic standard of occupational			
exposure Invgiene is implemented G1.				
Specific Risk Management Measures and Operating Conditions				
See Appendix 3.				
Section 2.2 Control of environmental exposure				
Product characteristics				
Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].				
Amounts used				
Fraction of EU tonnage used	l in region	0 1		
Regional use tonnage (tonnes/year)		3 6e3		
Fraction of Pagional tonnago used locally		0.0005		
		0.0005		
Annual site tonnage (tonnes/year)		1.0		
iviaximum dally site tonnage (kg/day)		4.9		
Frequency and duration of use				
Continuous release [FD2].				
Emission days (days/year) [365]				
Environmental factors not influenced by risk management				
Local freshwater dilution fac	tor	10		
Local marine water dilution f	actor	100		
Other given operational conditions affecting environmental exposure				

Release fraction to air from wide dispersive use (regional use only)	0.95			
Release fraction to wastewater wide dispersive use	0.01			
Release fraction to soil from wide dispersive use (regional use only)	0.04			
Technical conditions and measures at process level (source) to prevent release				
Common practices vary across sites thus conservative process release estimates used [TCS1]				
Technical onsite conditions and measures to reduce or limit discharges, air emissions and				
releases to soil				
Risk from environmental exposure is driven by freshwater sediment [TCR1b].				
No wastewater treatment required [TCR6].				
Treat air emission to provide a typical removal efficiency of (%)	N/A			
Treat onsite wastewater (prior to receiving water discharge) to provide	0			
the required removal efficiency \geq (%)				
If discharging to domestic sewage treatment plant, provide the required	0			
onsite wastewater removal efficiency of \geq (%)				
Organisation measures to prevent/limit release from site				
Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or				
reclaimed [OMS3].				
Conditions and measures related to municipal sewage treatment plant				
Estimated substance removal from wastewater via demostic sowage	04.1			
treatment (%)	94.1			
Total efficiency of removal from wastewater after onsite and offsite	94 1			
(domestic treatment plant) RMMs (%)	54.1			
Maximum allowable site tonnage (M_{set}) based on release following total	7 3e2			
wastewater treatment removal (kg/d)				
Assumed domestic sewage treatment plant flow (m ³ /d)	2000			
Conditions and measures related to external treatment of waste for	disposal			
External treatment and disposal of waste should comply with applicable re	egulations [ETW3].			
Conditions and measures related to external recovery of waste				
External recovery and recycling of waste should comply with applicable re	egulations [ERW1].			
Additional information on the basis for the allocation of the indentified OCs and RMMs is				
Contained in PETRORISK file.				
3 1 Health				
See Appendix 2				
3.2. Environment				
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk				
model [EE2].				
Section 4 Guidance to check compliance with the Exposure Scenario				
4.1. Health				
Available hazard data do not support the need for a DNEL to be established for other health effects.				
G36. Risk Management Measures are based on qualitative risk characterisation. G37.				
4.2. Environment				
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus,				
scaling may be necessary to define appropriate site-specific risk management measures [DSU1].				
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either				
alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on easing and control				
technologies, either alone of in combination [DSO3]. Fulther details on scaling and control technologies are provided in SnERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html)				
IDSU41.				
9.24.2. Exposure Estimation

9.24.2.1. Human Health

See Appendix 2.

9.24.2.2. Environment

See PETRORISK file in IUCLID section 13 – "LocalCSR" worksheet

9.25. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Rubber Production and Processing Applications – Industrial

