

# FUELS, DIESEL (mixture)

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830  
 Date of issue: 6/6/2017 Supersedes: 11/11/2015 Version: 10.3

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

#### 1.1. Product identifier

Product form : Mixture  
 Product name : FUELS, DIESEL (mixture)  
 EC No : 269-822-7  
 CAS No : 68334-30-5  
 REACH registration No : TOTAL PETROCHEMICALS & REFINING (01-2119484664-27-0132) - TOTAL RAFFINAGE FRANCE (01-2119484664-27-0042) – TOTAL LINDSEY OIL REFINERY (01-2119484664-27-0054) – TOTAL RAFFINERIE MITTELDEUTSCHLAND (01-2119484664-27-0030) - ZEELAND REFINERY (01-2119484664-27-0022) – TOTAL RAFFINADERIJ ANTWERPEN (01-2119484664-27-0055)  
 Synonyms : 68334-30-5 ; GAZOLE B7 ; GAS OIL ; DIESEL ; FUELS, DIESEL ; GAZOLE NON ROUTIER (FZN) ; GNR (RP) ; TTP (RP) ; GASOLIE ; GAZOLE BASE LOURD TBTS (RP) ; GAZOLE / FIOUL FROID (RP) ; GAZOLE (RP) ; BASE FOD (RP) ; DIESEL / HEATING ; GASOIL DE CHAUFFAGE – GASOIL DE CHAUFFAGE ULTRA ; BASE DML (DGS) ; COMBUSTIBLES DIESELS (mélange) ; GDIN/GDINLS – G29/G29LS – G3/G3LS – G33/G33LS – G35/G35LS – GFRDO/GFDOLS – MDFS - MDO (TRA)  
 Product group : -

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

##### 1.2.1. Relevant identified uses

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 Main use category : Professional use  
 Use of the substance/mixture : Distribution of substance  
 Formulation & (re)packing of substances and mixtures  
 Use as a fuel.  
 For the detailed uses of the product see annex of the safety data sheet

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

REFINING & CHEMICALS BRANCH  
 TOTAL LINDSEY OIL REFINERY Ltd  
 DN40 3LW KILLINGHOLME - UNITED KINGDOM  
 T +44 (0) 1469 563300 - F +44 (0) 1469 563766  
[rm.gb-msds@total.co.uk](mailto:rm.gb-msds@total.co.uk) - [www.total.com](http://www.total.com)

#### 1.4. Emergency telephone number

Emergency number : Emergency call Carechem 24 International :  
 • for English speaking countries: +44 (0) 1235 239 670  
 • for Europe (in local languages): + 33 1 49 00 00 49  
 • for Africa and Middle East: + 44 (0) 1235 239 671 • for China:  
 + 86 10 5100 3039  
 • for Asia Pacific (Hong-Kong, Singapore, Taiwan, Philippines, India, Vietnam, Sri Lanka, Japan, Korea, Malaysia, Indonesia, Thailand) :  
 + 65 3158 1074

Country	Organisation/Company	Address	Emergency number	Comment
	National Poisons Emergency number		08 45 46 47	
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals-24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)	

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

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

Flammable liquids, Category 3 H226  
 Acute toxicity (inhalation:vapour) Category 4 H332  
 Skin corrosion/irritation, Category 2 H315  
 Carcinogenicity, Category 2 H351

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Specific target organ toxicity — Repeated exposure, Category 2 H373

Aspiration hazard, Category 1 H304

Hazardous to the aquatic environment — Chronic Hazard, Category 2 H411

Full text of H statements : see section 16

### Adverse physicochemical, human health and environmental effects

Flammable liquid and vapour. May cause cancer. May be fatal if swallowed and enters airways. Harmful if inhaled. Causes skin irritation. Toxic to aquatic life with long lasting effects.

## 2.2. Label elements

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

Hazard pictograms (CLP) :



Signal word (CLP) :

Danger

Hazard statements (CLP) :

H226 - Flammable liquid and vapour  
H304 - May be fatal if swallowed and enters airways  
H315 - Causes skin irritation  
H332 - Harmful if inhaled  
H351 - Suspected of causing cancer  
H373 - May cause damage to organs through prolonged or repeated exposure  
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (CLP) :

P201 - Obtain special instructions before use  
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
P243 - Take precautionary measures against static discharge  
P262 - Do not get in eyes, on skin, or on clothing  
P273 - Avoid release to the environment  
P281 - Use personal protective equipment as required  
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting  
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
P309+P311 - IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician  
P403+P235 - Store in a well-ventilated place. Keep cool

## 2.3. Other hazards

Other hazards not contributing to the classification :

Product may release Hydrogen Sulphide: a specific assessment of inhalation risks from the presence of hydrogen sulphide in tank headspaces, confined spaces, product residue, tank waste and waste water, and unintentional releases should be made to help determine controls appropriate to local circumstances. Contact with hot material - prevent serious burns. In use, may form flammable/explosive vapour-air mixture. Handling this product may result in electrostatic accumulation. Use proper grounding procedures.

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Fuels, diesel; Gasoil - unspecified	(CAS No) 68334-30-5 (EC No) 269-822-7	> 90	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation:vapour), H332 Skin Irrit. 2, H315 Carc. 2, H351 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
Fatty acid methyl ester (FAME)		< 10	Not classified
Dyes			Not classified

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Additive			Not classified
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Full text of H-statements: see section 16

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

First-aid measures general	: Get medical advice/attention if you feel unwell.
First-aid measures after inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician immediately. If breathing is difficult, give oxygen. If breathing stops, give artificial respiration. Place under medical observation.
First-aid measures after skin contact	: Remove/Take off immediately all contaminated clothing. Wash off immediately and plentifully with water for at least 20 minutes. Exposure to splashing of hot product: Treat the affected part with cold water (by spraying or immersion). Get medical advice/attention.
First-aid measures after eye contact	: Immediately rinse with water for a prolonged period while holding the eyelids wide open. Consult an eye specialist.
First-aid measures after ingestion	: Do not give anything to drink. Do not induce vomiting. Take immediately victim to hospital. If swallowed, rinse mouth with water (only if the person is conscious).

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

Symptoms/effects : Refer to § 11 for more details on effects.

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

Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media	: Carbon dioxide. Dry powder. Foam.
Unsuitable extinguishing media	: Do not use a solid water stream as it may scatter and spread fire.

#### 5.2. Special hazards arising from the substance or mixture

Explosion hazard	: Heavier than air, vapours may travel long distances along ground, ignite and flash back to source. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.
Hazardous decomposition products in case of fire	: Toxic fumes. Carbon oxides (CO, CO <sub>2</sub> ). Aldehydes. Polycyclic-aromatic hydrocarbons (PAH). Carbon (C). Ketones.

#### 5.3. Advice for firefighters

Protection during firefighting	: Complete protective clothing. Do not enter fire area without proper protective equipment, including respiratory protection.
Other information	: Notify fire brigade and environmental authorities. Evacuate unnecessary personnel. Use water spray or fog for cooling exposed containers.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : No flames, no sparks. Eliminate all sources of ignition. Do not smoke. Use special care to avoid static electric charges. Prevent any contact with hot surfaces.

##### 6.1.1. For non-emergency personnel

Protective equipment	: Do not attempt to take action without suitable protective equipment. Gloves. Safety glasses.
Emergency procedures for non-emergency personnel	: Avoid contact with skin and eyes.

##### 6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. Breathing apparatus.
Emergency procedures for emergency responders	: Evacuate unnecessary personnel. Eliminate all ignition sources if safe to do so.

#### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

#### 6.3. Methods and material for containment and cleaning up

For containment	: If spilled, may cause the floor to be slippery. Sweep up or vacuum up the product. Dike for recovery or absorb with appropriate material. Take up liquid spill into absorbent material, e.g.: sand, saw dust. On water, recover/skim from surface and pour out in disposal container.
Other information	: Dispose of contaminated material at an authorized site. Notify authorities if product enters sewers or public waters.

#### 6.4. Reference to other sections

For further information refer to section 13.

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### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. In use, may form flammable/explosive vapour-air mixture. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge during blending and transfer operations. Explosion-free electrical equipment and lighting with earth.
- Hygiene measures : Do not eat, drink or smoke when using this product. Keep away from food and drink. Always wash hands after handling the product. Take off contaminated clothing and wash before reuse.

#### 7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Comply with applicable regulations. Proper grounding procedures to avoid static electricity should be followed.
- Storage conditions : Product may release Hydrogen Sulphide: a specific assessment of inhalation risks from the presence of hydrogen sulphide in tank headspaces, confined spaces, product residue, tank waste and waste water, and unintentional releases should be made to help determine controls appropriate to local circumstances. Store in a well-ventilated place. Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Containers (tanks) should be grounded and provided with adequate pressure relief valve. Explosive vapour/air mixtures may be formed. Isolate, drain, wash and purge the systems or equipments before any maintenance or repair.
- Storage area : Store away from heat. Earth the equipment. Store in a well-ventilated place.
- Packaging materials : Stainless steel.

#### 7.3. Specific end use(s)

Recommended to professional users.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

FUELS, DIESEL (mixture) (68334-30-5)	
DNEL/DMEL (Workers)	
Acute - systemic effects, inhalation	4300 mg/m <sup>3</sup>
Long-term - systemic effects, dermal	2.9 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	68 mg/m <sup>3</sup>
DNEL/DMEL (General population)	
Acute - systemic effects, inhalation	2600 mg/m <sup>3</sup>
Long-term - systemic effects, inhalation	20 mg/m <sup>3</sup>
Long-term - systemic effects, dermal	1.3 mg/kg bodyweight/day

#### 8.2. Exposure controls

##### Appropriate engineering controls:

The substance is flammable and therefore the following conditions must be met to ensure safe use: "Risks are controlled by storage and use under conditions which avoid all ignition sources."

. Ensure adequate ventilation. Safety shower. Eye fountain.

##### Personal protective equipment:

Gas mask with filter type A.

##### Hand protection:

hydrocarbons resistant gloves. In case of repeated or prolonged contact wear gloves. recommended material: fluorinated polymer. polyvinyl alcohol. Layer thickness : all thicknesses. Breakthrough time : > 480 min. EN 374-3. In the event of contact with the liquid: Nitrile rubber gloves. Layer thickness : > 0,30 mm. Breakthrough time : > 60 min. EN 374-3. Gloves may degrade in contact with this chemical.

• Carefully check the glove for cracks or damage before reusing it, dispose of gloves where the penetration time is exceeded. • The penetration time depends on temperature, glove material, thickness and construction.

Penetration time is measured against EN 374 in laboratory conditions corresponding to permanent static contact and is not necessarily representative of the risk in the workplace. Contact the gloves' supplier for further information on the selection and resistance of gloves.

##### Eye protection:

Safety glasses. Do not wear contact lenses

##### Skin and body protection:

Wear suitable protective clothing. Safety foot-wear

##### Respiratory protection:

Where exposure through inhalation may occur from use, respiratory protection equipment is recommended

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### Environmental exposure controls:

Avoid release to the environment. Assure that emissions are compliant with all applicable air pollution control regulations.

### Other information:

Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke during use.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Yellow. red.
Odour	: Hydrocarbon.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: 150 - 380 °C
Flash point	: > 55 °C
Auto-ignition temperature	: > 225 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: < 10 hPa (40°C)
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 820 - 870 kg/m <sup>3</sup>
Solubility	: insoluble in water. Soluble in aromatic hydrocarbons. Soluble in most organic solvents.
Log Pow	: No data available
Viscosity, kinematic	: < 7 mm <sup>2</sup> /s (40°C)
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: 0.5 - 5 vol %

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Flammable liquid and vapour.

### 10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

### 10.3. Possibility of hazardous reactions

Flammable.

### 10.4. Conditions to avoid

No flames, no sparks. Eliminate all sources of ignition. High temperature. Heat.

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity : Inhalation:vapour: Harmful if inhaled.  
Additional information : Inhalation may affect the nervous system causing headache, possibly dizziness, nausea, weakness, loss of coordination and unconsciousness  
May release poisonous hydrogen sulfide

FUELS, DIESEL (mixture) (68334-30-5)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat	> 4.1 mg/l/4h
ATE CLP (vapours)	11 mg/l/4h

Skin corrosion/irritation : Causes skin irritation.  
Serious eye damage/irritation : Not classified  
Additional information : May cause eye irritation  
Respiratory or skin sensitisation : Not classified  
Additional information : Based on available data, the classification criteria are not met  
Germ cell mutagenicity : Not classified  
Based on available data, the classification criteria are not met  
Carcinogenicity : Suspected of causing cancer.  
Reproductive toxicity : Not classified  
Additional information : Based on available data, the classification criteria are not met  
Specific target organ toxicity (single exposure) : Not classified  
Specific target organ toxicity (repeated exposure) : May cause damage to organs through prolonged or repeated exposure.  
Aspiration hazard : May be fatal if swallowed and enters airways.  
Additional information : In case of accidental swallowing, due to its low viscosity, the product may be aspirated into the lung and induce a chemical pneumonitis developing over a few hours

FUELS, DIESEL (mixture) (68334-30-5)	
Viscosity, kinematic	< 7 mm <sup>2</sup> /s (40°C)

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general : Toxic to aquatic life with long lasting effects. Do not allow product to spread into the environment.  
Ecology - air : Product evaporates when in contact with the air.  
Ecology - water : the product spreads out on the surface of the water, a small fraction of the constituents may be dissolved.

FUELS, DIESEL (mixture) (68334-30-5)	
LC50 fish 1	> 3.2 mg/l
EC50 Daphnia 1	> 5.3 mg/l
ErC50 (algae)	> 2.9 mg/l

#### 12.2. Persistence and degradability

FUELS, DIESEL (mixture) (68334-30-5)	
Persistence and degradability	Inherently biodegradable.

#### 12.3. Bioaccumulative potential

No additional information available

#### 12.4. Mobility in soil

FUELS, DIESEL (mixture) (68334-30-5)	
Ecology - soil	Avoid sub-soil penetration. it may pass through the soil and is likely to contaminate ground water.

#### 12.5. Results of PBT and vPvB assessment

No additional information available

#### 12.6. Other adverse effects

No additional information available

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### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Waste treatment methods : Hazardous waste. Dispose of in accordance with relevant local regulations. Use only registered transporters. Do not discharge the product into the environment. Empty containers should be taken for recycling, recovery or waste in accordance with local regulation.

Additional information : Handle empty containers with care because residual vapours are flammable.

