



# MATERIAL SAFETY DATA SHEET

[In accordance with the criteria of Regulation No 1907/2006 (REACH) and 453/2010]

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

### 1.1 Product identifier

Trade name: **GAS OIL FOR THE SHIPPING**  
 Chemical name: Fuels, diesel; Gasoil – unspecified;  
 index number: 649-224-00-6  
 Registration number: 01-2119484664-27-0151

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

Relevant identified uses:  
 Distribution .  
 Formulation & (Re) packing.  
 Use as a fuel – professional uses.  
Uses advised against: not determinated.

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

Importer: **SHIP-SERVICE SA**  
 Address: ul. Waliców 11, 00-851 Warszawa, Poland  
 Telephone/Fax number: + 48 91 431 89 58/ + 48 91 431 89 59  
 E-mail address for a competent person responsible for msds: buy@ship-service.pl

### 1.4 Emergency telephone number

112

## Section 2: Hazards identification

### 2.1 Classification of the substance or mixture

Classification according to 67/548/EEC

**Xn R20-65, Xi R38, Rakotw. Kat. 3 R40; N R51/53**

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

Classification according to 1272/2008/EC

**Asp. Tox 1 H304, Acute Tox. 4 H332, Skin Irrit 2 H315, Carc. 2 H351, STOT RE 2 H373, Aquatic Chronic 2 H411**

May be fatal if swallowed and enters airways. Harmful if inhaled. Causes skin irritation. Suspected of causing cancer. May cause damage to organs < blood, thymus, liver > through prolonged or repeated exposure. Toxic to aquatic life with long lasting effects.

### 2.2 Label elements

Hazard symbols and signal words



**DANGER**



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## Hazard statements

- 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 < blood, thymus, liver > through prolonged or repeated exposure.  
 H411 Toxic to aquatic life with long lasting effects.

## Precautionary statements

- P261 Avoid breathing vapours.  
 P280 Wear protective gloves/ face protection.  
 P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
 P331 Do NOT induce vomiting.  
 P332+P313 If skin irritation occurs: Get medical advice/attention.  
 P501 Dispose of contents /container to the appropriate container.

## 2.3 Other hazards

Substance don't meet criteria for PBT or vPvB in accordance with Annex XIII of REACH Regulation.

## Section 3: Composition/information on ingredients

### 3.1 Substances

- Chemical name: Fuels, diesel; Gasoil – unspecified  
 Concentration range: 100%  
 Index number: 649-224-00-6  
 CAS number: 68334-30-5  
 EINECS number: 269-822-7

### 3.2 Mixtures

Not applicable.

## Section 4: First aid measures

### 4.1 Description of first aid measures

Skin contact: take off contaminated clothes. Wash out skin with plenty of water with soap. Do not use solvents. Consult a doctor, if symptoms persist.

Eye contact: wash out with plenty of water with the eyelid hold wide open, for 10-15 min. Remove any contact lenses. Avoid powerful water stream – risk of cornea damage. Obtain medical attention immediately.

Ingestion: do not induce vomiting. rinse mouth with water; give plenty of water to drink. Do not give milk, fat and alcohol. Consult a doctor – show the container or label. Do not give anything to drink to an unconscious person.

Inhalation: remove to fresh air, keep warm and calm. In case of some symptoms consult a doctor – show the container or label.

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

Skin contact: irritation, redness, can cause allergic reaction at very sensible person.

Eye contact: irritation, redness and tearing.

Inhalation: irritation of mucous membranes, eyes and respiratory tract, redness of the conjunctiva, redness of the mucous membranes of the mouth, cough, headache, dizziness, states of intoxication, drowsiness, coma toxic, memory problems, blurred vision, nervousness and irritability, dyspnea, toxic bronchopneumonia, nausea and vomiting at high concentrations of vapors may be sudden loss of consciousness, convulsions and death.



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Ingestion: nausea, profuse vomiting, transient signs of liver damage, risk of aspiration pneumonia, blood collection in the lungs, pleural effusions.

Effects of exposure - is suspected of causing cancer.

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

Physician makes a decision regarding further medical treatment after thoroughly examination of the injured.

## Section 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media: foam, dry extinguishing, carbon dioxide, water spray.

Unsuitable extinguishing media: water jet – risk of the propagation of the flame. Water can be used only for cooling.

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

May produce toxic fumes, eg. carbon oxides, products of hydrocarbon's decomposition if burning. Do not inhale combustion products – it can be dangerous for health.

### 5.3 Advice for firefighters

Vapours are heavier than air and may create explosive mixtures with it. Vapors are heavier than air, it may accumulate at the surface of the ground and in the lower part of rooms. Standard procedure for chemical fires. Wear a self-contained breathing apparatus. Do not flush into surface water or ground water. Cool down containers with water to prevent bursting.

