Safety Data Sheet as per EC Regulation No. 1907/2006

Extra Light Heating Oil
PdNr. 454000

Date of issue: 01.12.1989
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SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name	:	Extra Light Heating Oil

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

Use of the Substance/Preparation

Intended usage	:	For firing in the oil firing systems having been approved for this fuel. For further information our Competence Center Fuels is available to you at the telephone no. +43-1-40440-40884
Identified uses according to CSR (Chemical Safety Report)	:	**SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites** 01a - Distribution of substance 02 - Formulation & (re)packing of substances and mixtures 12a - Use as a Fuel: Industrial **SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)** 12b - Use as a Fuel: Professional **SU21: Consumer uses: Private households (= general public = consumers)** 12c- Use as a fuel - Consumer

For details related the Uses please see Annex.

1.3 Details of the supplier of the safety data sheet

Street address **Manufacturer, importer, supplier**	:	OMV Slovenija d.o.o. Ulica 15. Maja 19 6000 Koper Slovenija
Telephone	:	+386 (5) 663 33 00
E-mail address of the expert person	:	info.msds@omv.com

1.4 Emergency telephone number

CENTER ZA OBVEŠČANJE, 112	---
+386(1) 522 84 09	Poison Control Centre Ljubliana / 24 hr

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (EC Regulation No 1272/2008)

Flam. Liq. 3 H226, Acute Tox. 4 H332, Skin Irrit. 2 H315, Asp. Tox. 1 H304, Carc. 2 H351, STOT RE 2 H373, Aquatic Chronic 2 H411,
For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification (Directive 67/548/EEC or 1999/45/EC)

Carc.Cat.3 R40, N R51/53, Xn R65, Xn R20, Xi R38,
For the full text of the R phrases mentioned in this Section, see Section 16.

2.2 Labelling elements

Labelling (EC Regulation No 1272/2008)

Hazard pictograms :

Signal word : Danger

Hazard statements :
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 (dermal).
H373 May cause damage to organs (Thymus, liver, bone marrow) through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements :
Prevention:
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
Response:
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P331 Do NOT induce vomiting.
Disposal:
P501 Dispose of content/container according to the disposal routes specified by law.

2.3 Other hazards

Remarks : Particular danger of slippage caused by the escaped or spilled product.
Further dangers to man and environment caused by the product are not known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

not applicable

3.2 Mixtures

Chemical nature	hydrocarbons

Hazardous ingredients

Chemical Name	Index-No. CAS-No. EINECS-No./ELINCS No. Registration number	Classification (67/548/EEC)	Classification (EC Regulation No 1272/2008)	Concentration [%W/W]
Fuels, diesel	649-224-00-6 68334-30-5 269-822-7 01-2119484664-27	Carc.Cat.3; R40 N; R51/53 Xn; R65 Xn; R20 Xi; R38	Flam. Liq. 3; H226 Acute Tox. 4; H332 Skin Irrit. 2; H315 Asp. Tox. 1; H304 Carc. 2; H351 STOT RE 2; H373 Aquatic Chronic 2; H411	<= 100,00

These values do not represent any product specification / max. possible mass percentages for classification
For the full text of the R phrases mentioned in this Section, see Section 16.
For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice	:	Own protection of the first responders to be considered.
Inhalation	:	After inhalting the vapours during an accident affected persons are to be taken to the fresh air. Loosen tight cloths. If required artificial respiration and/or cardiac massage to be applied. In case of persistent discomforts a doctor is to be consulted.
Skin contact	:	After skin contact wash it thoroughly off using water and soap, contaminated clothing is to be taken off.
Eye contact	:	Upon the contact with the eye rinse for 10-15 minutes under running water and with the lids forced apart or by means of the eye rinsing bottle for several minutes. In case of persistent discomforts an ophthalmologist is to be consulted.
Ingestion, Intake into the Lungs	:	In case of suspicion (vomitting, coughing, breathing troubles) a doctor is to be consulted. Do not induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	:	Nausea, vomitting, and diarrhoea as well as the danger of a chemical pneumonitis due to the aspiration during the swallowing or vomitting. Product vapours in high concentrations may cause irritations of the eyes and mucous skins (nose, throat). Upon a long-term inhalation of concentrated vapours headache, vertigo, euphoria, excitation, tremors, tonoclonic spasms, unconsciousness, circulatory insufficiency, and paralysis of the central respiratory system may occur. Very high concentrations lead to unconsciousness after short-term exposure already.
Effects	:	Upon aspiration risk of a chemical pneumonitis.

4.3 Indication of immediate medical attention and special treatment needed

Treatment	:	In-patient treatment in a hospital to be initiated. Upon the absorption of doses of more than 1 to 2 ml per kg of body weight activated carbon (approx. 50 g) is to be given and the person hospitalised. Sedative medicaments (e.g. diazepam, or similar) to be applied in the case of strong excitation.

SECTION 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media	:	For small sources of fire: dry extinguishing powder, foam, water spray jet or carbon dioxide. In the case of a large source of fire: foam or water in a spraying jet.
Unsuitable extinguishing media	:	Water in a full jet; (could cause splattering and spread the fire);

5.2 Special hazards arising from the substance or mixture

Particular hazards due to the substance or the preparation, its products of combustion, or the gases produced during the combustion	:	Evaporated product is heavier than air and rests close to the bottom. The vapours can produce an explosive mixture together with air. Prevent the penetration into the sewer system and rooms at low levels. Prevent the penetration into the soil and waters. Sources of ignition to be kept off. Use explosion-proof and solvent resistant devices only. This substance will float and can be reignited on surface water. Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates and gases, including carbon monoxide and unidentified organic and inorganic compounds.

5.3 Advice for firefighters

Special protecting equipment	:	Use a respiratory protecting device with a full face-piece independent from the ambient air (insulating device) and in the case of a massive release and/or production of pollutants an absolutely tight full fire resistant chemical protection suit.
Further information	:	Containers in the close environment are to be cooled immediately using water spraying and removed from the dangerous zone, if possible. Fire residues and contaminated extinguishing water have to be properly disposed of in accordance with the local official regulations

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Approaching only in the direction of the wind (changes of the wind directions to be considered). Stop or contain leak at the source if safe to do so. Make explosimeter measurements for determining the dangerous zone and cordon it off. Keep unconcerned persons off the site. Alert emergency personnel. In case of large spillages, alert occupants in downwind areas. If required, notify relevant authorities according to all applicable regulations. First-aiders must wear personal protective equipment. Note: gloves made of PVA are not water-resistant, and are not suitable for emergency use. Affected rooms to be ventilated thoroughly. Avoid direct contact with released material. Remove all the sources of ignition in the close environment. Avoid the formation of sparks. In the dangerous zone non explosion-proof machinery, devices, and vehicles are to be stopped, no smoking, no actuation of any switch or electrical device that may produce a spark.