9.25.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)				
Title				
Rubber Production and Processing				
Use Descriptor				
Sector(s) of Use		3, 10, 11		
Process Categories		1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 13, 14, 15, 21		
		PROC codes is contained	d in Table 9.1	
Environmental Release Cate	gories	1, 4, 6d		
Specific Environmental Rele	ase Category	ESVOC SpERC 4.19.v1		
Processes, tasks, activities	s covered			
Manufacture of tyres and get handling and mixing of rubbe	neral rubber articles er additives, calenda	s, including processing of aring, vulcanising, cooling	raw (uncured) rubber, and finishing as well as	
See Section 3				
Section 2 Operational con	ditions and risk m	anagement measures		
		ianagement measures		
Section 2.1 Control of wor	ker exposure			
Product characteristics				
Physical form of product	Liquid			
Vapour pressure (kPa)	Liquid, vapour pres	ssure <0.5 kPa at STP. <mark>O</mark>	C3.	
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) G13			
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated differently) G2			
Other Operational	Operation is carried out at elevated temperature (> 20°C above ambient			
Conditions affecting	temperature). OC7. Assumes a good basic standard of occupational			
exposure	hygiene is impleme	ented G1.		
Specific Kisk Management	measures and Op	berating Conditions		
See Appendix 3.				
Section 2.2 Control of env	ironmental expos	ure		
Product characteristics				
Substance is complex UVCE	[PrC3]. Predomin	antly hydrophobic [PrC4a]		
Amounts used	<u> </u>			
Fraction of EU tonnage used in region				
Regional use tonnage (tonne	es/vear)		2.8e1	
Fraction of Regional tonnage	e used locally		1	
Annual site tonnage (tonnes	/vear)		2.8e1	
Maximum daily site tonnage	(kg/dav)		1.4e3	
Frequency and duration of use				
Continuous release [FD2].				
Emission days (days/year)			20	
Environmental factors not influenced by risk management				
Local freshwater dilution fact	ior		10	

Local marine water dilution factor				
Other given operational conditions affecting environmental exposur	9			
other given operational conditions affecting environmental exposur	C			
Release fraction to air from process (initial release prior to RMM) 0.01				
Pelease fraction to wastewater from process (initial release prior to	3.00.5			
RMM)	5.06-5			
Release fraction to soil from process (initial release prior to RMM)	0.0001			
Technical conditions and measures at process level (source) to prev	vent release			
Common practices vary across sites thus conservative process release e	stimates used [TCS1].			
Technical onsite conditions and measures to reduce or limit dischar	ges, air emissions and			
releases to soll	411			
No wastewater treatment required [TCR6].	(TD].			
Treat air emission to provide a typical removal efficiency of (%)	0			
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency $> (\%)$	0			
If discharging to domestic sewage treatment plant, provide the required	0			
onsite wastewater removal efficiency of \geq (%)	5			
Organisation measures to prevent/limit release from site				
Do not apply industrial sludge to natural soils [OMS2]. Sludge should be reclaimed [OMS3].	incinerated, contained or			
Conditions and measures related to municipal sewage treatment pla	Int			
Estimated substance removal from wastewater via domestic sewage treatment (%)	94.1			
Total efficiency of removal from wastewater after onsite and offsite	94.1			
(domestic treatment plant) RMMs (%)				
Maximum allowable site tonnage (M _{Safe}) based on release following total	2.3e5			
wastewater treatment removal (kg/d)				
Assumed domestic sewage treatment plant flow (m ³ /d)	2000			
Conditions and measures related to external treatment of waste for o	disposal			
External treatment and disposal of waste should comply with applicable re-	egulations [ETW3].			
Conditions and measures related to external recovery of waste				
External recovery and recycling of waste should comply with applicable regulations [FRW1]				
Additional information on the basis for the allocation of the indentified OCs and RMMs is				
contained in PETRORISK file.				
Section 3 Exposure Estimation				
3.1. Health				
See Appendix 2.				
3.2. Environment				
The Hydrocarbon Block Method has been used to calculate environmenta	al exposure with the Petrorisk			
model [EE2].	•			
Section 4 Guidance to check compliance with the Exposure Scenar	io			
4.1. Health				
Available hazard data do not support the need for a DNEL to be established for other health effects.				
G36. Risk Management Measures are based on qualitative risk characterisation. G37.				
4.2. Environment				
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus,				
scaling may be necessary to define appropriate site-specific risk management measures [DSU1].				
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either				
alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite				
technologies, either alone or in combination [DSU3]. Further details on scaling and control				
technologies are provided in SpERC factsheet (<u>http://cefic.org/en/reach-for-industries-libraries.html</u>)				
[DSU4].				

9.25.2. Exposure Estimation

9.25.2.1. Human Health

See Appendix 2.