## Section 6: Accidental release measures

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

Limit the access for the outsiders into the breakdown area, until the suitable cleaning operations are completed. In case of large spills, isolate the exposed area. Wear adequate personal protective equipment. Remove all ignition sources. Do not smoke. Use means preventing electrostatic discharges. Avoid contact with skin and eyes. Do not inhale vapours. Evacuate all people. Caution! Danger of slipping. Clean up spills immediately.

### 6.2 Environmental precautions

Do not flush into surface water or ground water. In case of release of large amounts of the product, it is necessary to take appropriate steps to prevent it from spreading into the environment. Do not allow to flush liquid product to drains – it can stop up it after solidifier. Notify relevant emergency services.

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

Stop the leak (eg, by sealing damaged tank) if possible and safe. Embank large quantities and pump into drums. Small spills: take up small quantities and residues with absorbent material (eg. sand, earth, universal binder) and dispose of in according with local regulation. Clean the contamination place.

### 6.4 Reference to other sections

Appropriate conduct with waste product – section 13.  
Appropriate personal protective equipment – section 8.

## Section 7: Handling and storage

### 7.1 Precautions for safe handling

Handle in accordance with good occupational hygiene and safety practices. Ensure good ventilation. Avoid contact with skin and eyes. Keep away from fire and heat source. Before break and after work wash carefully hands. Wear adequate personal protective equipment. Use explosion-proof equipment. Do not ingestion.



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## 7.2 Conditions for safe storage, including any incompatibilities

Keep only in original, tightly closed and good labeled containers in well-ventilated place. Ventilation and electrical installation should be explosive-proof type and be grounded. Tanks or cylinders keep away from sources of heat and ignition. Do not store together with oxidizers, acids and bases. All storage depots should be equipped with a sufficient number of suitable extinguishing media. Keep away from food, beverages or feed for animals Do not smoke and use open flame.

## 7.3 Specific end use(s)

Distribution . Formulation & (Re) packing. Use as a fuel –professional uses.

## Section 8: Exposure controls/personal protection

### 8.1 Control parameters

Product doesn't contain any components with occupational exposure limit values at working place in Community.

Please check any national occupational exposure limit values in your country.

#### DNEL value

| Population | Route      | Effect                        | DNEL                                      |
|------------|------------|-------------------------------|---|
| workers    | dermal     | systemic/ long-term exposure  | 2,9 mg/kg/8h                              |
| workers    | inhalation | systemic / acute exposure     | 4 300 mg/m <sup>3</sup> /15 min (aerosol) |
| workers    | inhalation | systemic / long-term exposure | 68 mg/m <sup>3</sup> /8h (aerosol)        |
| consument  | inhalation | systemic / acute exposure     | 2 600 mg/m <sup>3</sup> /15 min (aerosol) |
| consument  | inhalation | systemic/ long-term exposure  | 20 mg/m <sup>3</sup> /24 godz. (aerosol)  |
| consument  | dermal     | systemic / long-term exposure | 1,3 mg/kg/24h                             |

#### PNEC value

UVCB – not applicable.

### 8.2. Exposure controls

Use the product in accordance with good occupational hygiene and safety practices. When handlings do not eat, drink or smoke. Before break and after work carefully wash hands. Take off contaminated clothes. Avoid skin and eyes contamination. Do not inhale vapors. In the case of insufficient ventilation, use means of protection of the respiratory system.

#### Hand and body protection

Use coated oil-resistant gloves according to EN 420, EN 388 and EN 374. Use protective clothes.

The material that the gloves are made of must be impenetrable and resistant to the product's effects. The selection of material must be performed with consideration of breakthrough time, penetration speed and degradation. Moreover, the selection of proper gloves depends not only on the material, but also on other quality features and changes depending on the manufacturer. The producer should provide detailed information regarding the exact breakthrough time. This information should be followed.



#### Eye/face protection

Use safety glasses (goggles).



#### Respiratory protection

Use mask with filt type A in case of high concentarte vapors in air or in case of insufficient ventilation.



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Personal protective equipment must meet requirements of directive 89/686/CE. Employer is obliged to ensure equipment adequate to activities carried out, with quality demands, cleaning and maintenance.

## Environmental exposure controls

Do not allow the large quantity of mixture to contaminate surface water/ground water. Notify relevant emergency services if necessary.