6.2 Environmental precautions

Environmental precautions	:	Escaping point to be sealed. Preventing the penetration into the sewer system, surface waters, and the groundwater by erecting sand and/or earth blockings or by means of other suitable blocking measures. In the case of escapes into surface waters, the sewer system, or into the soil the competent authorities are to be informed.

6.3 Methods and materials for containment and cleaning up

Suitable processes for cleaning or absorption or containment	:	Major amounts to be aspirated or pumped over. Residual amounts to be absorbed and/or contained using non-flammable absorbing material like e.g. sand, earth, or oil binding agents. Large spillages may be cautiously covered with foam, if available, to limit vapour cloud formation. Do not use direct jets. Note: When the binding agent is depleted upon the complete absorption the evaporation rate increases and thus, the risk of a fire. In case of soil contamination, remove contaminated soil and treat in accordance with local regulations. In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents. Large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities. All waste is to be filled in properly marked hazardous goods containers and disposed of in accordance with the official regulations.
Unsuitable processes for cleaning or absorption or containment	:	No data available

6.4 Reference to other sections

See also section 8 (personal protective equipment) and 13 (disposal).

6.5 Additional advice

Adopt measures according to local conditions and regulations.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Information on the safe handling	:	Very good aeration and ventilation of the workplace and of the storage room, also close to the bottom, to be assured. Contact with the skin, eyes, and clothing to be avoided. Do not ingest. Vapours must not be inhaled. Formation of aerosols to be avoided. Spilling of the product to be avoided. Do not use compressed air for filling, discharging, or handling operations.
Advice on protection against fire and explosion	:	Evaporated product is heavier than air and rests close to the bottom. The vapours can produce an explosive mixture together with air. Prevent the penetration into the sewer system and rooms at low levels. Prevent the penetration into the soil and waters. Measures against electrostatical charging to be taken. All devices to be earthed or connected via conductors. Sources of ignition to be kept off. Explosion-proof devices / valves and non-sparking tools to be used. No smoking. Ensure that all relevant regulations regarding handling and storage facilities of flammable products are followed.

See also section 8 (personal protective equipment) and 13 (disposal).

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Mobile containers to be kept tightly closed and at a thoroughly ventilated place. Only approved stationary containers to be used. All tanks and devices to be earthed or connected via conductors. Storage upon a suitable underground. Normally, a tightly sealed and resistant storage room is required. Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations. Before entering storage tanks and commencing any operation in a confined area, check the atmosphere for oxygen content and flammability. Recommended materials: For containers, or container linings use mild steel, stainless steel. Unsuitable materials: Some synthetic materials may be unsuitable for containers or container linings depending on the material specification and intended use. Compatibility should be checked with the manufacturer. If the product is supplied in containers: Keep only in the original container. Keep containers properly labelled. Protect from the sunlight. Light hydrocarbon vapours can build up in the headspace of containers. These can cause flammability / explosion hazards. Empty containers may contain flammable product residues. Do not weld, solder, drill, cut or incinerate empty containers, unless they have been properly cleaned.
Further information on storage conditions	:	Heat influences to be avoided. Sources of ignition to be kept off.
Advice on common storage	:	Do not store together with: explosive hazardous substances (LGK 1), gases (LGK 2 A), other explosive hazardous substances (LGK 4.1 A), flammable solid hazardous substances (LGK 4.1 B), pyrophoric or self-heating hazardous substances (LGK 4.2), hazardous substances which develop flammable gases upon contact with water (LGK 4.3), highly oxidising hazardous substances (LGK 5.1 A), ammonium nitrate and preparations containing ammonium nitrate (LGK 5.1 C), organic peroxides and self-reactive substances (LGK 5.2), non-combustible, acutely toxic cat. 1 and 2 / very toxic hazardous substances (LGK 6.1 B), infectious substances (LGK 6.2), radioactive substances (LGK 7), Restrictions for storage with: oxidising hazardous substances (LGK 5.1 B), non-combustible, acutely toxic cat. 3 / toxic or chronically active hazardous substances (LGK 6.1 D), combustible solids (LGK 11), other combustible and non-combustible substances (LGK 10-13), Due to specific storage instructions and because of particular properties of the substances within a storage facility, other restrictions may result from the assessment of the hazards. TRGS 510 must be observed.

7.3 Specific end use(s)

Information relating to special applications	:	To be used only for the intended purpose, as mentioned in Section 1.2. For information on specific uses refer to the exposure scenarios in the annex.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational limit value of the product

No data known

Occupational limit value of the components

No data known

Biological limit values of the product

No data known

Biological limit values of the components

No data known

DNEL or DMEL of product

Exposure routes: acute inhalative
Exposure time: 15 min
Value: 4300 mg/m3
DNEL, aerosol, (systemic), CAS-NR.: 68334-30-5

Exposure routes: chronic inhalative
Exposure time: 8 h
Value: 68 mg/m3
DNEL, CAS-NR.: 68334-30-5

Exposure routes: chronic dermal
Exposure time: 8 h
Value: 2,9 mg/m3
DNEL, CAS-NR.: 68334-30-5

Exposure routes: General population, acute exposure, systemic, inhalation
Exposure time: 15 min
Value: 2600 mg/m3
DNEL, aerosol, CAS-NR.: 68334-30-5

Exposure routes: General population, long-term exposure, systemic, skin
Exposure time: 24 h
Value: 1,3 mg/kg
DNEL, CAS-NR.: 68334-30-5

Exposure routes: General population, long-term exposure, systemic, inhalation
Exposure time: 24 h
Value: 20 mg/m3
DNEL, aerosol, CAS-NR.: 68334-30-5

PNEC of product

In case of this substance, it is a matter of a variable or unknown, complex hydrocarbon composition.
The conventional methods for the determination of PNECs are not appropriate and it is not possible to determine a single representative PNEC for this type of substances.

8.2 Exposure controls

To be used only for the intended purpose, as mentioned in Section 1.2., For information on specific uses refer to the exposure scenarios in the annex.

General safety measures

Hygiene measures	:	Any contact with the eyes, the skin, and clothing to be avoided. Clothing contaminated by that substance to be changed immediately and not to be reused before its cleaning.

Personal protective equipment

Respiratory protection	:	When vapours are produced: respiratory protecting and filtering device with gas filter A, characteristic colour: brown (A1 up to 0.1 % vv, A2 up to 0.5 % vv, A3 up to 1 % vv) to be used. In the case of high concentrations and ambiguous situations a respiratory protecting device independent from the ambient air (breathing apparatus) to be used.
Hand protection	:	Because of the great number of influence factors (e.g. temperature, mechanical stress) the duration of use of the recommended chemical protection gloves can be shorter than the penetration time determined in accordance with EN 374. In case of possible hand contact, wear liquid-proof protective gloves. **Material: Nitrile ;** Break through time: 480 min Strength of material: 0,40 mm Test method: DIN EN 374 **Material: Viton;** Break through time: 480 min Strength of material: 0,70 mm Test method: DIN EN 374 **Material: Butyl;** Break through time: 120 min Strength of material: 0,70 mm Test method: DIN EN 374 **Material: Polychloroprene;** Break through time: 120 min Strength of material: 0,60 mm Test method: DIN EN 374
Eye/face protection	:	safety glasses with side-shields
Body protection	:	Permanently flame-retardant and permanently antistatic protecting clothing to be used.