9.25.2.2. Environment

See PETRORISK file in IUCLID section 13 – "LocalCSR" worksheet

9.26. Other Consumer Uses of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) – Consumer

9.26.1. Exposure Scenario

Section 1 Exposure Scenario Title Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53)				
Title				
Other Consumer Uses				
Use Descriptor				
Sector(s) of Use		21		
Product Categories		28, 39 Further information on the mapping and allocation of PC codes is contained in Table 9.1		
Environmental Release Cate	egories	8a, 8d		
Specific Environmental Rele	ase Category	ESVOC SpERC 8.16.v1		
Processes, tasks, activitie	s covered			
Consumer uses not covered cosmetics/personal care pro Note: For cosmetic and pers under REACH as human he	in consumer exam ducts, perfumes an onal care products, alth is covered by a	ples listed above e.g. use Id fragrances. , risk assessment only req Ilternative legislation.	as a carrier in uired for the environment	
Assessment Method				
See Section 3.				
Section 2 Operational con	ditions and risk m	nanagement measures		
Section 2.1 Control of con				
Product characteristics				
Physical form of product	Liquid			
Vapour pressure (kPa)	Liquid, vapour pres	ssure <0.5 kPa at STP. O	C3.	
Concentration of substance	Covers percentage substance in the product up to 100 % (unless stated differently) G13			
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated differently) G2			
Other Operational Conditions affecting	Assumes use at not more than 20°C above ambient temperature, unless stated differently. G15. Assumes a good basic standard of occupational			
exposure	hygiene is impleme	ented G1.		
Specific Risk Management	i Measures and Op	berating Conditions		
See Appendix 3.				
Section 2.2 Control of env	vironmental expos	ure		
Product characteristics				
Substance is complex UVCE	3 [PrC3]. Predomin	antly hydrophobic [PrC4a]].	
Amounts used				
Fraction of EU tonnage used	t in region		0.1	
Regional use tonnage (tonne	es/vear)		1.1e3	
Fraction of Regional tonnage	e used locally		0.0005	
Annual site tonnage (tonnes	/vear)		5 5e-1	
Maximum daily site tonnage	(kg/day)		1.5	
Frequency and duration of use				
Continuous release [FD2]				
Emission days (days/year) 365				
Environmental factors not influenced by risk management				
Local freshwater dilution factor				
Local marine water dilution f	actor		100	

Other given operational conditions affecting environmental experience				
	e			
Release fraction to air from wide dispersive use (regional use only)	0.95			
Release fraction to wastewater wide dispersive use	0.025			
Release fraction to soil from wide dispersive use (regional use only)	0.025			
Conditions and measures related to municipal sewage treatment pla	ant			
Risk from environmental exposure is driven by freshwater sediment [STP	'7b].			
Estimated substance removal from wastewater via domestic sewage treatment (%)	94.1			
Maximum allowable site tonnage (M _{Safe}) based on release following total wastewater treatment removal (kg/d)	2.6e2			
Assumed domestic sewage treatment plant flow (m ³ /d)	2000			
Conditions and measures related to external treatment of waste for a	disposal			
External treatment and disposal of waste should comply with applicable re	egulations [ETW3].			
Conditions and measures related to external recovery of waste				
External recovery and recycling of waste should comply with applicable re	egulations [ERW1].			
Additional information on the basis for the allocation of the indentified OCs and RMMs is contained in PETRORISK file.				
Section 3 Exposure Estimation				
3.1. Health				
See Appendix 2.				
3.2. Environment				
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk				
model [EE2].				
Section 4 Guidance to check compliance with the Exposure Scenario				
4.1. Health				
Available hazard data do not support the need for a DNEL to be established for other health effects.				
G36. Risk Management Measures are based on qualitative risk characterisation. G37.				
4.2. Environment				
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus,				
Scaling may be necessary to define appropriate site-specific fisk management measures [DSUT]. Further details on scaling and control technologies are provided in SnERC factsbeet				
(http://cefic.org/en/reach-for-industries-libraries.html) IDSI 41				
(<u>nup://celic.org/en/reach-for-industries-libraries.ntml</u>) [DSU4].				

9.26.2. Exposure Estimation

9.26.2.1. Human Health

See Appendix 2.

9.26.2.2. Environment

See PETRORISK file in IUCLID section 13 - "LocalCSR" worksheet

9.27. Regional Environment Exposure Estimation See PETRORISK file in IUCLID Section 13 – "RegionalCSR" worksheet

10. RISK CHARACTERISATION

10.1. Manufacture of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) – Industrial

10.1.1. Human Health See Appendix 3.

10.1.2. Environment

See PETRORISK file in IUCLID section 13 – "LocalCSR" worksheet

10.2. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) as Intermediate – Industrial

10.2.1. Human Health See Appendix 3.

10.2.2. Environment

See PETRORISK file in IUCLID section 13 – "LocalCSR" worksheet

10.3. Distribution of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) – Industrial

10.3.1. Human Health See Appendix 3.

10.3.2. Environment

See PETRORISK file in IUCLID section 13 - "LocalCSR" worksheet

10.4. Formulation & (Re)packing of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) – Industrial

10.4.1. Human Health

See Appendix 3.