## Section 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|   |                                 |
|---|---------------------------------|
| physical state:                               | liquid                          |
| colour:                                       | dark yellow                     |
| odour:  | characteristic                  |
| odour threshold:                              | not determinated                |
| pH:   | not determinated                |
| melting point/freezing point:                 | -40 to 6°C                      |
| initial boiling point and boiling range:      | 141-462 °C                      |
| flash point:                                  | >60 °C                          |
| evaporation rate:                             | not determinated                |
| flammability (solid, gas):                    | not applicable                  |
| upper/lower flammability or explosive limits: | not determinated                |
| vapour pressure (40°C):                       | <0,4 kPa                        |
| relative vapour density:                      | not determinated                |
| density:                                      | 0,8-0,91 g/cm <sup>3</sup>      |
| solubility(ies):                              | not determinated                |
| partition coefficient: n-octanol/water:       | not determinated                |
| auto-ignition temperature:                    | >225 °C                         |
| decomposition temperature:                    | not determinated                |
| explosive properties:                         | with air form explosive mixture |
| oxidising properties:                         | not display                     |
| viscosity (40°C):                             | 2-6 cSt                         |

### 9.2 Other information

None.

## Section 10: Stability and reactivity

### 10.1 Reactivity

It reacts with oxidizers.

### 10.2 Chemical stability

The product is stable.

### 10.3 Possibility of hazardous reactions

It can soften or dissolve some plastics.

### 10.4 Conditions to avoid

Avoid high temperature, source of heat and fire. Protect against electrostatic discharge.

### 10.5 Incompatible materials

Strong oxidizers.

### 10.6 Hazardous decomposition products

None.



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## Section 11: Toxicological information

### 11.1 Information on toxicological effects

Information regarding acute and/or delayed results of the exposure was defined on the basis of the information on product's classification and/or toxicological studies.

#### Acute toxicity

|                                    |                        |              |
|------------------------------------|------------------------|--------------|
| LD <sub>50</sub> (rat, oral)       | > 9 mg/kg              | Source: API  |
| LD <sub>50</sub> (rabbit, dermal)  | > 5 ml/kg              | Source: API  |
| LC <sub>50</sub> (rat, inhalation) | 1,7 mg/lm <sup>3</sup> | Source: ARCO |

Harmful by inhalation.

#### Skin corrosion/irritation

|                     |                       |              |
|---------------------|-----------------------|--------------|
| Irritation (rabbit) | irritation (OECD 404) | Source: ARCO |
|---------------------|-----------------------|--------------|

Irritating to skin.

#### Serious eye damage/irritation

|                     |                          |              |
|---------------------|--------------------------|--------------|
| Irritation (rabbit) | no irritation (OECD 405) | Source: ARCO |
|---------------------|--------------------------|--------------|

Based on available data, the classification criteria are not met.

#### Respiratory or skin sensitization

|                            |                             |              |
|----------------------------|-----------------------------|--------------|
| Sensitization (guinea-pig) | no sensitization (OECD 406) | Source: ARCO |
|----------------------------|-----------------------------|--------------|

Based on available data, the classification criteria are not met.

#### Repeated dose toxicity (inhalation)

|       |                        |              |
|-------|------------------------|--------------|
| NOAEC | >1,7 mg/m <sup>3</sup> | Source: ARCO |
|-------|------------------------|--------------|

Based on available data, the classification criteria are not met.

#### Repeated dose toxicity (dermal)

|      |             |              |
|------|-------------|--------------|
| NOEL | 0-0,5 mg/kg | Source: ARCO |
|------|-------------|--------------|

Based on available data, the classification criteria are not met.

#### Germ cell mutagenicity

Based on available data, the classification criteria are not met.

#### Carcinogenicity

Suspected of causing cancer.

#### Reproductive toxicity

|       |           |                |
|-------|-----------|----------------|
| NOAEL | 125 mg/kg | Source: Mobile |
|-------|-----------|----------------|

Based on available data, the classification criteria are not met.

#### STOT-single exposure

Based on available data, the classification criteria are not met.

#### STOT-repeated exposure

Based on available data, the classification criteria are not met.

#### Aspiration hazard

Based on available data, the classification criteria are not met.

#### Symptoms

Skin contact: irritation, redness, can cause allergic reaction at very sensible person.

Eye contact: irritation, redness and tearing.

Inhalation: irritation of mucous membranes, eyes and respiratory tract, redness of the conjunctiva, redness of the mucous membranes of the mouth, cough, headache, dizziness, states of intoxication, drowsiness, coma toxic, memory problems, blurred vision, nervousness and irritability, dyspnea, toxic bronchopneumonia, nausea and vomiting at high concentrations of vapors may be sudden loss of consciousness, convulsions and death.

Ingestion: nausea, profuse vomiting, transient signs of liver damage, risk of aspiration pneumonia, blood collection in the lungs, pleural effusions.