Limitations and supervision of the exposure of the environment

Limitations and supervision of the exposure of the environment	:	Use preferably closed apparatuses. At risk of exposure, suitable extraction should be carried out. Emission limits to be respected, cleaning of the exhaust air to be provided (if required). Also refer to section 6 "Measures in the cases of accidental release"
Limitation and monitoring of environmental exposure for specific applications	:	See exposure scenarios in Annex

8.3 Additional advice

In a concrete case and following an individual assessment of the hazards another personal protecting equipment may be required.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	:	liquid
Aggregate condition	:	liquid
Colour	:	red coloured
Odour	:	typical
Odour Threshold	:	Odour clearly perceptible

Characteristics	Values	Method	Note
pH			not applicable
Pour Point	< -10 °C	ISO 3016	
Boiling range	ca. 160 - 370 °C	EN ISO 3405	
Flash point	> 55 °C	EN ISO 2719	
Evaporation rate			not determined
Phase transition solid, gaseous			---
Lower explosion limit	ca. 0,6 %(V)		Literature data
Upper explosion limit	ca. 6,5 %(V)		Literature data
Vapour pressure	< 10 kPa at 37,8 °C	EN 13016-1	
Vapour density			no data available
Density	< 860 kg/m3 at 15 °C	EN ISO 12185	
Relative density			not relevant
Water solubility			practically insoluble
Dissolubility(ies)			Fat solubility: not determined
Partition coefficient (n-octanol/water)			No convincing data available.
Autoignition temperature	>= 225 °C		Literature: (CONCAWE 2010a)

Characteristics	Values	Method	Note
Decomposition temperature			not determined
Viscosity, kinematic	2,8 - 6,0 mm2/s at 20 °C	EN ISO 3104	
Viscosity, dynamic			not determined
Explosive properties		Derivation from chemical structure	not explosive
Oxidizing properties		Derivation from chemical structure	non-oxidising

9.2 Other information

no data available

9.3 Additional advice

CONCAWE (2010 a). Compilation of selected physico-chemical properties of petroleum substances. Owner company: CONCAWE, Brussels, Belgium. Study number: 6/10

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity

chemically stable

10.2 Chemical stability

chemically stable

10.3 Possibility of hazardous reactions

Hazardous reactions : The formation of vapour/air mixtures posing explosion hazards is possible

10.4 Conditions to avoid

Conditions to avoid : Keep away from heat sources, open flames and other ignition sources

10.5 Incompatible materials

Materials to avoid : strong acids and oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products : not determined

10.7 Additional advice

Invisible vapour, heavier than air

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Acute oral effect	:	LD50 rat Dose: > 7.600 mg/kg Method: OECD 420
Acute inhaling effect	:	LC50 rat Dose: 3,6 mg/l / 4 h Method: OECD 403
Acute dermatological effect	:	LD50 rabbit Dose: > 5 ml/kg bw Method: OECD 434 (approx. >4.300 mg/kg bw /day)
Acute effect (other)	:	no data available
Other effects	:	no information

Skin corrosion/irritation

Skin irritation	:	Irritating to skin.

Serious eye damage/eye irritation

Eye irritation	:	Temporary irritation possible

Respiratory or skin sensitisation

sensitisation	:	No indication of sensitizing effect

Germ cell mutagenicity

Genotoxicity in vitro	:	Ames test Result: positive Method: OECD 471 Test substance: Fuel - Middle distillates obtained from crude oil

Genotoxicity in vivo	:	micronucleus assay (clastogenicity) Test substance: 68476-30-2 Method: not determined Result: negative
	:	Chromosome aberration test Test substance: 64741-44-2 Method: OECD 475 Result: negative
Toxicological Assessment Germ cell mutagenicity	:	Based on the available data the product is not classified as mutagenic.

Carcinogenicity

Carcinogenic effect	:	Test substance: 10 middle distillates Method: not determined Carcinogenicity test on the mouse Result: positive
Toxicological Assessment Carcinogenicity	:	Classified under the EU Regulation CLP (EC) 1272/2008 category 2 H351

Toxicity to reproduction

Reproduction toxicity/fertility	:	Method: OECD 414 LOAEL Dose: 125 mg/kg/d
Development toxicity/teratogenicity	:	Method: OECD 414 NOAEL Dose: 125 mg/kg/d
Toxicological Assessment Development toxicity/teratogenicity Teratogenicity	:	Based on the available data, not classified as toxic to development or teratogenic.

Target Organ Systemic Toxicant - Single exposure

Target Organ Systemic Toxicant - Single exposure	:	Exposure routes: no data available

Target Organ Systemic Toxicant - Repeated exposure

Effect upon repeated or longtime exposure	:	May cause damage to organs (Thymus, liver, bone marrow) through prolonged or repeated exposure.

Aspiration hazard

Aspiration toxicity	:	May cause lung damage when swallowed.

Neurological effects

Neurological effects	:	no data available

Narcotic effect	:	High concentrations may cause narcotic effects.

Toxicological Assessment

Repeated dose toxicity	:	NOEL dermal Dose: 0,5 ml/kg (systemic) 0,0001 ml/kg (local) Method: OECD 410
	:	NOAEC (inhalation) dose: >1.71 mg/l/90d (systemic); 0,88 mg/l/90 d (local); method: OECD 413; test substance: diesel oil

11.2 Additional advice

Data above are for the main component, CAS-Nr. 68334-30-5

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity

Acute toxicity

Acute toxicity for fish	:	LL50 Species: Oncorhynchus mykiss (rainbow trout) Dose: 65 mg/l Exposure time: 96 h Method: OECD 203
		NOEL Species: Oncorhynchus mykiss (rainbow trout) Dose: 10 mg/l Exposure time: 96 h Method: OECD 203
Acute toxicity for aquatic invertebrates	:	NOEL Species: Daphnia magna (large w ater flea) Dose: 46 mg/l Exposure time: 48 h Method: EU Method C.2
Toxicity for algae and aquatic plants	:	EL50 Species: Pseudokirchnerella subcapitata Dose: > 1.000 mg/l Exposure time: 72 h Method: OECD 201

Toxicity for micro-organisms	:	NOEL Species: Tetrahymena pyriformis Dose: 3.217 mg/l Exposure time: 40 h Test substance: vacuum gas oil Method: QSAR
		EL50 Species: Tetrahymena pyriformis Dose: > 1.000 mg/l Exposure time: 40 h Test substance: not determined Method: QSAR
Toxicity to edaphic organisms	:	no data available
Toxicity for terrestrial plants	:	no data available
Toxicity to other terrestrial non -mammalian organisms	:	no data available

Chronic toxicity

Toxicity to fish (Chronic toxicity)	:	NOEL Species: Oncorhynchus mykiss (rainbow trout) Dose: 0,083 mg/l Exposure time: 14 d Test substance: vacuum gas oil Method: QSAR
Toxicity to daphnia and other aquatic invertebrates. (Chronic toxicity)	:	NOEL Species: Daphnia magna Dose: 0,2 mg/l Exposure time: 21 d Test substance: vacuum gas oil Method: (Q)SAR
Aquatic Acute	:	EL50: >1000 mg/l/ 40h; NOEL: 3,217 mg/l
Aquatic Chronic	:	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Toxicity Data on Soil	:	no data available
Other organisms relevant to the environment	:	no data available

12.2 Persistence and degradability

Persistence,Biodegradability	:	Not readily biodegradable.