10.4.2. Environment

See PETRORISK file in IUCLID section 13 - "LocalCSR" worksheet

10.5. Uses of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Coatings – Industrial

10.5.1. Human Health

See Appendix 3.

10.5.2. Environment

See PETRORISK file in IUCLID section 13 - "LocalCSR" worksheet

10.6. Uses of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N;

R51/53) in Coatings – Professional

10.6.1. Human Health See Appendix 3.

10.6.2. Environment

See PETRORISK file in IUCLID section 13 – "LocalCSR" worksheet

10.7. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Cleaning Agents – Industrial

10.7.1. Human Health See Appendix 3.

10.7.2. Environment See PETRORISK file in IUCLID section 13 – "LocalCSR" worksheet

10.8. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Cleaning Agents – Professional

10.8.1. Human Health See Appendix 3.

10.8.2. Environment See PETRORISK file in IUCLID section 13 – "LocalCSR" worksheet

10.9. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Oil and Gas Field Drilling and Production Operations – Industrial

10.9.1. Human Health See Appendix 3.

10.9.2. Environment See PETRORISK file in IUCLID section 13 – "LocalCSR" worksheet

10.10. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Oil and Gas Field Drilling and Production Operations – Professional

10.10.1. Human Health See Appendix 3.

10.10.2. Environment See PETRORISK file in IUCLID section 13 – "LocalCSR" worksheet

10.11. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Lubricants – Industrial

10.11.1. Human Health

See Appendix 3.

10.11.2. Environment

See PETRORISK file in IUCLID section 13 - "LocalCSR" worksheet

10.12. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Lubricants – Professional: Low Environmental Release

10.12.1. Human Health

See Appendix 3.

10.12.2. Environment

See PETRORISK file in IUCLID section 13 - "LocalCSR" worksheet

10.13. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Lubricants – Professional: High Environmental Release

10.13.1. Human Health See Appendix 3.

10.13.2. Environment See PETRORISK file in IUCLID section 13 – "LocalCSR" worksheet

10.14. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Metal Working Fluids/Rolling Oils – Industrial

10.14.1. Human Health See Appendix 3.

10.14.2. Environment

See PETRORISK file in IUCLID section 13 - "LocalCSR" worksheet

10.15. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Metal Working Fluids/Rolling Oils – Professional:

10.15.1. Human Health See Appendix 3.

10.15.2. Environment

See PETRORISK file in IUCLID section 13 – "LocalCSR" worksheet

10.16. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) as Release Agents or Binders – Industrial

10.16.1. Human Health See Appendix 3.

10.16.2. Environment

See PETRORISK file in IUCLID section 13 – "LocalCSR" worksheet

10.17. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) as Release Agents or Binders – Professional

10.17.1. Human Health See Appendix 3.

10.17.2. Environment See PETRORISK file in IUCLID section 13 – "LocalCSR" worksheet

10.18. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) as a Fuel – Industrial

10.18.1. Human Health See Appendix 3.

10.18.2. Environment

See PETRORISK file in IUCLID section 13 - "LocalCSR" worksheet

10.19. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) as a Fuel – Professional

10.19.1. Human Health See Appendix 3.

10.19.2. Environment

See PETRORISK file in IUCLID section 13 – "LocalCSR" worksheet

10.20. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) as a Fuel – Consumer

10.20.1. Human Health See Appendix 3.

10.20.2. Environment

See PETRORISK file in IUCLID section 13 – "LocalCSR" worksheet

10.21. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Explosives Manufacture and Use – Professional

10.21.1. Human Health See Appendix 3.

10.21.2. Environment See PETRORISK file in IUCLID section 13 – "LocalCSR" worksheet

10.22. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Functional Fluids – Industrial

10.22.1. Human Health

See Appendix 3.