### SECTION 14: Transport information

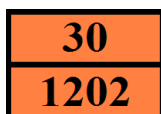
In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
<b>14.1. UN Number</b>				
1202	1202	1202	1202	1202
<b>14.2. UN proper shipping name</b>				
GAS OIL / DIESEL FUEL / HEATING OIL, LIGHT	GAS OIL	Gas oil	DIESEL FUEL	GAS OIL
<b>Transport document description</b>				
UN 1202 GAS OIL / DIESEL FUEL / HEATING OIL, LIGHT, 3, III, (D/E), ENVIRONMENTALLY HAZARDOUS	UN 1202 GAS OIL, 3, III, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS	UN 1202 Gas oil, 3, III, ENVIRONMENTALLY HAZARDOUS	UN 1202 DIESEL FUEL, 3, III, ENVIRONMENTALLY HAZARDOUS	UN 1202 GAS OIL, 3, III, ENVIRONMENTALLY HAZARDOUS
<b>14.3. Transport hazard class(es)</b>				
3	3	3	3	3
<b>14.4. Packing Group</b>				
III	III	III	III	III
<b>14.5. Environmental hazards</b>				
Dangerous for the environment : Yes	Dangerous for the environment : Yes Marine Pollutant : Yes	Dangerous for the environment : Yes	Dangerous for the environment : Yes	Dangerous for the environment : Yes
No supplementary information available				

#### 14.6. Special precautions for user

##### - Overland transport

Classification code (ADR) : F1  
 Special provisions (ADR) : 640M, 363, 664  
 Limited quantities (ADR) : 5I  
 Excepted quantities (ADR) : E1  
 Packing instructions (ADR) : P001, IBC03, LP01, R001  
 Mixed packing provisions (ADR) : MP19  
 Portable tank and bulk container instructions (ADR) : T2  
 Portable tank and bulk container special provisions (ADR) : TP1  
 Tank code (ADR) : LGBV  
 Vehicle for tank carriage : AT  
 Transport category (ADR) : 3  
 Special provisions for carriage - Packages (ADR) : V12  
 Hazard identification number (Kemler No.) : 30  
 Orange plates :



Tunnel restriction code (ADR) : D/E  
 EAC code : 3Y



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### - Transport by sea (IMDG)

Special provisions (IMDG)	: 363
Limited quantities (IMDG)	: 5 L
Excepted quantities (IMDG)	: E1
Packing instructions (IMDG)	: P001, LP01
IBC packing instructions (IMDG)	: IBC03
Tank instructions (IMDG)	: T2
Tank special provisions (IMDG)	: TP1
EmS-No. (Fire)	: F-E
EmS-No. (Spillage)	: S-E
Stowage category (IMDG)	: A

### - Air transport (IATA)

PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y344
PCA limited quantity max net quantity (IATA)	: 10L
PCA packing instructions (IATA)	: 355
PCA max net quantity (IATA)	: 60L
CAO packing instructions (IATA)	: 366
CAO max net quantity (IATA)	: 220L
Special provisions (IATA)	: A3
ERG code (IATA)	: 3L

### - Inland waterway transport

Classification code (ADN)	: F1
Special provisions (ADN)	: 363, 64M
Limited quantities (ADN)	: 5 L
Excepted quantities (ADN)	: E1
Carriage permitted (ADN)	: T
Equipment required (ADN)	: PP, EX, A
Ventilation (ADN)	: VE01
Number of blue cones/lights (ADN)	: 0

### - Rail transport

Classification code (RID)	: F1
Special provisions (RID)	: 363, 640M
Limited quantities (RID)	: 5L
Excepted quantities (RID)	: E1
Packing instructions (RID)	: P001, IBC03, LP01, R001
Mixed packing provisions (RID)	: MP19
Portable tank and bulk container instructions (RID)	: T2
Portable tank and bulk container special provisions (RID)	: TP1
Tank codes for RID tanks (RID)	: LGBV
Transport category (RID)	: 3
Special provisions for carriage – Packages (RID)	: W12
Colis express (express parcels) (RID)	: CE4
Hazard identification number (RID)	: 30

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

Not applicable

## SECTION 15: Regulatory information

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

#### 15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions  
Contains no substance on the REACH candidate list  
Contains no REACH Annex XIV substances



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### 15.1.2. National regulations

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Complies the United States TSCA (Toxic Substances Control Act) inventory  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on the Canadian DSL (Domestic Substances List)  
Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on the Philippines Inventory of Chemicals and Chemical Substances (PICCS)  
Listed on the China Inventory of Existing Chemical Substances (IECSC)  
Listed on NZIoC (New Zealand Inventory of Chemicals)

### 15.2. Chemical safety assessment

A chemical safety assessment has been carried out

## SECTION 16: Other information

Training advice : Training staff on good practice. Manipulations are to be done only by qualified and authorised persons.

Other information : Use good personal hygiene practices.