12.3 Bioaccumulative potential

Bioaccumulation	:	No convincing data available. Bioconcentration (Partition coefficient (n-octanol/water)): No convincing data available.

12.4 Mobility in soil

Mobility	:	Remarks: Do not allow the product to be released uncontrolled into the environment.
Transport between environmental compartments	:	no data available
Physical-chemical eliminability	:	The product is insoluble and floats on water. May be separated mechanically in waste water plants.

12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	:	According to the results of current assessment(s), contains no substance assessed to be a PBT or a vPvB

12.6 Other adverse effects

Effects upon sewage treatment plants	:	no information
Other adverse effects	:	Prevent from entering sewage system, water bodies and ground. In the case of accidents call for assistance by professional oil-fighting forces.

12.7 Further information

Further information	:	Data above are for the main component, CAS-Nr. 68334-30-5

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Information on the disposal of the product	:	Product residues are to be disposed of in accordance with the legal stipulations.
Contaminated packaging	:	If the product has been supplied within a packing the empty original containers are to be reused preferably or, if this is not possible, they are to be recycled preferably.
Disposal key according to European disposal index when using as described in Section 1.:		
Waste from residues	:	13 07 01* fuel oil and Diesel
Contaminated packaging	:	15 01 10* packaging which contain residues of hazardous substances or which are contaminated by hazardous substances

13.2 Additional advice

The Waste Code depends on the origin of the waste and can deviate from the above data in a specific case.

SECTION 14. TRANSPORT INFORMATION

Road transport (ADR)

14.1	**UN no.**	:	1202
14.2	**Proper shipping name**	:	HEATING OIL, LIGHT
14.3	**Transport hazard class**	:	3
14.4	**Packaging group**	:	III
14.5	**Environmentally hazardous**	:	yes
14.6	**Special precautions for users**	:	S2: Vehicles may only be entered with portable lighting devices that are designed so that they can not ignite flammable vapors or gases that may have spread inside the vehicles. The operation of combustion heaters of vehicles of type FL is forbbiten during loading and unloading at loading sites. In the case of vehicles of type FL, a good electrical connection from the vehicle chassis to earth shall be established before tanks are filled or emptied. In addition, the rate of filling shall be limited. (8.5 ADR)

Further information

Number to designate the hazard	:	30
ADR/RID-Labels	:	3
Classification Code	:	F1
Tunnel restriction code	:	(D/E)
Advice	:	Danger Label No 3, EHS mark, Special regulation 640L

Rail transport (RID)

14.1	**UN no.**	:	1202
14.2	**Proper shipping name**	:	HEATING OIL, LIGHT
14.3	**Transport hazard class**	:	3
14.4	**Packaging group**	:	III
14.5	**Environmentally hazardous**	:	yes
14.6	**Special precautions for users**	:	No special precautions are known.

Further information

Number to designate the hazard	:	30
ADR/RID-Labels	:	3
Classification Code	:	F1
Advice	:	Special regulation 640L

Inland navigation with tanker barges (ADN)

14.1	**UN no.**	:	1202
14.2	**Proper shipping name**	:	HEATING OIL, LIGHT
14.3	**Transport hazard class**	:	3
14.4	**Packaging group**	:	III
14.5	**Environmentally hazardous**	:	yes
14.6	**Special precautions for users**	:	"T" The carriage of the substance is approved in packages or in tankers. (7.1.1.11 ADN) A: a breathing apparatus ambient air-dependent. EX: a flammable gas detector with the instructions for its use; PP: for each member of the crew safety goggles, a pair of protective gloves, a protective suit and a suitable pair of protective shoes (or protective boots). On board tank vessels protective boots are required in any cases;

Further information

Advice	:	(N2+F)

Sea transport (IMDG)

14.1	**UN no.**	:	1202
14.2	**Proper shipping name**	:	HEATING OIL, LIGHT
14.3	**Transport hazard class**	:	3
14.4	**Packaging group**	:	III
14.5	**Marine pollutant**	:	yes
14.6	**Special precautions for users**	:	Storage category A (7.1 IMDG Code)
14.7	**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**	:	MARPOL Annex 1

Further information

ICAO hazard labels	:	3
EmS	:	F-E, S-E

Air transport (ICAO-TI/IATA-DGR)

14.1	**UN no.**	:	1202
14.2	**Proper shipping name**	:	HEATING OIL, LIGHT
14.3	**Transport hazard class**	:	3
14.4	**Packaging group**	:	III

14.5	**Environmentally hazardous**	:	yes
14.6	**Special precautions for users**	:	No special precautions are known.

Further information

ICAO hazard labels	:	3

Additional advice

In case of need further information on the transport classification can be requested from the producer.

SECTION 15. REGULATORY INFORMATION

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

Community provisions on the protection of the health and the environment

Directive 1999/13/EC of March 11, 1999 on the limitation of emissions of volatile organic compounds emerging during certain activities and in certain plants when using organic solvents (VOC-Directive).	:	When properly used, product is not subject to VOC-Guideline (see Section 1.2).
Regulation (EC) no. 1907/2006, Annex XVII (REACH-regulation)	:	No. 3 - liquid substances or mixtures classified as dangerous by the definitions of the EEC Directive no. 67/548 and the Directive 1999/45/EC;
Directive 96/82/EC of the Council dated 9 December 1996 on control of hazards in event of serious accidents with hazardous materials (Seveso II Directive)	:	Substances according to Appendix I Part 1: Petroleum products c): Gas oils (including diesel fuels, light heating oil and gas oil mixed flows) Categories as per Appendix I Part 2: - 9ii R51/53 "Toxic to aquatic organisms; may cause long-term adverse effect in the aquatic environment"
Council Directive 92/85/EEC of 19 October 1992 on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding (tenth individual Directive within the meaning of Article 16 (1) of Directive 89/391/EEC)	:	This product is subject to the restrictions set by the national legislation transposing the Directive.
Council Directive 94/33/EC of 22 June 1994 on the protection of young people at work	:	This product is subject to the restrictions set by the national legislation transposing the Directive.