10.22.2. Environment

See PETRORISK file in IUCLID section 13 – "LocalCSR" worksheet

10.23. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Functional Fluids – Professional

10.23.1. Human Health See Appendix 3.

10.23.2. Environment

See PETRORISK file in IUCLID section 13 - "LocalCSR" worksheet

10.24. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Road and Construction Applications – Professional

10.24.1. Human Health See Appendix 3.

10.24.2. Environment See PETRORISK file in IUCLID section 13 – "LocalCSR" worksheet

10.25. Use of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) in Rubber Production and Processing – Industrial

10.25.1. Human Health See Appendix 3.

10.25.2. Environment

See PETRORISK file in IUCLID section 13 - "LocalCSR" worksheet

10.26. Other Consumer Uses of Straight Run Gas Oil (Xn; R20, Xn; R65, R66, N; R51/53) – Consumer

10.26.1. Human Health See Appendix 3.

10.26.2. Environment

See PETRORISK file in IUCLID section 13 – "LocalCSR" worksheet

10.27. Overall exposure (combined for all relevant emission/release sources)

10.27.1. Human health (combined for all exposure routes) See Appendix 2. & 3.

10.27.2. Environment (combined for all exposure routes) Combined exposures can be calculated with information provided on the individual exposure scenarios presented in section 9. However, it is unclear how to define risk management measures resulting from this analysis.

10.28. Regional Environment See PETRORISK file in IUCLID Section 13 – "RegionalCSR" worksheet

APPENDIX 2: Qualitative Exposure Estimation

Qualitative Exposure Estimation for R20 substances

There is a difference of at least a factor of 30 between the short-term (when expressed over 15 minutes) and the long term DNELs (when expressed over 8 hours)), i.e. the long-term DNEL is lower by at least 30x. In these circumstances a quantitative assessment of short-term exposure assessment has not be undertaken based on the following rationale:

For any single short term (ST) event to adversely influence the implementation of the long term (LT) reference value (DNEL when available) in the CSA, then the single ST exposure must be ~30x greater than the LT DNEL. Where the ST exposure might be repeated during the course of an activity, then the contribution made by the ST exposures to the LT average would clearly be greater. Hence, provided daily average exposures are controlled to within the LT reference value, then this will also account for any potential risks arising from ST exposure.

Qualitative Exposure Estimation for R65 substances

'Aspiration' means the entry of a liquid substance directly into the trachea and lower respiratory tract. Aspiration of hydrocarbon substances can result in severe acute effects such as chemical pneumonitis, varying degrees of pulmonary injury or death. This property relates to the potential for low viscosity material to spread quickly into the deep lung and cause severe pulmonary tissue damage. Classification of a hydrocarbon substance for aspiration hazard is made on the basis of reliable human evidence or on the basis of physical properties.

The R65 risk phrase (Harmful: may cause lung damage if swallowed) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. This general qualitative CSA approach aims to reduce/avoid contact or incidents with the substance. However, implementation of risk management measures (RMMs) and operational conditions (OCs) need to be proportional to the degree of concern for the health hazard presented by the substance. Exposures should be controlled to at least the levels that represent an acceptable level of risk such that the implementation of the chosen RMMs will ensure that the likelihood of an event occurring due to the substance hazard is negligible, and the risk is considered to be controlled to a level of no concern.

There are no routine anticipated exposures by ingestion related to any supported uses of the substance. The risk arising from aspiration hazard is solely related to the physico-chemical properties of the substance. The risk can therefore be controlled by implementing risk management measures tailored to this specific risk. For any substance, classified as R65, these measures should be communicated via the safety data sheet by use of the following phrase:

• Do not ingest. If swallowed then seek immediate medical assistance.

Furthermore it should be noted that where the substance is sold for use in lamp oils and grill lighters by the general public (Consumers), then these must be visibly, legibly and indelibly marked as follows, in accordance with REACH Annex XVII update of 1.4.2010:

- Keep lamps filled with this liquid out of the reach of children.

Just a sip of lamp oil – or even sucking the wick of lamps may lead to life threatening lung damage.

Qualitative Exposure Estimation for R66 substances

For substances and preparations that do not meet the criteria for R38 but which may cause concern as a result of skin dryness, flaking or cracking, the risk phrase R66 (Repeated exposure may cause skin dryness or cracking) shall be used. Decisions for applying this phrase are derived either from practical observation after normal handling and use or from other relevant information used to predict effects on the skin.

The R66 risk phrase is generally applied to petroleum substances and solvents that have the capacity

to extract lipids from the skin and that are not classified as skin irritant. R66 does not relate to a classifiable endpoint, and there is no standardized test method to quantify the effect. Thus, a DNEL cannot be derived.