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## Section 12: Ecological information

### 12.1 Toxicity

|                                  |  |
|----------------------------------|--|
| LL <sub>50</sub> (fish)          | 21 mg/l /96h/ Oncorhynchus mykiss /source: Girling and Cann            |
| NOEL (fish)                      | 0,083 mg/l/14 days/ Oncorhynchus mykiss /source: Redman                |
| EC <sub>50</sub> (invertebrates) | 210 mg/l/48h/Daphnia magna/ source: Girling and Cann                   |
| NOEL (invertebrates)             | 0,2 mg/l/Daphnia magna / source: Redman                                |
| EbL <sub>50</sub> (algae)        | 25 mg/l/72h/ Pseudokirchnerella subcapitata / source: Girling and Cann |
| NOEL (algae)                     | 1,8 mg/l /72h/ Pseudokirchnerella subcapitata/ source: Targia          |

Toxic to aquatic life with long lasting effects.

### 12.2 Persistence and degradability

Substance UVCB – not applicable.

### 12.3 Bioaccumulative potential

Substance UVCB – not applicable.

### 12.4 Mobility in soil

Product is not volatile. It is insoluble in water, it collects on water surface. Mobility is low.

### 12.5 Results of PBT and vPvB assessment

Substance is not PBT or vPvB.

### 12.6 Other adverse effects

This product has no influence on the global warming or the ozone layer depletion.

## Section 13: Disposal considerations

### 13.1 Waste treatment methods

Disposal methods for the product: stored in special containers. Do not make the discharge of waste oil to water, soil or ground. Oils should be passed company with the regeneration of waste oils. In the first place it should be recycled through a regeneration.

Disposal methods for used packing: reuse/recycling/liquidation of empty containers dispose in accordance with the local legislation. Do not mix with other wastes. Dangerous waste.

Legal basis: Directive 2006/12/EC, 94/62/EC and 91/689/EEC.

## Section 14: Transport information

### 14.1 UN number

1202

### 14.2 UN proper shipping name

DIESEL FUEL

### 14.3 Transport hazard class(es)

3

### 14.4 Packing group

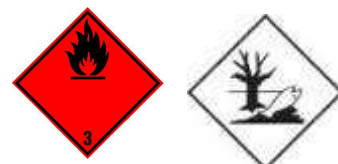
III

### 14.5 Environmental hazards

Product is dangerous for environment according to ADR, IATA and IMDG.

### 14.6 Special precautions for user

Wear adequate personal protective equipment. See section 8.







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## 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

## Section 15: Regulatory information

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

**Regulation (EC) No 1907/2006** of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

**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, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (Text with EEA relevance).

**Council Directive 67/548/EEC** of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labeling of dangerous substances.

**Directive 1999/45/EC** of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations.

**Commission Regulation (EC) No 790/2009** of 10 August 2009 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures (Text with EEA relevance).

**Commission Regulation (EU) No 453/2010** of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (Text with EEA relevance).

**Directive 2006/12/EC** of the European Parliament and of the Council of 5 April 2006 on waste.

**European Parliament and Council Directive 94/62/EC** of 20 December 1994 on packaging and packaging waste.

**Council Directive 91/689/EEC** of 12 December 1991 on hazardous waste.

### 15.2 Chemical safety assessment

Substance has chemical safety assessment.

## Section 16: Other information

### Full text of indicated R and H phrases mentioned in section 3

|        |   |
|--------|---|
| 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 < blood, thymus, liver > through prolonged or repeated exposure. |
| H411   | Toxic to aquatic life with long lasting effects.  |
| R20    | Harmful by inhalation.  |
| R65    | Harmful: may cause lung damage if swallowed.  |
| 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  |

### Trainings

Before commencing working with the product, the user should learn the Health & Safety regulations, regarding handling chemicals, and in particular, undergo a proper workplace training.





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## Other data

Date of issue: 24.03.2011  
Version: 1.0/EN  
Composed by: Anna Królak (on the basis of producer's data).  
Safety Data Sheet made by: „**THETA**” Doradztwo Techniczne

The information above is based on a current available data concerning the product, but also on the experience and knowledge in this field of the producer. They are neither a quality description of the product nor a guarantee of particular features. They are to be treated as aid to safety in transport, storage and usage of the product. That does not free the user from the responsibility of improper usage of the information above and also of improper compliance with the law norms in the field.



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## 9.3. Distribution of Gas Oils (vacuum, hydrocracked & distillate fuels) R20, R38, R40, R65, R51/53 – Industrial

### 9.3.1. Exposure Scenario

| Section 1 Exposure Scenario Title Gas Oils (vacuum, hydrocracked & distillate fuels) R20, R38, R40, R65, R51/53   |  |
|---|--|
| Title   |  |
| Distribution of Substance   |  |
| Use Descriptor  |  |
| Sector(s) of Use  | 3  |
| Process Categories  | 1, 2, 3, 4, 8a, 8b, 9, 15<br><i>Further information on the mapping and allocation of PROC codes is contained in Table 9.1</i>  |
| Environmental Release Categories  | 1, 2, 3, 4, 5, 6a, 6b, 6c, 6d, 7   |
| Specific Environmental Release Category   | ESVOC SpERC 1.1b.v1  |
| <b>Processes, tasks, activities covered</b>   |  |
| 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. |  |
| <b>Assessment Method</b>  |  |
| See Section 3.  |  |
| Section 2 Operational conditions and risk management measures   |  |
| Section 2.1 Control of worker exposure  |  |
| <b>Product characteristics</b>  |  |
| Physical form of product  | Liquid   |
| Vapour pressure (kPa)   | Liquid, vapour pressure <0.5 kPa at STP. <b>OC3</b> .  |
| Concentration of substance in product   | Covers percentage substance in the product up to 100 % (unless stated differently) <b>G13</b>  |
| Frequency and duration of use/exposure  | Covers daily exposures up to 8 hours (unless stated differently) <b>G2</b>   |
| Other Operational Conditions affecting exposure   | Assumes use at not more than 20°C above ambient temperature, unless stated differently. <b>G15</b> . Assumes a good basic standard of occupational hygiene is implemented <b>G1</b> .  |
| Contributing Scenarios  | <b>Specific Risk Management Measures and Operating Conditions</b>  |
| General measures applicable to all activities <b>CS135</b>  | 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.<br>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. <b>G25</b> |
| General measures (skin irritants) <b>G19</b>  | Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin effects that may develop. <b>E3</b>  |
| General exposures (Closed systems) <b>CS15</b>  | Handle substance within a closed system <b>E47</b>   |



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|  |   |
|--|---|
| General exposures (Open systems) <b>CS16</b>   | Wear suitable gloves tested to EN374 <b>PPE15</b>   |
| Process sampling <b>CS2</b>  | No other specific measures identified <b>EI20</b>   |
| Laboratory activities <b>CS36</b>  | No other specific measures identified <b>EI20</b>   |
| Bulk closed loading and unloading <b>CS501</b>   | Handle substance within a closed system <b>E47</b> Wear suitable gloves tested to EN374 <b>PPE15</b>  |
| Bulk open loading and unloading <b>CS503</b>   | Wear suitable gloves tested to EN374 <b>PPE15</b>   |
| Drum and small pack filling <b>CS6</b>   | Wear suitable gloves tested to EN374 <b>PPE15</b>   |
| Equipment cleaning and maintenance <b>CS39</b>   | Drain down system prior to equipment break-in or maintenance. <b>E65</b> . Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. <b>PPE16</b> |
| Storage <b>CS67</b>  | Handle substance within a closed system. <b>E84</b>   |
| <i>Additional information on the basis for the allocation of the identified OCs and RMMs is contained in Appendices 2 to 3</i>   |   |
| <b>Section 2.2 Control of environmental exposure</b>   |   |
| <b>Product characteristics</b>   |   |
| Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].   |   |
| <b>Amounts used</b>  |   |
| Fraction of EU tonnage used in region  | 0.1   |
| Regional use tonnage (tonnes/year)   | 2.8e7   |
| Fraction of Regional tonnage used locally  | 0.002   |
| Annual site tonnage (tonnes/year)  | 5.6e4   |
| Maximum daily site tonnage (kg/day)  | 1.9e5   |
| <b>Frequency and duration of use</b>   |   |
| Continuous release [FD2].  |   |
| Emission days (days/year)  | 300   |
| <b>Environmental factors not influenced by risk management</b>   |   |
| Local freshwater dilution factor   | 10  |
| Local marine water dilution factor   | 100   |
| <b>Other given operational conditions affecting environmental exposure</b>   |   |
| Release fraction to air from process (initial release prior to RMM)  | 1.0e-3  |
| Release fraction to wastewater from process (initial release prior to RMM)   | 1.0e-6  |
| Release fraction to soil from process (initial release prior to RMM)   | 0.00001   |
| <b>Technical conditions and measures at process level (source) to prevent release</b>  |   |
| Common practices vary across sites thus conservative process release estimates used [TCS1].  |   |
| <b>Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil</b>  |   |
| Risk from environmental exposure is driven by human via indirect exposure (primarily ingestion) [TCR1]] Prevent discharge of undissolved substance to or recover from onsite wastewater [TCR14].No wastewater treatment required [TCR6]. |   |
| 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 $\geq$ (%)   | 0   |
| If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq$ (%)   | 0   |
| <b>Organisation measures to prevent/limit release from site</b>  |   |
| 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].                                    |   |
| <b>Conditions and measures related to municipal sewage treatment plant</b>   |   |



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|  |       |
|--|-------|
| 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 ( $M_{site}$ ) based on release following total wastewater treatment removal (kg/d)   | 2.9e6 |
| Assumed domestic sewage treatment plant flow ( $m^3/d$ )   | 2000  |
| <b>Conditions and measures related to external treatment of waste for disposal</b>   |       |
| External treatment and disposal of waste should comply with applicable regulations [ETW3].   |       |
| <b>Conditions and measures related to external recovery of waste</b>   |       |
| External recovery and recycling of waste should comply with applicable regulations [ERW1].   |       |
| <i>Additional information on the basis for the allocation of the identified OCs and RMMs is contained in PETRORISK file.</i>   |       |
| <b>Section 3 Exposure Estimation</b>   |       |
| <b>3.1. Health</b>   |       |
| The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. <b>G21.</b>  |       |
| <b>3.2. Environment</b>  |       |
| The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].   |       |
| <b>Section 4 Guidance to check compliance with the Exposure Scenario</b>   |       |
| <b>4.1. Health</b>   |       |
| Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. <b>G22.</b>   |       |
| Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. <b>G23.</b>  |       |
| Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. <b>G32.</b> Available hazard data do not support the need for a DNEL to be established for other health effects. <b>G36.</b> Risk Management Measures are based on qualitative risk characterisation. <b>G37.</b>  |       |
| <b>4.2. Environment</b>  |       |
| 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 ( <a href="http://cefic.org/en/reach-for-industries-libraries.html">http://cefic.org/en/reach-for-industries-libraries.html</a> ) [DSU4]. |       |



# MATERIAL SAFETY DATA SHEET

## 9.4. Formulation & (Re)packing of Gas Oils (vacuum, hydrocracked & distillate fuels) R20, R38, R40, R65, R51/53 – Industrial

### 9.4.1. Exposure Scenario

|  |  |
|--|--|
| <b>Section 1 Exposure Scenario Title Gas Oils (vacuum, hydrocracked &amp; distillate fuels) R20, R38, R40, R65, R51/53</b>   |  |
| Title  |  |
| Formulation & (Re)packing of Substances and Mixtures   |  |
| <b>Use Descriptor</b>  |  |
| Sector(s) of Use   | 3, 10  |
| Process Categories   | 1, 2, 3, 4, 5, 8a, 8b, 9, 14, 15<br><i>Further information on the mapping and allocation of PROC codes is contained in Table 9.1</i>   |
| Environmental Release Categories   | 2  |
| Specific Environmental Release Category  | ESVOC SpERC 2.2.v1   |
| <b>Processes, tasks, activities covered</b>  |  |
| Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pelletization, extrusion, large and small scale packing, maintenance, sampling and associated laboratory activities |  |
| <b>Assessment Method</b>   |  |
| See Section 3.   |  |
| <b>Section 2 Operational conditions and risk management measures</b>   |  |
| <b>Section 2.1 Control of worker exposure</b>  |  |
| <b>Product characteristics</b>   |  |
| Physical form of product   | Liquid   |
| Vapour pressure (kPa)  | Liquid, vapour pressure <0.5 kPa at STP. <b>OC3</b> .  |
| Concentration of substance in product  | Covers percentage substance in the product up to 100 % (unless stated differently) <b>G13</b>  |
| Frequency and duration of use/exposure   | Covers daily exposures up to 8 hours (unless stated differently) <b>G2</b>   |
| Other Operational Conditions affecting exposure  | Assumes use at not more than 20°C above ambient temperature, unless stated differently. <b>G15</b> . Assumes a good basic standard of occupational hygiene is implemented <b>G1</b> .  |
| <b>Contributing Scenarios</b>  | <b>Specific Risk Management Measures and Operating Conditions</b>  |
| General measures applicable to all activities <b>CS135</b>   | 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.<br>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. <b>G25</b> |
| General measures (skin irritants) <b>G19</b>   | Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin effects that may develop. <b>E3</b>  |





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|  |   |
|--|---|
| General exposures (closed systems) <b>CS15</b>   | Handle substance within a closed system <b>E47</b>  |
| General exposures (open systems) <b>CS16</b>   | Wear suitable gloves tested to EN374 <b>PPE15</b>   |
| Process sampling <b>CS2</b>  | No other specific measures identified <b>EI20</b>   |
| Drum and batch transfers <b>CS8</b>  | Use drum pumps or carefully pour from container <b>E64</b> Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training <b>PPE16</b>                  |
| Bulk transfers <b>CS14</b>   | Handle substance within a closed system <b>E47</b> Wear suitable gloves tested to EN374 <b>PPE15</b>  |
| Mixing operations (open systems) <b>CS30</b>   | Provide extract ventilation to points where emissions occur <b>E54</b> Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training <b>PPE16</b>      |
| Production or preparation or articles by tableting, compression, extrusion or pelletisation <b>CS100</b>                       | Wear suitable gloves tested to EN374 <b>PPE15</b>   |
| Drum and small package filling <b>CS8</b>  | Wear suitable gloves tested to EN374 <b>PPE15</b>   |
| Laboratory activities <b>CS36</b>  | No other specific measures identified <b>EI20</b>   |
| Equipment clean down and maintenance <b>CS39</b>   | Drain down system prior to equipment break-in or maintenance. <b>E65</b> . Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. <b>PPE16</b> |
| Storage <b>CS67</b>  | Store substance within a closed system. <b>E84</b>  |
| <i>Additional information on the basis for the allocation of the identified OCs and RMMs is contained in Appendices 2 to 3</i> |   |
| <b>Section 2.2 Control of environmental exposure</b>   |   |
| <b>Product characteristics</b>   |   |
| Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].   |   |
| <b>Amounts used</b>  |   |
| 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   |
| <b>Frequency and duration of use</b>   |   |
| Continuous release [FD2].  |   |
| Emission days (days/year)  | 300   |
| <b>Environmental factors not influenced by risk management</b>   |   |
| Local freshwater dilution factor   | 10  |
| Local marine water dilution factor   | 100   |
| <b>Other given operational conditions affecting environmental exposure</b>   |   |
| 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  |
| <b>Technical conditions and measures at process level (source) to prevent release</b>  |   |
| Common practices vary across sites thus conservative process release estimates used [TCS1].                                    |   |
| <b>Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil</b>              |   |
| 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   |



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|  |       |
|--|-------|
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency $\geq$ (%)   | 59.9  |
| If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq$ (%)   | 0     |
| <b>Organisation measures to prevent/limit release from site</b>  |       |
| 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].  |       |
| <b>Conditions and measures related to municipal sewage treatment plant</b>   |       |
| 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 ( $M_{site}$ ) based on release following total wastewater treatment removal (kg/d)   | 6.8e5 |
| Assumed domestic sewage treatment plant flow ( $m^3/d$ )   | 2000  |
| <b>Conditions and measures related to external treatment of waste for disposal</b>   |       |
| External treatment and disposal of waste should comply with applicable regulations [ETW3].   |       |
| <b>Conditions and measures related to external recovery of waste</b>   |       |
| External recovery and recycling of waste should comply with applicable regulations [ERW1].   |       |
| <i>Additional information on the basis for the allocation of the identified OCs and RMMs is contained in PETRORISK file.</i>   |       |
| <b>Section 3 Exposure Estimation</b>   |       |
| <b>3.1. Health</b>   |       |
| The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. <b>G21.</b>  |       |
| <b>3.2. Environment</b>  |       |
| The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].   |       |
| <b>Section 4 Guidance to check compliance with the Exposure Scenario</b>   |       |
| <b>4.1. Health</b>   |       |
| Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. <b>G22.</b>   |       |
| Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. <b>G23.</b>  |       |
| Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. <b>G32.</b> Available hazard data do not support the need for a DNEL to be established for other health effects. <b>G36.</b> Risk Management Measures are based on qualitative risk characterisation. <b>G37.</b>  |       |
| <b>4.2. Environment</b>  |       |
| 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 ( <a href="http://cefic.org/en/reach-for-industries-libraries.html">http://cefic.org/en/reach-for-industries-libraries.html</a> ) [DSU4]. |       |





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## 9.16. Use of Gas Oils (vacuum, hydrocracked & distillate fuels) R20, R38, R40, R65, R51/53 as a Fuel – Professional

### 9.16.1. Exposure Scenario

|  |  |
|--|--|
| <b>Section 1 Exposure Scenario Title Gas Oils (vacuum, hydrocracked &amp; distillate fuels) R20, R38, R40, R65, R51/53</b>   |  |
| <b>Title</b>   |  |
| Use as a Fuel  |  |
| <b>Use Descriptor</b>  |  |
| Sector(s) of Use   | 22   |
| Process Categories   | 1, 2, 3, 8a, 8b, 16<br><i>Further information on the mapping and allocation of PROC codes is contained in Table 9.1</i>  |
| Environmental Release Categories   | 9a, 9b   |
| Specific Environmental Release Category  | ESVOC SpERC 9.12b.v1   |
| <b>Processes, tasks, activities covered</b>  |  |
| 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. |  |
| <b>Assessment Method</b>   |  |
| See Section 3.   |  |
| <b>Section 2 Operational conditions and risk management measures</b>   |  |
| <b>Section 2.1 Control of worker exposure</b>  |  |
| <b>Product characteristics</b>   |  |
| Physical form of product   | Liquid   |
| Vapour pressure (kPa)  | Liquid, vapour pressure <0.5 kPa at STP. <b>OC3</b> .  |
| Concentration of substance in product  | Covers percentage substance in the product up to 100 % (unless stated differently) <b>G13</b>  |
| Frequency and duration of use/exposure   | Covers daily exposures up to 8 hours (unless stated differently) <b>G2</b>   |
| Other Operational Conditions affecting exposure  | Assumes use at not more than 20°C above ambient temperature, unless stated differently. <b>G15</b> . Assumes a good basic standard of occupational hygiene is implemented <b>G1</b> .  |
| <b>Contributing Scenarios</b>  | <b>Specific Risk Management Measures and Operating Conditions</b>  |
| General measures applicable to all activities <b>CS135</b>   | 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.<br><br>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. <b>G25</b> |
| General measures (skin irritants) <b>G19</b>   | Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin effects that may develop. <b>E3</b>  |
| Bulk transfers <b>CS14</b>   | Wear suitable gloves tested to EN374. <b>PPE15</b>   |
| Drum/batch transfers <b>CS8</b>  | Use drum pumps or carefully pour from container <b>E64</b> Wear suitable gloves tested to EN374. <b>PPE15</b>  |



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|   |   |
|---|---|
| Refuelling activities <b>CS607</b>  | Wear suitable gloves tested to EN374 <b>PPE15</b>   |
| Use as a fuel (closed systems) <b>GEST_12I</b> , <b>CS107</b>   | Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) <b>E11</b> or Ensure operation is undertaken outdoors <b>E89</b>                         |
| Equipment cleaning and maintenance <b>CS39</b>  | Drain down system prior to equipment break-in or maintenance <b>E85</b> Wear chemically resistant gloves (tested to EN374) in combination with basic employee training <b>PPE18</b> |
| Storage <b>CS67</b>   | Store substance within a closed system <b>E84</b>   |
| <i>Additional information on the basis for the allocation of the identified OCs and RMMs is contained in Appendices 2 to 3</i>  |   |
| <b>Section 2.2. Control of environmental exposure</b>   |   |
| <b>Product characteristics</b>  |   |
| Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].  |   |
| <b>Amounts used</b>   |   |
| 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   |
| <b>Frequency and duration of use</b>  |   |
| Continuous release [FD2].   |   |
| Emission days (days/year)   | 365   |
| <b>Environmental factors not influenced by risk management</b>  |   |
| Local freshwater dilution factor  | 10  |
| Local marine water dilution factor  | 100   |
| <b>Other given operational conditions affecting environmental exposure</b>  |   |
| Release fraction to air from process (initial release prior to RMM)   | 1.0e-4  |
| Release fraction to wastewater from process (initial release prior to RMM)  | 0.00001   |
| Release fraction to soil from process (initial release prior to RMM)  | 0.00001   |
| <b>Technical conditions and measures at process level (source) to prevent release</b>   |   |
| Common practices vary across sites thus conservative process release estimates used [TCS1].   |   |
| <b>Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil</b>   |   |
| Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion) [TCR1].  |   |
| 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 $\geq$ (%)  | 0   |
| If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq$ (%)  | 0   |
| <b>Organisation measures to prevent/limit release from site</b>   |   |
| 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]. |   |
| <b>Conditions and measures related to municipal sewage treatment plant</b>  |   |
| 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   |



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|  |      |
|--|------|
| Assumed domestic sewage treatment plant flow (m <sup>3</sup> /d)   | 2000 |
| <b>Conditions and measures related to external treatment of waste for disposal</b>   |      |
| Combustion emissions limited by required exhaust emission controls [ETW1]. Combustion emissions considered in regional exposure assessment [ETW2].   |      |
| <b>Conditions and measures related to external recovery of waste</b>   |      |
| External recovery and recycling of waste should comply with applicable regulations [ERW1].   |      |
| <i>Additional information on the basis for the allocation of the identified OCs and RMMs is contained in PETRORISK file.</i>   |      |
| <b>Section 3 Exposure Estimation</b>   |      |
| <b>3.1. Health</b>   |      |
| The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. <b>G21.</b>  |      |
| <b>3.2. Environment</b>  |      |
| The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].   |      |
| <b>Section 4 Guidance to check compliance with the Exposure Scenario</b>   |      |
| <b>4.1. Health</b>   |      |
| Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. <b>G22.</b>   |      |
| Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. <b>G23.</b>  |      |
| Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. <b>G32.</b> Available hazard data do not support the need for a DNEL to be established for other health effects. <b>G36.</b> Risk Management Measures are based on qualitative risk characterisation. <b>G37.</b>  |      |
| <b>4.2. Environment</b>  |      |
| 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 ( <a href="http://cefic.org/en/reach-for-industries-libraries.html">http://cefic.org/en/reach-for-industries-libraries.html</a> ) [DSU4]. |      |