15.2 Chemical Safety Assessment

A chemical safety assessment for the main constituent was performed within the framework of the REACH registration. It was verified that control of the main constituent as a lead substance ensures appropriate control of all other constituents of the mixture. Therefore, the scenarios listed in the Annex are those developed for the main substance CAS-NR.: 68334-30-5

SECTION 16. OTHER INFORMATION

Text of R-phrases referred to under sections 2 and 3

R20	Harmful by inhalation.
R38	Irritating to skin.
R40	Limited evidence of a carcinogenic effect.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65	Harmful: may cause lung damage if swallowed.

Full text of H-Statements referred to under sections 2 and 3

Flam. Liq.:	Flammable liquids
Acute Tox.:	Acute toxicity
Skin Irrit.:	Skin corrosion/irritation
Asp. Tox.:	Aspiration hazard
Carc.:	Carcinogenicity
STOT RE:	Specific target organ toxicity - repeated exposure
Aquatic Chronic:	Hazards to the aquatic environment

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 (Thymus, liver, bone marrow) through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

Further information

Other information	:	Overall updates from the previous main version (not marked as stated below) have been implemented in:, Section 1 and Annex
	:	Sections 5, 6 and 7, Sections 11 and 12

Markings (|) in the left border and/or text in red indicate changes in the previous main version.
The above data are in accordance with our knowledge and experience at the given date of revision and exclusively refer to the product in its as-delivered condition as it is unambiguously identifiable by the product number. In the case of usages deviating from those given in section 1 or when the product is mixed with other materials or is altered in the course of a production process, the statements given in the material safety data sheet may not apply without restrictions or even not at all any more. The data are not applicable to other products of the same or a similar designation.

Annex

The exposure scenarios for the most frequent applications are listed below . If required, other exposure scenarios will be provided upon request.

1. Brief title of the Exposure Scenario: 01a - Distribution of substance

Main User Groups	:	**SU3:** Industrial uses: Uses of substances as such or in preparations at industrial sites
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 preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities **PROC8b:** Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities **PROC9:** Transfer of substance or preparation into small containers (dedicated filling line, including w eighing) **PROC15:** Use as laboratory reagent
Environmental release category	:	**ERC1:** Manufacture of substances
Further information	:	Specific Environmental Release Category ESVOC SpERC 1.1b.v1 Exposure scenario is also applicable for ERC2: Formulation of preparations 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 polymerisation processes in production of resins, rubbers, polymers ERC7: Industrial use of substances in closed systems
Processes, tasks, activities covered	:	Bulk loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading, maintenance and associated laboratory activities.

2.1 Contributing scenario controlling environmental exposure for: ERC1: Manufacture of substances

Amount used

Regional use tonnage	:	28 10E6 t/y
Annual site tonnage (tonnes/year)	:	56.000
Maximum daily site tonnage (kg/day)	:	190.000
Fraction of EU tonnage used in region	:	0,100
Fraction of Regional tonnage used locally	:	0,002
MSafe (maximum allow able site tonnage)	:	2,9 10E6 kg/d
Remarks	:	Maximum allow able site tonnage (MSafe) based on release follow ing total w astew ater treatment removal

Frequency and duration of use

Continuous exposure	:	300 Emission days (days/year)

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

Emission or Release Factor: Air	:	0,100 %
Emission or Release Factor: Water	:	0,001 %
Emission or Release Factor: Soil	:	0,001 %
Remarks	:	All release factors refer to initial release prior to RMM. Release to water is release to wastewater Emission or Release Factor Water is < 0,001%.

Technical conditions and measures / Organizational measures;

Air	:	Treat air emission to provide a typical removal efficiency of: 90,0 %
water	:	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%): 0 %
water	:	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%): 0 %
Remarks	:	Common practices vary across sites thus conservative process release estimates used. Prevent discharge of undissolved substance to or recover from wastewater. Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion). No wastewater treatment required.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	:	Domestic treatment plant
Flow rate of sewage treatment plant effluent	:	2.000 m3/d
Effectiveness (STP)	:	94,1 %
Total removal from wastewater according to internal and external location measures	:	94,1 %
Sludge Treatment	:	Prevent discharge of undissolved substance to or recover from wastewater. Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Remarks	:	Common practices vary across sites thus conservative process release estimates used.

Conditions and measures related to external treatment of waste for disposal

Waste treatment	:	External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery Methods	:	External recovery and recycling of waste should comply with applicable local and/or national regulations.

2.2 Contributing scenario controlling worker exposure for:

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 preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

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

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

PROC15 : Use as laboratory reagent

Product characteristics

Concentration of the Substance in Mixture/Article		Covers percentage substance in the product up to 100 % (unless stated differently)
Physical Form (at time of use)	:	Liquid, CS138 with potential for aerosol generation
Vapour pressure	:	Vapour Pressure is given at STP. < 5 hPa
Remarks	:	Assumes a good basic standard of occupational hygiene is implemented, Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Frequency and duration of use

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

Technical conditions and measures

CS135 General measures applicable to all activities
No other specific measures identified
G19 General measures (skin irritants)
No other specific measures identified
CS15 General exposures (closed systems).
No other specific measures identified
CS16 General exposures (open systems).
No other specific measures identified
CS2 Process sampling
No other specific measures identified
CS36 Laboratory activities
No other specific measures identified
CS501 Bulk closed loading and unloading.
No other specific measures identified
CS503 Bulk open loading and unloading
No other specific measures identified
CS6 Drum and small package filling
No other specific measures identified
CS39 Equipment cleaning and maintenance.
No other specific measures identified
CS67 Storage.
No other specific measures identified

Organisational measures to prevent/limit releases, dispersion and exposure

CS135 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 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.
G19 General measures (skin irritants)
Provide basic employee training to prevent / minimise exposures and to report any skin effects that may develop.
CS15 General exposures (closed systems).
Handle substance within a closed system.
CS16 General exposures (open systems).
No other specific measures identified
CS2 Process sampling
No other specific measures identified
CS36 Laboratory activities
No other specific measures identified
CS501 Bulk closed loading and unloading.
Handle substance within a closed system.
CS503 Bulk open loading and unloading
No other specific measures identified
CS6 Drum and small package filling
No other specific measures identified
CS39 Equipment cleaning and maintenance.
Drain down system prior to equipment break-in or maintenance.
CS67 Storage.
Handle substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation
CS135 General measures applicable to all activities
No other specific measures identified
G19 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 skin contamination immediately.
CS15 General exposures (closed systems).
No other specific measures identified
CS16 General exposures (open systems).
Wear suitable gloves tested to EN374.
CS2 Process sampling
No other specific measures identified
CS36 Laboratory activities
No other specific measures identified
CS501 Bulk closed loading and unloading.
Wear suitable gloves tested to EN374.
CS503 Bulk open loading and unloading
Wear suitable gloves tested to EN374.
CS6 Drum and small package filling
Wear suitable gloves tested to EN374.
CS39 Equipment cleaning and maintenance.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
CS67 Storage.
No other specific measures identified

3. Exposure estimation and reference to its source

3.1. Health:
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
3.2. Environment:

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

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by 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. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. 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 support the need for a DNEL to be established for other health effects. Risk Management Measures are based on qualitative risk characterisation.
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. 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 onsite 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).