Note that R66 is an "additional" risk phrase which means that it shall be applied only to substances or preparations that are already classified whilst assignment of the risk phrase R66 does not, in itself, have any impact on the formal classification of the substance.

This general qualitative CSA approach aims to reduce/avoid contact or incidents with the substance. However, implementation of risk management measures (RMMs) and operational conditions (OCs) need to be proportional to the degree of concern for the health hazard presented by the substance. Exposures should be controlled to at least the levels that represent an acceptable level of risk such that the implementation of the chosen RMMs will ensure that the likelihood of an event occurring due to the substance hazard is negligible, and the risk is considered to be controlled to a level of no concern.

For skin defatting a qualitative risk characterisation has been conducted. Handling and storage risk management measures that are generally identified for skin defatting risks are outlined in Appendix 3.b. A review of these RMMs indicates that if the user complies with the following generic statement, risks due to skin defatting are considered to be controlled. For any substance, classified as R66, these measures should be communicated via the safety data sheet by use of the following phrase:

• PPE20: If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes

APPENDIX 3: Qualitative Risk Characterisation

Qualitative Risk Characterisation for R20 substances

A quantitative assessment of short term exposure has not been undertaken as there is a difference of at least a factor of 30 between the short term (when expressed over 15 minutes) and the long term DNEL (when expressed over 8 hours) DNELs.

Qualitative Risk Characterisation for R65 substances

The implementation of relevant RMMs will ensure that the likelihood of an event occurring due to the aspiration hazard of the substance is negligible and the risk is considered to be controlled to a level of no concern.

For aspiration hazard a qualitative risk characterisation has been conducted consistent with the considerations and risk management measures identified in the Table below.

Hazard	Material	Risk /	Examples of	Components of the Qualitative Risk
		Hazard	Relevant S Phrases	Assessment
		Phrase	and P Statements	
Aspiration Toxicity (R65)	• Liquid	R65 / H304	 Response: (S2): Keep out of the reach of children (for dangerous products sold to the general public must include this safety phrase) S62: If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label P102: Keep out of reach of children. P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P331: Do NOT induce vomiting. Storage: P405: Store locked up. Disposal: P501 : Dispose of contents/container to in accordance with local/regional/ national/internation al regulations (to be specified) 	 Worker Do not ingest Implementation of basic standards of occupational hygiene Avoid splashes and spills Avoidance of contact with contaminated tools and objects Management/supervision to check that the RMMs in place are being used correctly and OCs followed Training for staff on good practice Good standard of personal hygiene Consumer Do not ingest For lamp oils and grill lighters, follow the provisions of REACH – Annex XVII, including: Marketing in black opaque containers not exceeding 1 litre Labelling with specific safe use instruction

For any substance, classified as R65, these risk management measures should be communicated via the safety data sheet by use of the following phrase:

• Do not ingest. If swallowed then seek immediate medical assistance.

Qualitative Risk Characterisation for R66 substances

The implementation of relevant RMMs will ensure that the likelihood of an event occurring due to the substance hazard of skin defatting is negligible and the risk is considered to be controlled to a level of no concern.

For skin defatting a qualitative risk characterisation has been conducted consistent with the considerations and risk management measures identified in the Table below.

Hazard	Material	Risk / Hazard Phrase	Examples of Relevant S Phrases and P Statements	Components of the Qualitative Risk Assessment
Skin defatting (R66)	• Liquid	R66 / EUH066 Repeated exposure may cause skin dryness or cracking	No designated S and P phrases are assigned, though the following phrase may be appropriate: S24 Avoid contact with skin Response: • P280: Wear protective gloves/protect ive clothing/eye protection/fac e protection. • P281: Use personal protective equipment as required.	 Implementation of basic standards of occupational hygiene; Avoid repeated and/or prolonged skin contact with product; Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination promptly; Avoid splashes and spills; Avoidance of contact with contaminated tools and objects; Clean up contamination/spills; Regular cleaning of equipment and work area; Management/supervision to check that the RMMs in place are being used correctly and OCs followed; Training for staff on good practice to prevent / minimise exposures and to report any skin effects that may develop; Good standard of personal hygiene.

For any substance, classified as R66, these measures should be communicated via the safety data sheet by use of the following phrase:

• PPE20: If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes