SECTION 1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1. Product identifier

- **Trade name:** DISTILLATE MARINE FUELS
  F DMA
  F DMA BLUE
- **Chemical name:** Fuels, diesel fuel
- **Index no.:** 649-224-00-6
- **EC no.:** 269-822-7
- **CAS no.:** 68334-30-5
- **Registration no.:** 01-2119484664-27-0114
- **UFI:** Not applicable.
- **Form:** -
- **Product code:** 1000055, 1002720

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

- **Relevant identified uses:** **Industrial:** Manufacture of Substances, Formulation & (Re)Packing of substances, Use as a fuel
  Professional: Use as a fuel
  Consumer: Use as a fuel
- **Uses advised against:** The uses that are in the list above are relevant.
  Other uses are not recommended unless an assessment that proves that the related risks are controlled has been conducted before starting that use.

1.3. Details of the supplier of the safety data sheet

- **Manufacturer/supplier:** **INA-Industrija nafte, d.d.**

Address: Av. V. Holjevca 10
pp 555, 10002 Zagreb, HRVATSKA

Phone: 00-385-1-6450-842 / 00-385-1-6451-075 (24 h)

Fax: 00-385-1-6452-050

Sustainable Development and Health, Safety and Environment **Phone:** 00-385-1-6450-803

- **email address of a competent person responsible for the safety data sheet:** sds@ina.hr

1.4. Emergency Telephone Number

- **Emergency Service Telephone Number:** **112**

Ministry of the Interior	00-385-1-6192-929
Directorate for civil protection	00-385-1-4551-792
Operative centre for civil protection	00-385-1-4814-911

e-mail: occz@civilna-zastita.hr

- Medical Information Telephone Number: 00-385-1-23-48-342

SECTION 2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 (CLP):

Flam. Liquid 3: H226

Asp. Tox. 1: H304

Skin Irrit. 2: H315

Acute Tox 4: H332

Carc.2: H351

STOT (RE) 2: H373 (thymus, liver, bone marrow)

Aquatic Chronic 2: H411

Full text of H-phrases: see section 16.

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 (CLP)

Hazard pictograms:

GHS02 GHS07 GHS08 GHS09

Signal word: **Danger**

Hazard statements (H):	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 thymus, liver, bone marrow through prolonged or repeated exposure.
	H411	Toxic to aquatic life with long lasting effects.
Precautionary statements (P):	P210	Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
	P260	Do not breathe dust/fume/gas/mist/vapours/spray.
	P273	Avoid release to the environment.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
	P301+ P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
	P331	Do NOT induce vomiting.

For the purpose of CLP gas oils, diesel and light heating oils having a flash point between ≥ 55°C and ≤ 75°C may be regarded as Category 3.

2.3. Other hazards

No data available.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

-Substance:	X		Mixture:		

- Components contributing to product hazardousness:

Substance name	Substance identification			[%]	Classification according to Regulation (EC) No 1272/2008 (CLP)
	CAS no.	EC no.	Registration no. (REACH)		
Fuels, diesel	68334-30-5	269-822-7	01-2119484664-27-0114	≤100	Flam. Liquid 3: H226 Asp. Tox. 1: H304 Skin Irrit. 2: H315 Acute Tox 4: H332 Carc.2: H351 STOT Rep.Exp.2: H373 (thymus, liver, bone marrow) Aquatic Chronic 2: H411

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures

- general information: In case of ingestion, always assume aspiration into the lungs has occurred, accompanied by the pulmonary oedema hazard. Show the label on the packaging or the SDS.

- after inhalation: Remove the person from dangerous area to fresh air.

  In case of dizziness, nausea, headache, and permanent complaints immediately seek medical attention.

  In case of fainting transport in lateral position to hospital, paying attention to the free passing of the air thorough the respiratory tract.

  In case of difficulty in breathing or respiratory arrest, open airways, initiate resuscitation (heart massage and artificial respiration) and immediately seek medical attention.

- after skin contact: Remove soaked clothes and shoes and flush the sites of contact thoroughly with water and soap for at least 15 to 20 minutes. In case redness occurs seek medical advice.

- after eye contact: Remove contact lenses and flush the eyes with running water for at least 15 minutes. In case of irritation, blurred vision and swelling immediately seek medical attention.

- after ingestion:	Do NOT induce vomiting! Do not give anything by mouth. Always assume aspiration into the lungs has occurred. If vomiting occurs, keep the head below the level of hips in order to prevent penetration into the lungs. Immediately seek medical attention.
- personal protective equipment for first aid responder:	No data available.

4.2 Most important symptoms and effects, both acute and delayed

- after inhalation:	Longer inhalation of fumes can cause a sense of intoxication, headache, nausea, vomiting.
- after skin contact:	Redness, dermatitis.
- after eye contact:	Irritating effect with possible occurrence of eye redness.
- after ingestion:	May cause lung damage if swallowed. Danger of pulmonary oedema due to aspiration in the lungs.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Only qualified medical personnel should administer oxygen.

SECTION 5. FIREFIGHTING MEASURES

5.1 Extinguishing media

- SUITABLE:	Air foam, dry powder, CO_2, water mist, auxiliary media (dry sand, soil, or clay).
- UNSUITABLE:	Water jet.

5.2 Special hazards arising from the substance or mixture:

- Hazardous combustion products:	Incomplete combustion of hydrocarbons can produce smoke containing carbon and sulphur oxides.
- Hydrocarbon vapours:	Vapours are heavier than air and may settle to ground level and in dents; they may spread away from the site of accident and cause explosion and fire.

5.3 Advice for firefighters:

- Firefighting measures for special hazards:	Eliminate all sources of ignition and call the fire brigade. Pay special attention to risk of explosive vapour-air mixture formation at temperatures above the flash point.
- Special firefighting methods:	Use of water mist and water spray for cooling the surfaces exposed to heat and for protection of persons. Only persons trained in firefighting may use the water spray (sprayed water). A small fire is extinguished with auxiliary media - (dry) sand or soil.

- Special protective equipment for firefighters:	Self-contained open circuit compressed air breathing apparatus in accordance with HRN EN 137. Wear protective clothing for firefighters (intervention suit) in accordance with HRN EN 469.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment:	Use personal protective equipment listed in section 8 and remove unprotected persons from the affected area immediately.
- Accident prevention procedures:	Ventilate thoroughly the premises at risk. Display a visible sign prohibiting entrance, use of open flame and sparking devices. Do not smoke.
- Procedure in case of accident:	Stand upwind from the spill site. Prevent product spread if this can be done in a safely manner. Identify the area of danger and prevent leaks and spills into watercourses, channels, drainage systems and soil by digging a protective ditch, setting up partitions made of bags of dry sand, soil, or clay. Ensure good ventilation. In case of larger spills notify the at the number 112.
6.1.2. For emergency responders:	Insulate the spill area. Use personal protective equipment listed in section 8 and remove unprotected persons from the affected area immediately.

6.2 Environmental precautions:

Prevent product spread if this can be done in a safely manner. Insulate the spill area. Mark out the contaminated area with signs and prevent leaks and spills into watercourses, channels, drainage systems and soil by digging a protective ditch, setting up partitions made of bags of dry sand, soil, or clay.

6.3 Methods and material for containment and cleaning up

6.3.1. For bunding, covering and capping:	Dig a protective ditch around the discharge area, enclose with bags filled with dry sand, soil, or clay.

6.3.2. For cleaning up:	Pump the product from the damaged tank into an empty tank - container with the pump designed for use in a potentially explosive atmosphere. Absorb the remainders with absorbents (sawdust, sand, mineral adsorbents, or other inert materials). Store the waste material and contaminated surface layer of soil that was removed in tightly closed containers in well-ventilated premises until disposal. Hand over for disposal to legal entities for hazardous waste disposal, authorized by the Ministry in charge of environmental protection.
6.3.3. Other information:	In order to protect the local sea area and port infrastructure against pollution, vessels shall be surrounded by a safety barrier. In case of major spills, notify the Port Authority and the National Protection and Rescue Directorate at the number 112.

6.4 Reference to other sections: See sections 8 and 13.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

7.1.1 Safe handling advice:	Eliminate all possible sources of ignition. Decant only in areas properly designed for the purpose according to regulations. Use functioning equipment and devices and follow technical safety measures in accordance with the training received. Take special care of connection points to prevent possible leaks. Follow occupational safety and fire safety measures. Small amount of hydrogen sulphide (H_2S), a highly toxic gas, may be present, especially in the headspace of containers. Before entering storage tanks and commencing any operation in a confined area, check oxygen content, hydrogen sulphide (H_2S) and flammability.
7.1.2 Advice on general occupational hygiene:	Do not smoke, eat, or drink in a room where this product is handled. Avoid inhalation and contact with skin and eyes. Use personal protective equipment listed in Section 8.

7.2 Conditions for safe storage, including any incompatibilities

- SUITABLE:	Properly built and equipped containers. Tank or containers in ships should be placed in cold and adequately ventilated area.
- TO BE AVOIDED:	Avoid storing with other chemicals, especially flammable ones (oxidants, acids). Do not use sparking tools and equipment in storage area.

- Packaging materials

- RECOMMENDED:	Prescribed for that purpose.
- NOT SUITABLE:	Any other.

7.3 Specific end use(s):

No data available.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

Hazardous substance (CAS No.)	Occupational exposure limit values/short term values (OEL/STEL)		Biological limit values
	ppm	mg/m^3	
No data available.	-	-	-

- Monitoring procedures:

8.2. Exposure controls

- Summary of risk management measures: See Section 7.

8.2.1 Occupational exposure controls

- Description of operating procedure and technological control:

Ensure good ventilation/exhaust in work area. Provide a decontamination sprayer for the eyes and face. Adopt personal hygiene measures: wash the hands after contact with the fuel, especially before eating, drinking and/or smoking. Regularly maintain and wash the clothing and equipment after use to remove dirt. Properly dispose of the contaminated clothing and equipment. Maintain cleanliness in accordance with good practice. Educate the employees on the hazards and control measures. Test and maintain the equipment used when handling the fuel: for example, personal protective equipment, ventilation system. Do not swallow. If swallowed, seek medical attention.

8.2.2 Personal protective equipment

- respiratory protection:	If the concentration is higher than permitted, use a protective half mask or full-face mask (HRN EN 136/AC:2006) with a combined filter for organic gases/vapours (filter type A-P, boiling point >60 °C), a threaded connection complying with the HRN EN 14387 and HRN EN 143 standards (boiling point > 60 °C). During the fire, use a self-sustained open-circuit compressed-air breathing apparatus (HRN EN 137).
- hand protection:	Personal hand hygiene is the most important element. The gloves shall only be worn on clean hands. After using the gloves, the hands shall be washed and dried. The contaminated gloves shall not be used. For continuous use, wear protective gloves made of stable and impervious material such as nitrile rubber or Viton (HRN EN 374).
- eye/face protection:	Protective goggles or a visor at lower concentrations (HRN EN 166), protective mask at higher concentrations.
- skin and body protection:	Use chemical resistant gloves, clothing, and apron (where there is a risk of splashing).

- Special hygienic and safety precautions: Maintain the prescribed hygiene standards for working with hazardous substances. Remove contaminated clothing and footwear. Inspect the equipment and devices regularly and maintain with running water. Do not smoke, eat, and drink when handling the product. Wash hands before breaks and at the end of work.

8.2.3 Environmental exposure controls

- Summary of risk management measures: No data available.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

- physical state:		liquid
- colour:		Clear, transparent (F DMA), green or blue (F DMA BLUE)
- odour:		very weak
- odour threshold:		No data available.
- pH value (indicate conc. and temp.):		Not applicable.
- melting point/freezing point:	°C	No data available.
- boiling point/boiling range:	°C	>150
- flash point:	°C	≥60
- evaporation rate:		No data available.
- flammability (solid, gas):		Need to be heated to ignite.
- explosive limits:	vol. %	0,6 - 6,5 (from literature)
- vapour pressure at 40 °C:	kPa	No data available.
- vapour density at 15°C:	kg/m^3	No data available.
- relative density:		≤ 0,89
- density at 15°C:	kg/m^3	≤ 890
- solubility (indicate solvent):	g/L	No data available.
- solubility in water:	g/L	No data available.
- partition coefficient n-octanol / water	logPow	No data available.
- auto ignition temperature:	°C	250 - 460 (from literature)
- decomposition temperature:	°C	No data available.
- kinematic viscosity at 40 °C:	mm^2/s	2,000 – 6,000
- oxidizing properties:		Not applicable.
- conductivity:	pS/m	No data available.

9.2. Other information:

No data available.

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity:	Stable under recommended handling and storage conditions.
10.2 Chemical stability:	Stable under recommended handling and storage conditions.
10.3 Possibility of hazardous reactions:	Potentially hazardous reactions are not known.
10.4 Conditions to avoid:	Sources of heat, flame, spark.
10.5 Incompatible materials:	Strong oxidants.
10.6 Hazardous decomposition products:	None in standard operating conditions and in proper storage; however thermal decomposition may generate harmful gases: (including carbon-monoxide, CO), sulphur and nitrogen oxides.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008:

- Acute toxicity

- oral (LD_{50}):	>5000 mg/kg $_{\text{body weight}}$ (rat)
- inhalation (LC_{50}):	≥4,1 mg/l (rat)
- dermal (LD_{50}):	>5 ml/kg $_{\text{body weight}}$ (rabbit)

- Corrosion/Irritation

- skin:	Redness, dermatitis (H 315).

- Repeated dose toxicity No data available.

- Serious damage/irritation

- eyes:	Irritating effect; may cause redness.

- Sensitisation

- skin:	Sensitive people may experience redness and dermatitis.
- respiratory tract:	No data available.
- Germ cell mutagenicity:	Not classified.
- Carcinogenicity:	Suspected of causing cancer (H351).
- Reproductive toxicity:	No data available.
- STOT (SE):	No data available.
- STOT (RE):	May cause damage to thymus, liver, bone marrow through prolonged or repeated exposure (H373).
- Aspiration hazard:	May be fatal if swallowed and enters airways (H304).
- Information on likely routes of exposure:	No data available.
- Symptoms related to the physical, chemical and toxicological characteristics:	Long-term inhalation of vaporous causes a sense of intoxication, headache, urge to vomiting, fainting.

- Delayed and immediate effects as well as chronic effects from short and long-term exposure:	No data available.

11.2. Information on other hazards

- Endocrine disrupting properties:	No data available.
- Other information:	No data available.

SECTION 12. ECOLOGICAL INFORMATION

12.1. Toxicity

- to aquatic organisms:	LL50= 2 mg/l (Daphnia magna)
- to ground organisms:	No data available.
- to plants and land animals:	No data available.

12.2. Persistence and degradability

- biodegradation:	Not readily biodegradable.
- other degradation processes:	Some components evaporate and degrade when exposed to light.
- degradation in wastewater:	No data available.

12.3. Bioaccumulative potential

- bio-concentration factor (BCF):	No data available.

12.4. Mobility in soil

Method: No data available.

- Known or predicted distribution in environmental compartments:	No data available.
- surface tension:	No data available.
- absorption/desorption:	No data available.
- other physical and chemical properties:	See Section 9.

12.5. Results of PBT and vPvB assessment

- data from chemical safety report:	No data available.

12.6. Endocrine disrupting properties: No data available.

12.7. Other adverse effects: Toxic to aquatic life with long lasting effects. Floats on water surface forming oily spots which spread fast even without influence of wind and currents.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods: Waste shall be handed over to the person authorised for waste collection, disposal or recovery. If possible, the waste shall be recovered.

- Waste codes: 13 07 01*

- Waste from residues:	There is no classic waste from this product except in case of unintentional release. For such cases see Section 6.
- Contaminated packaging:	Not applicable.
- Relevant provisions:	Act on Waste Management, Regulation on waste catalogue, Ordinance on waste management.

SECTION 14. TRANSPORT INFORMATION

14.1 UN number or ID number: 1202

14.2 UN proper shipping name: Gas oil or diesel fuel or fuel oil, light

14.3 Transport hazard class(es)

ADR/RID/ADN/ICAO/IATA: 3

IMDG: 3

14.4 Packing group

ADR/RID/ADN/IMDG/ICAO/IATA: III

14.5 Environmental hazards

ADR, RID, ADN, ICAO/IATA: toxic to aquatic life with long lasting effects

IMDG: maritime pollutant

14.6 Special precautions for user

ADR

Transport category: 3

Vehicle for tank carriage:

FL (flash point not greater than 61 °C)

AT (flash point from 61°C but not larger than 100 °C)

Tank code:

LGBF (flash point not greater than 61 °C)

LGBV (flash point from 61°C but not larger than 100 °C)

Tunnel restriction code: (D/E)

Label: 3

Classification code: F1

Hazard identification: 30

Special provisions: 640 K-L-M, 664, S2

RID

Transport category: 3

Tank code:

LGBF (flash point not greater than 61 °C)

LGBV (flash point from 61°C but not larger than 100 °C)

Label: 3

Classification code: F1

Hazard identification: 30

Special provisions: 640 K-L-M, W12

ADN

Label: 3

Additional requirements/Remarks: *see 3.2.3.3 ADN

IMDG

Subsidiary risk: maritime pollutant

Group of the cargo: category A

Dangers: 3+(N1,N2,N3,CMR,F,S)
Equipment required: PP
Classification code: F1
Carriage permitted: T
Type of tank vessel: N/3
Anti-explosion protection required: no
Maximum degree of filling in %: 97

Special provisions: 363
EmS: F-E, S-E
Segregation group: category A

ICAO

Label: 3
Cargo IMP code: RFL
Passenger and cargo aircraft: YES
EQ: E1 ; Ltd Qty: 10L; Pkg Inst: Y344
Max Net Qty/Pkg: 60L ; Pkg Inst: 355
Cargo aircraft only: YES
Pkg Inst: 366; Max Net Qty/Pkg: 220L
ERG code: 3L

14.7 Maritime transport in bulk according to IMO instruments

Trade name:	-
Pollution category (according to MARPOL, Annex II):	-
Vessel type (according to IBC Code):	-
Special and operative requirements (according to IBC Code):	-

15. REGULATORY INFORMATION

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

- Applicable EU regulations: Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) and Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (CLP); Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 (REACH).

- Applicable national regulations: Act on Chemicals; Ordinance on workers protection to dangerous chemicals exposure during work, exposure limit values and biological limit values; Act on Waste Management, Regulation on waste catalogue, Ordinance on waste management.

- Authorization information: -
- Restriction information: -

15.2 Chemical Safety Assessment

- Chemical Safety Assessment carried out (CSA):	YES	X	NO

16. OTHER INFORMATION

Revision indicators

Section:	Subject of change:
1	Name and product code added
5	Updated fire extinguisher media data.
9	Updated physical and chemical properties data.

Other changes related to alignment with Commission Regulation (EU) 2020/878.

Full text of H- phrases

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.

Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS number	Chemical Abstract Service number
CLP	Classification, Labelling and Packaging of substances and mixtures
CSA	Chemical Safety Assessment
CSR	Chemical Safety Report
EC number	European Community number for identification of chemical substances commercially available in the EU
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code transport
LC50	Lethal concentration for 50% of tested organisms
LD50	Lethal concentration for 50% of tested organisms (medium lethal concentration)
OIN	Oil industry notes

PBT	Persistent, bioaccumulative and toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Regulations Concerning the International Transport of Dangerous Goods by Rail
STOT (SE)	Specific Target Organ Toxicity (Single Exposure)
STOT (RE)	Specific Target Organ Toxicity (Repeated Exposure)
UFI	Unique formula identifier (according to section 5. Part A of Annex VIII of Regulation (EU) no. 1272/2008)
UVCB	Chemical Substances of Unknown or Variable Composition, Complex Reaction Products and Biological Materials
vPvB	Very persistent and very bioaccumulative

Statement:

This SDS is in compliance with the EU Regulation No. 1907/2006 and No. 1272/2008 of the European Parliament and the Council. It contains important user health and safety and environmental protection information. The information provided herein is not a substitute for any specification of quality and should not be deemed as a guarantee of the adequacy and applicability of this product for any purpose whatsoever. All information provided herein is based on our current knowledge and compliant with applicable legal regulations. The user is responsible for adherence to relevant legal regulations.

Data source:

1. www.hzt.hr
2. http://echa.europa.eu/hr
3. Handbook – Identified Uses of Petroleum Substances 2021 Dossier Update, Concawe, September 2021
4. Hazard Classification and Labelling of Petroleum Substances in the EEA - 2021, Concawe
5. First Aid Reference Guide – 2021 update

APPENDIX: EXPOSURE SCENARIOS ACCORDING TO CHEMICAL SAFETY REPORT

Appendix: Exposure Scenario

Identified Use Description and Exposure Scenario Number Key

IU	Category	Identified Use Name	Sector	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Article Category (AC)	Environmental Release Category (ERC)	Specific Environmental Release Category (SpERC)
1	Vacuum gas oils, hydrocracked gas oils and	01 – Manufacture of Substance	Industrial	3, 8, 9	NA	1, 2, 3, 4, 8a, 8b,15	NA	1	ESVOC SpERC 1.1.v1
4	Vacuum gas oils, hydrocracked gas oils and distillate fuels	02 – Formulation & (Re)packing of Substances and Mixtures	Industrial	3, 10	NA	1, 2, 3, 4, 5, 8a, 8b, 9, 14, 15	NA	2	ESVOC SpERC 2.2.v1
15	Vacuum gas oils, hydrocracked gas oils and distillate fuels	12a – Use as a Fuel: Industrial	Industrial	3	NA	1, 2, 3, 8a, 8b, 16	NA	7	ESVOC SpERC 7.12a.v1
16	Vacuum gas oils, hydrocracked gas oils and distillate fuels	12b – Use as a Fuel: Professional	Professional	22	NA	1, 2, 3, 8a, 8b, 16	NA	9a, 9b	ESVOC SpERC 9.12b.v1
17	Vacuum gas oils, hydrocracked gas oils and distillate fuels	12c – Use as a Fuel: Consumer	Consumer	21	13	NA	NA	9a, 9b	ESVOC SpERC 9.12c.v1

1. Manufacture of Gas Oils (vacuum, hydrocracked & distillate fuels) H304 / non-H304, H315, H332, H351, H373, H411 – Industrial

Section 1 Exposure Scenario Title Gas Oils (vacuum, hydrocracked & distillate fuels) H304 / non-H304, H315, H332, H351, H373, H411	
Title	
Manufacture of Substance	
Use Descriptor	
Sector(s) of Use	3, 8, 9
Process Categories	1, 2, 3, 4, 8a, 8b, 15
Environmental Release Categories	1
Specific Environmental Release Category	ESVOC SpERC 1.1.v1
Processes, tasks, activities covered	
Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling / recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).	
Assessment Method	
See Section 3.	
Section 2 Operational conditions and risk management measures	
Section 2.1 Control of worker exposure	
Product characteristics	
Physical form of product	Liquid With potential for aerosol generation [CS138]
Vapour pressure (kPa)	Liquid, vapour pressure <0.5 kPa at STP. OC3.
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	Operation is carried out at elevated temperature (> 20°C above ambient temperature). OC7. Assumes a good basic standard of occupational hygiene is implemented G1.
Contributing Scenarios	**Specific Risk Management Measures and Operating Conditions**
General measures applicable to all activities CS135	Control any potential exposure using measures such as contained systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of exposure potential and aware of basic actions to 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; provide regular health surveillance as appropriate; identify and implement corrective actions. G25
General measures (skin irritants) G19	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 skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin effects that may develop. E3
General exposures (Closed systems) CS15	Handle substance within a closed system E47
General exposures (Open systems) CS16	Wear suitable gloves tested to EN374 PPE15
Process Sampling CS2	No other specific measures identified EI20

Bulk closed loading and unloading CS501	Handle substance within a closed system E47 Wear suitable gloves tested to EN374 PPE15
Bulk open loading and unloading CS503	Wear suitable gloves tested to EN374 PPE15
Equipment cleaning and maintenance CS39	Drain down system prior to equipment break-in or maintenance. E65. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. PPE16
Laboratory activities CS36	No other specific measures identified EI20
Bulk storage CS85	Store substance within a closed system. E84

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/year)	2.8e7
Fraction of Regional tonnage used locally	0.021
Annual site tonnage (tonnes/year)	6.0e5
Maximum daily site tonnage (kg/day)	2.0e6
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)	1.0e-2
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)	0.0001
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]. Prevent discharge of undissolved substance to or recover from onsite wastewater [TCR14]. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required [TCR9].	
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 (%)	90.3
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%)	0
Organisation measures to prevent/limit release from site	
Prevent discharge of undissolved substance to or recover from wastewater [OMS1]. 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 treatment (%)	94.1
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94.1
Maximum allowable site tonnage (MS_{safe}) based on release following total wastewater treatment removal (kg/d)	3.3e6
Assumed domestic sewage treatment plant flow (m^3/d)	10000

Conditions and measures related to external treatment of waste for disposal
During manufacturing no waste of the substance is generated to treat [ETW4].
Conditions and measures related to external recovery of waste
During manufacturing no waste of the substance is generated to recover [ERW2].
Section 3 Exposure Estimation
3.1. Health
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. G21.
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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. G22. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. G32. 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 (http://cefic.org/en/reach-for-industries-libraries.html). Scaled assessments for EU refineries have been performed using site-specific data and are attached in PETRORISK file attached to IUCLID section 13 – "Site-Specific Production" worksheet [DSU6]. For refinery sites where scaling revealed a condition of unsafe use (i.e., RCRs > 1), a site-specific chemical safety assessment was required [DSU8]. Taking into account the findings of the air- monitoring evaluation on benzene included as the Tier 2 analysis in the Low Boiling Point Naphtha category, the default "Air Removal Efficiency" of 90 % included in the SPERC has been shown to be over-conservative and that 95 % efficiency can safely be claimed in a Tier II analysis. On this basis, the Tier 2 analysis demonstrates that no refineries have RCRs>1 (see PETRORISK file in IUCLID section 13 – "Tier 2 Site Specific Production worksheet").

2. **Formulation & (Re)packing of Gas Oils (vacuum, hydrocracked & distillate fuels) H304 / non-H304, H315, H332, H351, H373, H411 – Industrial**

Section 1 Exposure Scenario Title Gas Oils (vacuum, hydrocracked & distillate fuels) H304 / non-H304, H315, H332, H351, H373, H411	
Title	
Formulation & (Re)packing of Substances and Mixtures	
Use Descriptor	
Sector(s) of Use	3, 10
Process Categories	1, 2, 3, 4, 5, 8a, 8b, 9, 14, 15
Environmental Release Categories	2
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, tabletting, compression, pelletization, extrusion, large and small scale packing, maintenance, sampling and associated laboratory activities	
Assessment Method	
See Section 3.	
Section 2 Operational conditions and risk management measures	
Section 2.1 Control of worker exposure	
Product characteristics	
Physical form of product	Liquid With potential for aerosol generation [CS138]
Vapour pressure (kPa)	Liquid, vapour pressure <0.5 kPa at STP. OC3.
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.
Contributing Scenarios	**Specific Risk Management Measures and Operating Conditions**
General measures applicable to all activities CS135	Control any potential exposure using measures such as contained systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of exposure potential and aware of basic actions to 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; provide regular health surveillance as appropriate; identify and implement corrective actions. G25
General measures (skin irritants) G19	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 skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin effects that may develop. E3
General exposures (closed systems) CS15	Handle substance within a closed system E47
General exposures (open systems) CS16	Wear suitable gloves tested to EN374 PPE15
Batch processes at elevated temperatures [CS136]	Provide extract ventilation to points where emissions occur E54

Process sampling CS2	No other specific measures identified EI20
Drum and batch transfers CS8	Use drum pumps or carefully pour from container E64 Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training PPE16
Bulk transfers CS14	Handle substance within a closed system E47 Wear suitable gloves tested to EN374 PPE15
Mixing operations (open systems) CS30	Provide extract ventilation to points where emissions occur E54 Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training PPE16
Production or preparation or articles by tabletting, compression, extrusion or pelletisation CS100	Wear suitable gloves tested to EN374 PPE15
Drum and small package filling CS8	Wear suitable gloves tested to EN374 PPE15
Laboratory activities CS36	No other specific measures identified EI20
Equipment clean down and maintenance CS39	Drain down system prior to equipment break-in or maintenance. E65. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. PPE16
Storage CS67	Store substance within a closed system. E84

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/year)	2.8e7
Fraction of Regional tonnage used locally	0.0011
Annual site tonnage (tonnes/year)	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 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 (after typical onsite RMMs, consistent with EU Solvent Emissions Directive requirements)	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 (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].	
Prevent discharge of undissolved substance to or recover from onsite wastewater [TCR14]. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required [TCR9].	
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 (%)	59.9
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%)	0

Organisation measures to prevent/limit release from site	
Prevent discharge of undissolved substance to or recover from wastewater [OMS1]. 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 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)	6.8e5
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].	
Section 3 Exposure Estimation	
3.1. Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. G21.	
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	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. G22. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. G32. 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 (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].	

3. Use of Gas Oils (vacuum, hydrocracked & distillate fuels) H304 / non-H304, H315, H332, H351, H373, H411 as a Fuel – Industrial

Section 1 Exposure Scenario Title Gas Oils (vacuum, hydrocracked & distillate fuels) H304 / non-H304, H315, H332, H351, H373, H411	
Title	
Use as a Fuel	
Use Descriptor	
Sector(s) of Use	3
Process Categories	1, 2, 3, 8a, 8b, 16
Environmental Release Categories	7
Specific Environmental Release Category	ESVOC SpERC 7.12a.v1
Processes, tasks, activities covered	
Covers the use as a fuel (or fuel additives and additive components) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.	
Assessment Method	
See Section 3.	
Section 2 Operational conditions and risk management measures	
Section 2.1 Control of worker exposure	
Product characteristics	
Physical form of product	Liquid With potential for aerosol generation [CS138]
Vapour pressure (kPa)	Liquid, vapour pressure <0.5 kPa at STP. OC3.
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.
Contributing Scenarios	**Specific Risk Management Measures and Operating Conditions**
General measures applicable to all activities CS135	Control any potential exposure using measures such as contained systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of exposure potential and aware of basic actions to 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; provide regular health surveillance as appropriate; identify and implement corrective actions. G25
General measures (skin irritants) G19	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 skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin effects that may develop. E3
Bulk transfers CS14	Wear suitable gloves tested to EN374. PPE15
Drum/batch transfers CS8	Wear suitable gloves tested to EN374.PPE15
Use as a fuel (closed systems) GEST_12I, CS107	No other specific measures identified EI20

Equipment cleaning and maintenance CS39	Drain down system prior to equipment break-in or maintenance E65 Wear chemically resistant gloves (tested to type EN374) in combination with 'basic' employee training PPE16
Storage CS67	Handle substance within a closed system. E84

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/year)	4.5e6
Fraction of Regional tonnage used locally	0.34
Annual site tonnage (tonnes/year)	1.5e6
Maximum daily site tonnage (kg/day)	5.0e6

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 RMM)	0.00001
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].

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 (%)	97.7
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%)	60.4

Organisation measures to prevent/limit release from site

Prevent discharge of undissolved substance to or recover from wastewater [OMS1]. 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 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)	5.0e6
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

External recovery and recycling of waste should comply with applicable regulations [ERW1].

Section 3 Exposure Estimation

3.1. Health
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. G21.
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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. G22. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. G32. 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 (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].

4. **Use of Gas Oils (vacuum, hydrocracked & distillate fuels) H304 / non-H304, H315, H332, H351, H373, H411 as a Fuel – Professional**

Section 1 Exposure Scenario Title Gas Oils (vacuum, hydrocracked & distillate fuels) H304 / non-H304, H315, H332, H351, H373, **H411**	
Title	
Use as a Fuel	
Use Descriptor	
Sector(s) of Use	22
Process Categories	1, 2, 3, 8a, 8b, 16
Environmental Release Categories	9a, 9b
Specific Environmental Release Category	ESVOC SpERC 9.12b.v1
Processes, tasks, activities covered	
Covers the use as a fuel (or fuel additives and additive components) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.	
Assessment Method	
See Section 3.	
Section 2 Operational conditions and risk management measures	
Section 2.1 Control of worker exposure	
Product characteristics	
Physical form of product	Liquid With potential for aerosol generation [CS138]
Vapour pressure (kPa)	Liquid, vapour pressure <0.5 kPa at STP. OC3.
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.
Contributing Scenarios	**Specific Risk Management Measures and Operating Conditions**
General measures applicable to all activities CS135	Control any potential exposure using measures such as contained systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of exposure potential and aware of basic actions to 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; provide regular health surveillance as appropriate; identify and implement corrective actions. G25
General measures (skin irritants) G19	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 skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin effects that may develop. E3
Bulk transfers CS14	Wear suitable gloves tested to EN374. PPE15
Drum/batch transfers CS8	Use drum pumps or carefully pour from container E64 Wear suitable gloves tested to EN374.PPE15
Refuelling activities CS507	Wear suitable gloves tested to EN374 PPE15

Use as a fuel (closed systems) GEST_12I, CS107	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) E11 **or** Ensure operation is undertaken outdoors E69
Equipment cleaning and maintenance CS39	Drain down system prior to equipment break-in or maintenance E65 Wear chemically resistant gloves (tested to EN374) in combination with basic employee training PPE16
Storage CS67	Store substance within a closed system E84

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/year)	6.7e6
Fraction of Regional tonnage used locally	0.0005
Annual site tonnage (tonnes/year)	3.3e3
Maximum daily site tonnage (kg/day)	9.2e3
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) [OOC7]	1.0e-4
Release fraction to wastewater wide dispersive use [OOC8]	0.00001
Release fraction to soil from wide dispersive use (regional use only) [OOC9]	0.00001
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 humans via indirect exposure (primarily ingestion) [TCR1j]. 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 (%)	0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%)	0
Organisation measures to prevent/limit release from site	
Prevent discharge of undissolved substance to or recover from wastewater [OMS1]. 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 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)	1.4e5

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	
External recovery and recycling of waste should comply with applicable regulations [ERW1].	
Additional information on the basis for the allocation of the identified OCs and RMMs is contained in PETRORISK file.	
Section 3 Exposure Estimation	
3.1. Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. G21.	
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	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. G22. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. G32. 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 (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].	

5. Use of Gas Oils (vacuum, hydrocracked & distillate fuels) H304 / non-H304, H315, H332, H351, H373, H411 as a Fuel – Consumer

Section 1 Exposure Scenario Title Gas Oils (vacuum, hydrocracked & distillate fuels) H304 / non-H304, H315, H332, H351, H373, H411		
Title		
Use as a Fuel		
Use Descriptor		
Sector(s) of Use		21
Product Categories		13
Environmental Release Categories		9a, 9b
Specific Environmental Release Category		ESVOC SpERC 9.12c.v1
Processes, tasks, activities covered		
Covers consumer uses in fuels.		
Assessment Method		
See Section 3.		
Section 2 Operational conditions and risk management measures		
Section 2.1 Control of consumer exposure		
Product characteristics		
Physical form of product		liquid
Vapour pressure (kPa)		Liquid, vapour pressure > 10 Pa OC15
Concentration of substance in product		Unless otherwise stated, cover concentrations up to 100% [ConsOC1]
Frequency and duration of use/exposure		Unless otherwise stated, covers use amounts up to 37500g [ConsOC2]; covers skin contact area up to 420cm2 [ConsOC5]
Other Operational Conditions affecting exposure		Unless otherwise stated, covers use frequency up to 0.143 times per day [ConsOC4]; covers exposure up to 2 hours per event [ConsOC14]
Product Category		**Specific Risk Management Measures and Operating Conditions**
PC13:Fuels--Liquid - subcategories added: Automotive Refueling	OC	Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 52 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 210.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 37500g [ConsOC2]; covers outdoor use [ConsOC12]; covers use in room size of 100m3[ConsOC11]; for each use event, covers exposure up to 0.05hr/event[ConsOC14];
	RMM	No specific RMMs developed beyond those OCs stated [ConsRMM15]
PC13:Fuels--Liquid – subcategories added: Garden Equipment - Use	OC	Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; overs use up to 26 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; for each use event, covers use amounts up to 750g [ConsOC2]; covers outdoor use [ConsOC12]; covers use in room size of 100m3[ConsOC11]; for each use event, covers exposure up to 2.00hr/event[ConsOC14];
	RMM	No specific RMMs developed beyond those OCs stated [ConsRMM15]
PC13:Fuels--Liquid (subcategories added):	OC	Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 26 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 420.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 750g [ConsOC2]; Covers
Garden Equipment - Refueling		use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3[ConsOC11]; for each use event, covers exposure up to 0.03hr/event[ConsOC14];
	RMM	No specific RMMs developed beyond those OCs stated [ConsRMM15]
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/year)	1.6e7
Fraction of Regional tonnage used locally	0.0005
Annual site tonnage (tonnes/year)	8.2e3
Maximum daily site tonnage (kg/day)	2.3e4
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	
Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion) [TCR1j].	
Release fraction to air from wide dispersive use (regional only) [OOC7]	1.0e-4
Release fraction to wastewater from wide dispersive use [OOC8]	0.00001
Release fraction to soil from wide dispersive use (regional only) [OOC9]	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 (M_{Safe}) based on release following total wastewater treatment removal (kg/d)	3.5e5
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	
External recovery and recycling of waste should comply with applicable regulations [ERW1].	

Section 3 Exposure Estimation

3.1. 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.

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

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. G22.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23.

4.2. Environment

Further details on scaling and control technologies are provided in SpERC factsheet http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].