1. Brief title of the Exposure Scenario: 02 - Formulation & (re)packing of substances and mixtures

Main User Groups	:	**SU3:** Industrial uses: Uses of substances as such or in preparations at industrial sites
Sector of use	:	**SU10:** Formulation [mixing] of preparations and/or repackaging (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 preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities **PROC8b:** Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities **PROC9:** Transfer of substance or preparation into small containers (dedicated filling line, including weighing) **PROC14:** Production of preparations or articles by tabletting, compression, extrusion, pelletisation **PROC15:** Use as laboratory reagent
Environmental release category	:	**ERC2:** Formulation of preparations
Further information	:	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.

2.1 Contributing scenario controlling environmental exposure for: ERC2: Formulation of preparations

Amount used

Regional use tonnage	:	28 10E6 t/y
Annual site tonnage (tonnes/year)	:	30.000
Maximum daily site tonnage (kg/day)	:	100.000
Fraction of EU tonnage used in region	:	0,1000
Fraction of Regional tonnage used locally	:	0,0011
MSafe (maximum allowable site tonnage)	:	680.000 kg/d
Remarks	:	Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal

Frequency and duration of use

Continuous exposure	:	300 Emission days (days/year), Risk from environmental exposure is driven by freshwater sediment.

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

Emission or Release Factor: Air	:	1,000 %
Emission or Release Factor: Water	:	0,002 %
Emission or Release Factor: Soil	:	0,010 %
Remarks	:	All release factors refer to initial release prior to RMM. Release to water is release to wastewater

Technical conditions and measures / Organizational measures;

Air	:	Treat air emission to provide a typical removal efficiency of: 0 %
water	:	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%): 59,9 %
water	:	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%): 0 %
Remarks	:	Common practices vary across sites thus conservative process release estimates used. Risk from environmental exposure is driven by freshwater sediment. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required. Prevent discharge of undissolved substance to or recover from wastewater.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	:	Domestic treatment plant
Flow rate of sewage treatment plant effluent	:	2.000 m3/d
Effectiveness (STP)	:	94,1 %
Total removal from wastewater according to internal and external location measures	:	94,1 %
Sludge Treatment	:	Prevent discharge of undissolved substance to or recover from wastewater. Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Remarks	:	Common practices vary across sites thus conservative process release estimates used.

Conditions and measures related to external treatment of waste for disposal

Waste treatment	:	External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery Methods	:	External recovery and recycling of waste should comply with applicable local and/or national regulations.

2.2 Contributing scenario controlling worker exposure for:

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 preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

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

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

PROC14 : Production of preparations or articles by tabletting, compression, extrusion, pelletisation

PROC15 : Use as laboratory reagent

Product characteristics

Concentration of the Substance in Mixture/Article		Covers percentage substance in the product up to 100 % (unless stated differently)
Physical Form (at time of use)	:	Liquid, CS138 with potential for aerosol generation
Vapour pressure	:	Vapour Pressure is given at STP. < 5 hPa
Remarks	:	Assumes a good basic standard of occupational hygiene is implemented, Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Frequency and duration of use

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

Technical conditions and measures

CS135 General measures applicable to all activities
No other specific measures identified
CS136 Batch processes at elevated temperatures
Provide extract ventilation to points where emissions occur.
G19 General measures (skin irritants)
No other specific measures identified
CS15 General exposures (closed systems).
No other specific measures identified
CS16 General exposures (open systems).
No other specific measures identified
CS2 Process sampling
No other specific measures identified
CS8 Drum/batch transfers
No other specific measures identified
CS14 Bulk Transfers.
No other specific measures identified
CS30 mixing operations (open systems)
Provide extract ventilation to points where emissions occur.
CS100 Production or preparation or articles by tabletting, compression, extrusion or pelletisation
No other specific measures identified
CS6 Drum and small package filling
No other specific measures identified
CS36 Laboratory activities
No other specific measures identified
CS39 Equipment cleaning and maintenance.
No other specific measures identified
CS67 Storage.
No other specific measures identified

Organisational measures to prevent/limit releases, dispersion and exposure

CS135 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 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.
CS136 Batch processes at elevated temperatures
No other specific measures identified
G19 General measures (skin irritants)
Provide basic employee training to prevent / minimise exposures and to report any skin effects that may develop.
CS15 General exposures (closed systems).
Handle substance within a closed system.
CS16 General exposures (open systems).
No other specific measures identified
CS2 Process sampling
No other specific measures identified
CS8 Drum/batch transfers
Use drum pumps or carefully pour from container.
CS14 Bulk Transfers.
Handle substance within a closed system.
CS30 mixing operations (open systems)
No other specific measures identified
CS100 Production or preparation or articles by tabletting, compression, extrusion or pelletisation
No other specific measures identified
CS6 Drum and small package filling
No other specific measures identified
CS36 Laboratory activities
No other specific measures identified
CS39 Equipment cleaning and maintenance.
Drain down system prior to equipment break-in or maintenance.
CS67 Storage.
Store substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation

CS135 General measures applicable to all activities
No other specific measures identified
CS136 Batch processes at elevated temperatures
No other specific measures identified
G19 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 skin contamination immediately.
CS15 General exposures (closed systems).
No other specific measures identified
CS16 General exposures (open systems).
Wear suitable gloves tested to EN374.
CS2 Process sampling
No other specific measures identified
CS8 Drum/batch transfers
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
CS14 Bulk Transfers.
Wear suitable gloves tested to EN374.
CS30 mixing operations (open systems)
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
CS100 Production or preparation or articles by tabletting, compression, extrusion or pelletisation
Wear suitable gloves tested to EN374.
CS6 Drum and small package filling
Wear suitable gloves tested to EN374.
CS36 Laboratory activities
No other specific measures identified
CS39 Equipment cleaning and maintenance.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
CS67 Storage.
No other specific measures identified

3. Exposure estimation and reference to its source

3.1. Health:
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
3.2. Environment:
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by 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. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. 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 support the need for a DNEL to be established for other health effects. Risk Management Measures are based on qualitative risk characterisation.
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. 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 onsite 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).

1. Brief title of the Exposure Scenario: 12a - Use as a Fuel: Industrial

Main User Groups	:	**SU3:** Industrial uses: Uses of substances as such or in preparations at industrial sites
Process category	:	**PROC1:** Use in closed process, no likelihood of exposure **PROC2:** Use in closed, continuous process with occasional controlled exposure **PROC3:** Use in closed batch process (synthesis or formulation) **PROC8a:** Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities **PROC8b:** Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities **PROC16:** Using material as fuel sources, limited exposure to unburned product to be expected
Environmental release category	:	**ERC7:** Industrial use of substances in closed systems
Further information	:	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.

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

Amount used

Regional use tonnage	:	4,5 10E6 t/y
Annual site tonnage	:	1,5 10E6 t/y
Maximum daily site tonnage	:	5 10E6 t/y
Fraction of EU tonnage used in region	:	0,10
Fraction of Regional tonnage used locally	:	0,34
MSafe (maximum allowable site tonnage)	:	5 10E6 kg/d
Remarks	:	Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal

Frequency and duration of use

Continuous exposure	:	300 Emission days (days/year), Risk from environmental exposure is driven by freshwater sediment.

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

Emission or Release Factor: Air	:	0,500 %
Emission or Release Factor: Water	:	0,001 %
Emission or Release Factor: Soil	:	0 %
Remarks	:	All release factors refer to initial release prior to RMM. Release to water is release to wastewater

Technical conditions and measures / Organizational measures;

Air	:	Treat air emission to provide a typical removal efficiency of: 95,0 %
water	:	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%): 97,7 %

water	:	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%): 60,4 %
Remarks	:	Common practices vary across sites thus conservative process release estimates used. Risk from environmental exposure is driven by freshwater sediment. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	:	Domestic treatment plant
Flow rate of sewage treatment plant effluent	:	2.000 m3/d
Effectiveness (STP)	:	94,1 %
Total removal from wastewater according to internal and external location measures	:	97,7 %
Sludge Treatment	:	Prevent discharge of undissolved substance to or recover from wastewater. Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Remarks	:	Common practices vary across sites thus conservative process release estimates used.

Conditions and measures related to external treatment of waste for disposal

Waste treatment	:	Combustion emissions limited by required exhaust emission controls., Combustion emissions considered in regional exposure assessment.

Conditions and measures related to external recovery of waste

Recovery Methods	:	External recovery and recycling of waste should comply with applicable local and/or national regulations.

2.2 Contributing scenario controlling worker exposure for:

PROC1 : Use in closed process, no likelihood of exposure

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

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

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

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

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

Product characteristics

Concentration of the Substance in Mixture/Article		Covers percentage substance in the product up to 100 % (unless stated differently)
Physical Form (at time of use)	:	Liquid, CS138 with potential for aerosol generation
Vapour pressure	:	Vapour Pressure is given at STP. < 5 hPa
Remarks	:	Assumes a good basic standard of occupational hygiene is implemented, Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Frequency and duration of use

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

Technical conditions and measures

CS135 General measures applicable to all activities
No other specific measures identified
G19 General measures (skin irritants)
No other specific measures identified
CS14 Bulk Transfers.
No other specific measures identified
CS8 Drum/batch transfers
No other specific measures identified
GEST_12I Use as a fuel, CS107 (closed systems)
No other specific measures identified
CS39 Equipment cleaning and maintenance
No other specific measures identified
CS67 Storage.
No other specific measures identified

Organisational measures to prevent/limit releases, dispersion and exposure
CS135 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 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.
G19 General measures (skin irritants)
Provide basic employee training to prevent / minimise exposures and to report any skin effects that may develop.
CS14 Bulk Transfers.
No other specific measures identified
CS8 Drum/batch transfers
No other specific measures identified
GEST_12I Use as a fuel, CS107 (closed systems)
No other specific measures identified
CS39 Equipment cleaning and maintenance
Drain down system prior to equipment break-in or maintenance
CS67 Storage.
Handle substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation
CS135 General measures applicable to all activities
No other specific measures identified
G19 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 skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin effects that may develop.
CS14 Bulk Transfers.
Wear suitable gloves tested to EN374.
CS8 Drum/batch transfers
Wear suitable gloves tested to EN374.
GEST_12I Use as a fuel, CS107 (closed systems)
No other specific measures identified
CS39 Equipment cleaning and maintenance
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
CS67 Storage.
No other specific measures identified

3. Exposure estimation and reference to its source

3.1. Health:
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

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

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by 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. 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.
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. 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 onsite 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).

1. Brief title of the Exposure Scenario: 12b - Use as a Fuel: Professional

Main User Groups	:	**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 preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities **PROC8b:** Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities **PROC16:** Using material as fuel sources, limited exposure to unburned product to be expected
Environmental release category	:	**ERC9a:** Wide dispersive indoor use of substances in closed systems
Further information	:	Specific Environmental Release Category ESVOC SpERC 9.12b.v1 Exposure scenario is also applicable for ERC9b: Wide dispersive outdoor use of substances in closed systems
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.

2.1 Contributing scenario controlling environmental exposure for: ERC9a: Wide dispersive indoor use of substances in closed systems

Amount used

Regional use tonnage	:	6,7 10E6 t/y
Annual site tonnage (tonnes/year)	:	3.300
Maximum daily site tonnage (kg/day)	:	9.200
Fraction of EU tonnage used in region	:	0,1000
Fraction of Regional tonnage used locally	:	0,0005
MSafe (maximum allowable site tonnage)	:	1,4 10E5 kg/d
Remarks	:	Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal

Frequency and duration of use

Continuous exposure	:	365 Emission days (days/year), Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

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

Emission or Release Factor: Air	:	0,010 %
Emission or Release Factor: Water	:	0,001 %
Emission or Release Factor: Soil	:	0,001 %
Remarks	:	All release factors refer to initial release prior to RMM. Release to water is release to wastewater

Technical conditions and measures / Organizational measures;

Air	:	Treat air emission to provide a typical removal efficiency of : not applicable:
water	:	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%): 0 %
water	:	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%): 0 %
Remarks	:	Common practices vary across sites thus conservative process release estimates used. Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion). No wastewater treatment required.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	:	Domestic treatment plant
Flow rate of sewage treatment plant effluent	:	2.000 m3/d
Effectiveness (STP)	:	94,1 %
Total removal from wastewater according to internal and external location measures	:	94,1 %
Sludge Treatment	:	Prevent discharge of undissolved substance to or recover from wastewater. Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Remarks	:	Common practices vary across sites thus conservative process release estimates used.

Conditions and measures related to external treatment of waste for disposal

Waste treatment	:	Combustion emissions limited by required exhaust emission controls., Combustion emissions considered in regional exposure assessment.

Conditions and measures related to external recovery of waste

Recovery Methods	:	External recovery and recycling of waste should comply with applicable local and/or national regulations.