Full text of H- and EUH-statements:

Acute Tox. 4 (Inhalation:vapour)	Acute toxicity (inhalation:vapour) Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Asp. Tox. 1	Aspiration hazard, Category 1
Carc. 2	Carcinogenicity, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
H226	Flammable liquid and vapour
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H332	Harmful if inhaled
H351	Suspected of causing cancer
H373	May cause damage to organs through prolonged or repeated exposure
H411	Toxic to aquatic life with long lasting effects

### SDS EU (REACH Annex II)

*This information applies to the PRODUCT AS SUCH and conforming to specifications of TOTAL.*

*In case of formulations or mixtures, it is necessary to ascertain that a new danger will not appear.*

*The information contained is based on our knowledge of the product, at the date of publishing and it is given quite sincerely. However the revision of some data is in progress.*

*Users are advised of possible additional hazards when the product is used in applications for which it was not intended. This sheet shall only be used and reproduced for prevention and security purposes.*

*The references to legislative, regulatory and codes of practice documents cannot be considered as exhaustive.*

*It is the responsibility of the person receiving the product to refer to the totality of the official documents concerning the use, the possession and the handling of the product.*

*It is also the responsibility of the handlers of the product to pass on to any subsequent persons who will come into contact with the product. (usage, storage, cleaning of containers, other processes) the totality of the information contained within this safety data sheet and necessary for safety at work, the protection of health and the protection of environment.*



ES05003

Version 1.0

Trade name / designation VHGO

## 1. Exposure scenario

### Industrial, Distribution of substance.

#### Use Descriptor

##### Sector of use

SU3 - Industrial Manufacturing (all)

#### Process Category

PROC1 - Use in closed process, no likelihood of exposure

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

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

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

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

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

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

PROC15 - Use as a laboratory reagent

#### Environmental Release Category

ERC1 - Manufacture of substances

ERC2 - Formulation of mixtures

ERC3 - Formulation in materials

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

ERC5 - Industrial use resulting in inclusion into or onto a matrix

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

ERC6b - Industrial use of reactive processing aids

ERC6c - Industrial use of monomers for manufacture of thermoplastics

ERC6d - Industrial use of process regulators for polymerization processes in production of resins, rubbers, polymers

ERC7 - Industrial use of substances in closed systems

#### Specific Environmental Release Category

ESVOC SpERC 1.1b. v1.

#### Processes, tasks, activities covered

Bulk loading (including marine vessel/barge, rail/road car and IBC loading) of substance within closed or contained systems, including incidental exposures during its sampling, storage, unloading, maintenance and associated laboratory activities.

## 2. Operational conditions and risk management measures

### 2.1. Control of environmental exposure

#### Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

#### Amounts used

:

Fraction of EU tonnage used in region: 0.1

Regional use tonnage (tonnes/year): 2.8E+7

Fraction of Regional tonnage used locally: 0.002

Annual site tonnage (tonnes/year): 5.6E+4

Maximum daily site tonnage (kg/day): 1.9E+5

#### Frequency and duration of use

 Continuous release

Emission Days (days/year): 300

#### Environment factors not influenced by risk management

 -



Local freshwater dilution factor: 10  
Local marine water dilution factor: 100

**Other operational conditions of use 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): 1.0E-6  
Release fraction to soil from process (initial release prior to RMM): 0.00001

**Technical conditions and measures at process level to prevent release**

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

**Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil**

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)  
Prevent discharge of undissolved substance to or recover from onsite wastewater  
No wastewater treatment required  
Treat air emission to provide a typical removal efficiency of (%): 90  
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%):  $\geq 0$   
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%):  $\geq 0$

**Organizational measures to prevent/limit release from the site**

Prevent discharge of undissolved substance to or recover from onsite wastewater. Do not apply industrial sludge to natural soils.  
Sludge should be incinerated, contained or reclaimed.

**Conditions and measures related to municipal sewage treatment plant :**

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 (MSafe) based on release following total wastewater treatment removal (kg/d): 2.9E+6  
Assumed domestic sewage treatment plant flow (m<sup>3</sup>/d): 2000

**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 treatment and disposal of waste should comply with applicable local and/or national regulations

**Remarks**

Additional information on the basis for the allocation of the identified OCs (operating conditions) and RMMs (Risk Management Measures) is contained in Petrorisk file

## 2.2. Control of exposure - Workers / Consumers

**Product characteristics****Physical State**

Liquid, vapour pressure < 0.5 kPa at STP

**Concentration of substance in product**

Covers percentage substance in the product up to 100 % (unless stated differently).

**Frequency and duration of use**

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

**Other operational conditions affecting exposure**

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

<b>2.2a. Control of worker exposure</b>	
<b>Contributing Scenarios</b>	<b>Operational conditions and risk management measures.</b>
<b>General measures applicable to all activities</b>	Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; ensure suitable personal protective equipment is available; clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.
<b>General measures (skin irritants)</b>	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.
<b>General exposures (closed systems)</b>	Handle substance within a closed system.
<b>General exposures (open systems)</b>	Wear suitable gloves tested to EN374.
<b>Process sampling</b>	No other specific measures identified.
<b>Bulk closed loading and unloading</b>	Handle substance within a closed system. Wear suitable gloves tested to EN374.
<b>Bulk open loading and unloading</b>	Wear suitable gloves tested to EN374.
<b>Equipment cleaning and maintenance</b>	Drain down and flush system prior to equipment break-in or maintenance. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
<b>Laboratory activities</b>	No other specific measures identified.
<b>Drum and small package filling</b>	Wear suitable gloves tested to EN374.
<b>Storage</b>	Handle substance within a closed system.

<b>2.2b. Control of consumer exposure</b>	
<b>Product Category(ies)</b>	<b>Operational conditions and risk management measures.</b>
<b>Not applicable</b>	

### **3. Exposure estimation and references**

**Health**

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

**Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

### **4. Guidance for Downstream User to check compliance with the Exposure scenario**

**Health**

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk Management Measures are based on qualitative risk characterisation.

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



ES05004

Version 1.0

Trade name / designation VHGO

## 1. Exposure scenario

### Formulation & (re)packing of substances and mixtures, Industrial.

#### Use Descriptor

##### Sector of use

SU3 - Industrial Manufacturing (all)

SU10 - Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

#### Process Category

PROC1 - Use in closed process, no likelihood of exposure

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

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

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

PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

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

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

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

PROC14 - Production of mixtures or articles by tableting, compression, extrusion, pelletization

PROC15 - Use as a laboratory reagent

#### Environmental Release Category

ERC2 - Formulation of mixtures

#### Specific Environmental Release Category

ESVOC SpERC 2.2.v1.

#### Processes, tasks, activities covered

Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

## 2. Operational conditions and risk management measures

### 2.1. Control of environmental exposure

#### Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

#### Amounts used

:

Fraction of EU tonnage used in region: 0.1

Regional use tonnage (tonnes/year): 2.8E+7

Fraction of Regional tonnage used locally: 0.0011

Annual site tonnage (tonnes/year): 3.0E+4

Maximum daily site tonnage (kg/day): 1.0E+5

#### Frequency and duration of use

 Continuous release

Emission Days (days/year): 300

#### Environment factors not influenced by risk management

 -

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

#### Other operational conditions of use affecting environmental exposure



Release fraction to air from process (initial release prior to RMM): 1.0E-2  
 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 to prevent release

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

#### 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

Prevent discharge of undissolved substance to or recover from onsite wastewater

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

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 of (%):  $\geq 59.9$

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

#### Organizational measures to prevent/limit release from the site

Prevent discharge of undissolved substance to or recover from onsite wastewater. Do not apply industrial sludge to natural soils.

Sludge should be incinerated, contained or reclaimed.

#### Conditions and measures related to municipal sewage treatment plant :

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 (MSafe) based on release following total wastewater treatment removal (kg/d): 6.8E+5

Assumed domestic sewage treatment plant flow (m<sup>3</sup>/d): 2000

#### 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 treatment and disposal of waste should comply with applicable local and/or national regulations

#### Remarks

Additional information on the basis for the allocation of the identified OCs (operating conditions) and RMMs ( Risk Management Measures) is contained in Petrorisk file

## 2.2. Control of exposure - Workers / Consumers

#### Product characteristics

##### Physical State

Liquid, vapour pressure < 0.5 kPa at STP

##### Concentration of substance in product

Covers percentage substance in the product up to 100 % (unless stated differently).

##### Frequency and duration of use

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

##### Other operational conditions affecting exposure

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



<b>2.2a. Control of worker exposure</b>	
<b>Contributing Scenarios</b>	<b>Operational conditions and risk management measures.</b>
<b>General measures applicable to all activities</b>	Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; ensure suitable personal protective equipment is available; clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.
<b>General measures (skin irritants)</b>	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.
<b>General exposures (closed systems)</b>	Handle substance within a closed system.
<b>General exposures (open systems)</b>	Wear suitable gloves tested to EN374.
<b>Process sampling</b>	No other specific measures identified.
<b>Drum/batch transfers</b>	Use drum pumps or carefully pour from container. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
<b>Bulk transfers</b>	Handle substance within a closed system. Wear suitable gloves tested to EN374.
<b>Mixing operations (open systems)</b>	Provide extract ventilation to points where emissions occur. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
<b>Laboratory activities</b>	No other specific measures identified.
<b>Production or preparation of articles by tableting, compression, extrusion or pelletisation</b>	Wear suitable gloves tested to EN374.
<b>Drum and small package filling</b>	Wear suitable gloves tested to EN374.
<b>Equipment cleaning and maintenance</b>	Drain down system prior to equipment break-in or maintenance. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
<b>Storage</b>	Store substance within a closed system.

<b>2.2b. Control of consumer exposure</b>	
<b>Product Category(ies)</b>	<b>Operational conditions and risk management measures.</b>
<b>Not applicable</b>	

### **3. Exposure estimation and references**

**Health**

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

**Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrisk model.

## 4. Guidance for Downstream User to check compliance with the Exposure scenario

### Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk Management Measures are based on qualitative risk characterisation.

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



ES05015

Version 1.0

Trade name / designation VHGO

## 1. Exposure scenario

Use as a fuel, Industrial.

### Use Descriptor

#### Sector of use

SU3 - Industrial Manufacturing (all)

### Process Category

PROC1 - Use in closed process, no likelihood of exposure

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

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

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

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

PROC16 - Using material as fuel sources, limited exposure to unburned product to be expected

### Environmental Release Category

ERC7 - Industrial use of substances in closed systems

#### Specific Environmental Release Category

ESVOC SpERC 7.12a.v1.

### Processes, tasks, activities covered

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

## 2. Operational conditions and risk management measures

### 2.1. Control of environmental exposure

#### Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

#### Amounts used

:

Fraction of EU tonnage used in region: 0.1

Regional use tonnage (tonnes/year): 4.5E+6

Fraction of Regional tonnage used locally: 0.34

Annual site tonnage (tonnes/year): 1.5E+6

Maximum daily site tonnage (kg/day): 5.0E+6

#### Frequency and duration of use

Continuous release

Emission Days (days/year): 300

#### Environment factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

#### Other operational conditions of use 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 RMM): 0.00001

Release fraction to soil from process (initial release prior to RMM): 0

#### Technical conditions and measures at process level to prevent release

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



#### 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

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

Treat air emission to provide a typical removal efficiency of (%): 95

Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%):  $\geq 97.7$

If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%):  $\geq 60.4$

#### Organizational measures to prevent/limit release from the site

Prevent discharge of undissolved substance to or recover from onsite wastewater. Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

#### Conditions and measures related to municipal sewage treatment plant

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 (%): 97.7

Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d):  $5.0E+6$

Assumed domestic sewage treatment plant flow (m<sup>3</sup>/d): 2000

#### Conditions and measures related to external treatment of waste for disposal

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

#### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations

#### Remarks

Additional information on the basis for the allocation of the identified OCs (operating conditions) and RMMs (Risk Management Measures) is contained in Petrorisk file

## 2.2. Control of exposure - Workers / Consumers

#### Product characteristics

##### Physical State

Liquid, vapour pressure < 0.5 kPa at STP

##### Concentration of substance in product

Covers percentage substance in the product up to 100 % (unless stated differently).

##### Frequency and duration of use

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

##### Other operational conditions affecting exposure

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

2.2a. Control of worker exposure	
Contributing Scenarios	Operational conditions and risk management measures.
General measures applicable to all activities	Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; ensure suitable personal protective equipment is available; clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.
General measures (skin irritants)	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.
Bulk transfers	Wear suitable gloves tested to EN374.
Drum/batch transfers	Wear suitable gloves tested to EN374.
Use as a fuel (closed systems)	No other specific measures identified.
Equipment cleaning and maintenance	Drain down system prior to equipment break-in or maintenance. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
Storage	Handle substance within a closed system.

2.2b. Control of consumer exposure	
Product Category(ies)	Operational conditions and risk management measures.
Not applicable	

### 3. Exposure estimation and references

**Health**

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

**Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

### 4. Guidance for Downstream User to check compliance with the Exposure scenario

**Health**

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk Management Measures are based on qualitative risk characterisation.

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



ES05016

Version 1.0

Trade name / designation VHGO

## 1. Exposure scenario

### Use as a fuel, Professional.

#### Use Descriptor

##### Sector of use

SU22 - Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

#### Process Category

PROC1 - Use in closed process, no likelihood of exposure

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

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

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

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

PROC16 - Using material as fuel sources, limited exposure to unburned product to be expected

#### Environmental Release Category

ERC9a - Wide dispersive indoor use of substances in closed systems

ERC9b - Wide dispersive outdoor use of substances in closed systems

#### Specific Environmental Release Category

ESVOC SpERC 9.12.v1.

#### Processes, tasks, activities covered

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

## 2. Operational conditions and risk management measures

### 2.1. Control of environmental exposure

#### Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

#### Amounts used

:

Fraction of EU tonnage used in region: 0.1

Regional use tonnage (tonnes/year): 6.7E+6

Fraction of Regional tonnage used locally: 0.0005

Annual site tonnage (tonnes/year): 3.3E+3

Maximum daily site tonnage (kg/day): 9.2E+3

#### Frequency and duration of use

Continuous release

Emission Days (days/year): 365

#### Environment factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

#### Other operational conditions of use affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 1.0E-4

Release fraction to wastewater from process (initial release prior to RMM): 0.00001

Release fraction to soil from process (initial release prior to RMM): 0.00001





#### Technical conditions and measures at process level to prevent release

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

#### Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)

No wastewater treatment required

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 of (%):  $\geq 0$

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

#### Organizational measures to prevent/limit release from the site

Prevent discharge of undissolved substance to or recover from onsite wastewater. Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

#### Conditions and measures related to municipal sewage treatment plant :

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 (MSafe) based on release following total wastewater treatment removal (kg/d): 1.4E+5

Assumed domestic sewage treatment plant flow (m<sup>3</sup>/d): 2000

#### Conditions and measures related to external treatment of waste for disposal

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

#### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations

#### Remarks

Additional information on the basis for the allocation of the identified OCs (operating conditions) and RMMs ( Risk Management Measures) is contained in Petrorisk file

## 2.2. Control of exposure - Workers / Consumers

#### Product characteristics

##### Physical State

Liquid, vapour pressure < 0.5 kPa at STP

##### Concentration of substance in product

Covers percentage substance in the product up to 100 % (unless stated differently).

##### Frequency and duration of use

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

##### Other operational conditions affecting exposure

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

<b>2.2a. Control of worker exposure</b>	
<b>Contributing Scenarios</b>	<b>Operational conditions and risk management measures.</b>
<b>General measures applicable to all activities</b>	Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; ensure suitable personal protective equipment is available; clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.
<b>General measures (skin irritants)</b>	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.
<b>Bulk transfers</b>	Wear suitable gloves tested to EN374.
<b>Drum/batch transfers</b>	Use drum pumps or carefully pour from container. Wear suitable gloves tested to EN374.
<b>Refuelling</b>	Wear suitable gloves tested to EN374.
<b>Use as a fuel (closed systems)</b>	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Or. Ensure operation is undertaken outdoors.
<b>Equipment cleaning and maintenance</b>	Drain down system prior to equipment break-in or maintenance. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
<b>Storage</b>	Store substance within a closed system.

<b>2.2b. Control of consumer exposure</b>	
<b>Product Category(ies)</b>	<b>Operational conditions and risk management measures.</b>
<b>Not applicable</b>	

### **3. Exposure estimation and references**

**Health**

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

**Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

### **4. Guidance for Downstream User to check compliance with the Exposure scenario**

**Health**

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk Management Measures are based on qualitative risk characterisation.

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



ES05017

Version 1.0

Trade name / designation VHGO

## 1. Exposure scenario

Use as a fuel, Consumer.

### Use Descriptor

#### Sector of use

SU21 - Private households (=general public = consumers)

### Product Category

PC13 - Fuels

### Environmental Release Category

ERC9a - Wide dispersive indoor use of substances in closed systems

ERC9b - Wide dispersive outdoor use of substances in closed systems

#### Specific Environmental Release Category

ESVOC SpERC 9.12c.v1.

### Processes, tasks, activities covered

Covers consumer uses in liquid fuels.

## 2. Operational conditions and risk management measures

### 2.1. Control of environmental exposure

#### Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

#### Amounts used

:

Fraction of EU tonnage used in region: 0.1

Regional use tonnage (tonnes/year): 1.6E+7

Fraction of Regional tonnage used locally: 0.0005

Annual site tonnage (tonnes/year): 8.2E+3

Maximum daily site tonnage (kg/day): 2.3E+4

#### Frequency and duration of use

Continuous release

Emission Days (days/year): 365

#### Environment factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

**Other operational conditions of use affecting environmental exposure** Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)

Release fraction to air from wide dispersive use (regional only): 1.0E-4

Release fraction to wastewater from wide dispersive use: 0.00001

Release fraction to soil from wide dispersive use (regional only): 0.00001

#### Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 94.1

Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d): 3.5E+5

Assumed domestic sewage treatment plant flow (m3/d): 2000



#### Conditions and measures related to external treatment of waste for disposal

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

#### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations

#### Remarks

Additional information on the basis for the allocation of the identified OCs (operating conditions) and RMMs ( Risk Management Measures) is contained in Petrorisk file

## 2.2. Control of exposure - Workers / Consumers

#### Product characteristics

##### Physical State

Liquid, vapour pressure > 10 kPa at STP

##### Concentration of substance in product

Covers percentage substance in the product up to 100 % (unless stated differently).

##### Frequency and duration of use

Unless otherwise stated. Covers use amounts up to (g) : 37500g . Covers skin contact area up to (cm2): 420.

##### Other operational conditions affecting exposure

Unless otherwise stated. Covers use up to (times/day of use): .

. Covers exposure up to (hours/event): 2.

### 2.2a. Control of worker exposure

Contributing Scenarios	Operational conditions and risk management measures.
not applicable	

<b>2.2b. Control of consumer exposure</b>	
<b>Product Category(ies)</b>	<b>Operational conditions and risk management measures.</b>
<b>PC13 - Fuels Liquid: Automotive Refuelling</b>	Unless otherwise stated Covers concentrations up to (%):100 Covers use up to (days/year):52 Covers use up to (times/day of use):1 Covers skin contact area up to (cm2): 210 For each use event, covers use amounts up to (g):37500 Covers outdoor use Covers use in room size of (m3):100 For each use event Covers exposure up to (hours/event):0.05 No specific risk management measure identified beyond those operational conditions stated
<b>PC13 - Fuels Liquid Garden Equipment - Use</b>	Unless otherwise stated Covers concentrations up to (%):100 Covers use up to (days/year):26 Covers use up to (times/day of use):1 For each use event, covers use amounts up to (g):750 Covers outdoor use Covers use in room size of (m3):100 For each use event Covers exposure up to (hours/event):2.0 No specific risk management measure identified beyond those operational conditions stated
<b>PC13 - Fuels Liquid: Garden Equipment - Refueling</b>	Unless otherwise stated Covers concentrations up to (%): 100 Covers use up to (times/day of use):1 Covers use up to (days/year):26 Covers skin contact area up to (cm2): 420 For each use event, covers use amounts up to (g):750 Covers use in a one car garage (34 m3) under typical ventilation Covers use in room size of (m3):34 For each use event Covers exposure up to (hours/event):0.03 No specific risk management measure identified beyond those operational conditions stated

### 3. Exposure estimation and references

**Health**

The ECETOC TRA tool has been used to estimate consumer exposures, consistent with the content of ECETOC report #107 and the Chapter R15 of the IR&CSA TGD Where exposure determinants differ to these sources, then they are indicated

**Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

### 4. Guidance for Downstream User to check compliance with the Exposure scenario



**Health**

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

**Environment**

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