2.2 Contributing scenario controlling worker exposure for:

PROC1 : Use in closed process, no likelihood of exposure

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

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

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

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

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

Product characteristics

Concentration of the Substance in Mixture/Article		Covers percentage substance in the product up to 100 % (unless stated differently)
Physical Form (at time of use)	:	Liquid, CS138 with potential for aerosol generation
Vapour pressure	:	Vapour Pressure is given at STP. < 5 hPa
Remarks	:	Assumes a good basic standard of occupational hygiene is implemented, Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Frequency and duration of use

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

Technical conditions and measures

CS135 General measures applicable to all activities
No other specific measures identified
G19 General measures (skin irritants)
No other specific measures identified
CS14 Bulk Transfers.
No other specific measures identified
CS8 Drum/batch transfers
Use drum pumps or carefully pour from container
CS507 Refuelling activities
No other specific measures identified
GEST_12I Use as a fuel, CS107 (closed systems)
No other specific measures identified
CS39 Equipment cleaning and maintenance.
No other specific measures identified
CS67 Storage.
No other specific measures identified

Organisational measures to prevent/limit releases, dispersion and exposure
CS135 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 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.
G19 General measures (skin irritants)
Provide basic employee training to prevent / minimise exposures and to report any skin effects that may develop.
CS14 Bulk Transfers.
No other specific measures identified
CS8 Drum/batch transfers
No other specific measures identified
CS507 Refuelling activities
No other specific measures identified
GEST_12I Use as a fuel, CS107 (closed systems)
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) or Ensure operation is undertaken outdoors.
CS39 Equipment cleaning and maintenance.
Drain down system prior to equipment break-in or maintenance.
CS67 Storage.
Store substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation
CS135 General measures applicable to all activities
No other specific measures identified
G19 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 skin contamination immediately.
CS14 Bulk Transfers.
Wear suitable gloves tested to EN374.
CS8 Drum/batch transfers
Wear suitable gloves tested to EN374.
CS507 Refuelling activities
Wear suitable gloves tested to EN374.
GEST_12I Use as a fuel, CS107 (closed systems)
No other specific measures identified
CS39 Equipment cleaning and maintenance.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
CS67 Storage.
No other specific measures identified

3. Exposure estimation and reference to its source

3.1. Health:
The ECETOC TRA tool has been used to estimate w orkplace exposures unless otherwise indicated.
3.2. Environment:
The Hydrocarbon Block Method has been used to calculate environmental exposure w ith the Petrorisk model.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

4.1. Health:
Predicted exposures are not expected to exceed the DN(M)EL w hen 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.
4.2. Environment:
Guidance is based on assumed operating conditions w hich may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for w astew ater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite 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).

1. Brief title of the Exposure Scenario: 12c- Use as a fuel - Consumer

Main User Groups	:	**SU21:** Consumer uses: Private households (= general public = consumers)
Product category	:	**PC13:** Fuels
Environmental release category	:	**ERC9a:** Wide dispersive indoor use of substances in closed systems
Further information	:	Specific Environmental Release Category ESVOC SpERC 9.12c.v1 Exposure scenario is also applicable for ERC9b: Wide dispersive outdoor use of substances in closed systems
Processes, tasks, activities covered	:	Covers consumer uses in fuels

2.1 Contributing scenario controlling environmental exposure for: ERC9a: Wide dispersive indoor use of substances in closed systems

Product characteristics
Amount used

Regional use tonnage	:	16 10E6 t/y
Annual site tonnage (tonnes/year)	:	8.200
Maximum daily site tonnage (kg/day)	:	23.000
Fraction of EU tonnage used in region	:	0,1000
Fraction of Regional tonnage used locally	:	0,0005
MSafe (maximum allowable site tonnage)	:	350.000 kg/d
Remarks	:	Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal

Frequency and duration of use

Continuous exposure	:	365 Emission days (days/year), Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

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

Emission or Release Factor: Air	:	0,010 %
Emission or Release Factor: Water	:	0,001 %
Emission or Release Factor: Soil	:	0,001 %
Remarks	:	All release factors refer to initial release prior to RMM. All release factors refer to release from wide dispersive use. Release factors for air and soil refer to regional use only. Release to water is release to wastewater

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	:	Domestic treatment plant
Flow rate of sewage treatment plant effluent	:	2.000 m3/d
Effectiveness (STP)	:	94,1 %

Conditions and measures related to external treatment of waste for disposal

Waste treatment	:	Combustion emissions limited by required exhaust emission controls., Combustion emissions considered in regional exposure assessment.

Conditions and measures related to external recovery of waste

Recovery Methods	:	External recovery and recycling of waste should comply with applicable local and/or national regulations.

2.2 Contributing scenario controlling consumer exposure for:

PC13 : Fuels

Product characteristics

Concentration of the Substance in Mixture/Article	:	Unless otherwise stated, cover concentrations up to 100%
Physical Form (at time of use)	:	Liquid
Vapour pressure	:	Vapour Pressure is given at STP. > 0,1 hPa
Remarks	:	Unless otherwise stated, covers use amounts up to37500g [ConsOC2]; covers skin contact area up to 420cm2 [ConsOC5] Unless otherwise stated, covers use frequency up to 0,143 times per day (ConsOC4); Covers exposure up to 2 hours per event (ConsOC14);

Other given operational conditions affecting consumers exposure

Activity (outdoor/indoor)	:	PC13:Fuels--Liquid - subcategories added: Automotive Refuelling
Room size	:	100 M3
Remarks	:	Unless otherwise stated, covers concentrations up to 100%., Covers use up to 52 days/year., Covers use up to 1 time/on day of use., Covers skin contact area up to 210 cm2., For each use event, covers use amounts up to 37500g., Covers outdoor use., For each use event, covers exposure up to 0,05hr/event.
Activity (outdoor/indoor)	:	PC13:Fuels--Liquid - subcategories added: Garden Equipment - Use
Room size	:	100 M3
Remarks	:	Unless otherwise stated, covers concentrations up to 100%., Covers use up to 26 days/year., Covers use up to 1 time/on day of use., For each use event, covers use amounts up to 750g., Covers outdoor use., For each use event, covers exposure up to 2 hr/event.
Activity (outdoor/indoor)	:	PC13:Fuels--Liquid (subcategories added): Garden Equipment - Refuelling
Room size	:	34 M3
Remarks	:	Unless otherwise stated, covers concentrations up to 100%., Covers use up to 26 days/year., Covers use up to 1 time/on day of use., Covers skin contact area up to 420cm2., For each use event, covers use amounts up to 750g., Covers use in a one car garage (34m3) under typical ventilation., For each use event, covers exposure up to 0,03hr/event.

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Application Route	:	PC13:Fuels--Liquid - subcategories added: Automotive Refuelling
Remarks	:	No specific RMMs identified beyond those OCs stated
Application Route	:	PC13:Fuels--Liquid - subcategories added: Garden Equipment - Use
Remarks	:	No specific RMMs identified beyond those OCs stated
Application Route	:	PC13:Fuels--Liquid (subcategories added): Garden Equipment - Refuelling
Remarks	:	No specific RMMs identified beyond those OCs stated

3. Exposure estimation and reference to its source

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.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by 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. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
4.2. Environment:
Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).