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

1.1 Product identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>Aral Heizöl EL / Aral HeizölPlus / Aral HeizölEcoPlus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other means of identification</td>
<td>Heizöl nach DIN 51603-1</td>
</tr>
<tr>
<td>SDS no.</td>
<td>SGY2152</td>
</tr>
<tr>
<td>Product type</td>
<td>Liquid.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Identified uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formulation and (re)packing of substances and mixtures</td>
</tr>
<tr>
<td>Use as a fuel - Consumer</td>
</tr>
<tr>
<td>Use as a fuel - Industrial</td>
</tr>
<tr>
<td>Use as a fuel - Professional</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Use of the substance/mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel for industrial or domestic boilers; fuel for compression ignition diesel engines. For specific application advice see appropriate Technical Data Sheet or consult our company representative.</td>
</tr>
</tbody>
</table>

1.3 Details of the supplier of the safety data sheet

<table>
<thead>
<tr>
<th>Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aral Aktiengesellschaft</td>
</tr>
<tr>
<td>Wittener Str. 45</td>
</tr>
<tr>
<td>44789 Bochum</td>
</tr>
<tr>
<td>Telefon: +49 (0) 234 315-0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E-mail address</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="mailto:MSDSadvice@bp.com">MSDSadvice@bp.com</a></td>
</tr>
</tbody>
</table>

1.4 Emergency telephone number

<table>
<thead>
<tr>
<th>EMERGENCY TELEPHONE NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>+49 (0) 30 30686 790 (Giftnotruf Berlin / Emergency Poison Centre)</td>
</tr>
</tbody>
</table>

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

<table>
<thead>
<tr>
<th>Product definition</th>
<th>Mixture</th>
</tr>
</thead>
</table>

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

- Flam. Liq. 3, H226
- Acute Tox. 4, H332
- Skin Irrit. 2, H315
- Carc. 2, H351
- STOT RE 2, H373 (bone marrow, liver and thymus)
- Asp. Tox. 1, H304
- Aquatic Chronic 2, H411

Classification according to Directive 1999/45/EC [DPD]

The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification

- Carc. Cat. 3; R40
- Xn; R20, R65
- Xi; R38
- N; R51/53

Human health hazards

Limited evidence of a carcinogenic effect. Harmful by inhalation. Harmful: may cause lung damage if swallowed. Irritating to skin.

Environmental hazards

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

See Section 16 for the full text of the R phrases or H statements declared above.

See sections 11 and 12 for more detailed information on health effects and symptoms and environmental hazards.

2.2 Label elements
## SECTION 2: Hazards identification

### Hazard pictograms

**Signal word**

Danger

**Hazard statements**

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

### Precautionary statements

**Prevention**

- P201 - Obtain special instructions before use.
- P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.
- P273 - Avoid release to the environment.
- P260 - Do not breathe vapour.

**Response**

- P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- P331 - Do NOT induce vomiting.
- P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.
- P362 - Take off contaminated clothing and wash before reuse.
- P235 - Keep cool.

**Storage**

- P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Disposal**

- Tactile warning of danger: Yes, applicable.

**Containers to be fitted with child-resistant fastenings**: Yes, applicable.

**Hazardous ingredients**

Fuels, diesel

**Supplemental label elements**

Not applicable.

### Special packaging requirements

**Hazardous ingredients**

Fuels, diesel

**Supplemental label elements**

Not applicable.

### 2.3 Other hazards

**Other hazards which do not result in classification**

This material may contain significant quantities of polycyclic aromatic hydrocarbons (PAHs), some of which have been shown by experimental studies to induce skin cancer.

Note: High Pressure Applications

Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency.

See ‘Notes to physician’ under First-Aid Measures, Section 4 of this Safety Data Sheet.

## SECTION 3: Composition/information on ingredients

### Substance/mixture

Mixture

Complex mixture of middle distillate hydrocarbons, with carbon numbers in C10 to C28 range. May also contain small quantities of proprietary performance additives.

### Classification

|-------------------------|-------------|-------|------------|------------------------------------|------|

**Product name** Aral Heizöl EL / Aral HeizölPlus / Aral HeizölEcoPlus

**Product code** SGY2152

**Version** 5.01

**Date of issue** 29 October 2014

**Format** Germany (Germany)

**Language** ENGLISH
SECTION 3: Composition/information on ingredients

alkanes, middle distillate-range, C8 - C26 branched and linear

REACH #: 01-0000020118-77
CAS: 848301-67-7

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact  In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.

Skin contact  In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Drench contaminated clothing with water before removing. This is necessary to avoid the risk of sparks from static electricity that could ignite contaminated clothing. Contaminated leather, particularly footwear, must be discarded. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention.

Inhalation  If inhaled, remove to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention.

Ingestion  Do not induce vomiting. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Aspiration hazard if swallowed. Can enter lungs and cause damage. Get medical attention immediately.

Protection of first-aiders  No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician  Treatment should in general be symptomatic and directed to relieving any effects. Product can be aspirated on swallowing or following regurgitation of stomach contents, and can cause severe and potentially fatal chemical pneumonitis, which will require urgent treatment. Because of the risk of aspiration, induction of vomiting and gastric lavage should be avoided. Gastric lavage should be undertaken only after endotracheal intubation. Monitor for cardiac dysrhythmias.

Note: High Pressure Applications
Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. Injuries may not appear serious at first but within a few hours tissue becomes swollen, discoloured and extremely painful with extensive subcutaneous necrosis. Surgical exploration should be undertaken without delay. Thorough and extensive debridement of the wound and underlying tissue is necessary to minimise tissue loss and prevent or limit permanent damage. Note that high pressure may force the product considerable distances along tissue planes.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media  In case of fire, use water fog, foam, dry chemical or carbon dioxide extinguisher or spray.

Unsuitable extinguishing media  Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Product name  Aral Heizöl EL / Aral HeizölPlus / Aral HeizölEcoPlus
Product code  SGY2152
Version 5.01  Date of issue 29 October 2014
Format  Germany
Language  ENGLISH
SECTION 5: Firefighting measures

Hazardous combustion products
Combustion products may include the following:
carbon oxides (CO, CO₂) (carbon monoxide, carbon dioxide)
other hazardous substances.

5.3 Advice for firefighters

Special precautions for fire-fighters
Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. This material is toxic to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Special protective equipment for fire-fighters
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Immediately contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Eliminate all ignition sources. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spill material. Floors may be slippery; use care to avoid falling. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Put on appropriate personal protective equipment.

For emergency responders
Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".

6.2 Environmental precautions
Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

6.3 Methods and material for containment and cleaning up

Small spill
Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres.

Large spill
Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Dike spill area and do not allow product to reach sewage system and surface or ground water. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spill product. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections
See Section 1 for emergency contact information.
See Section 5 for firefighting measures.
See Section 8 for information on appropriate personal protective equipment.
See Section 12 for environmental precautions.
See Section 13 for additional waste treatment information.
SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

**Protective measures**
Put on appropriate personal protective equipment. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not swallow. Aspiration hazard Can enter lungs and cause damage. Never siphon by mouth. Avoid contact of spill material and runoff with soil and surface waterways. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Do not reuse container. Empty containers retain product residue and can be hazardous.

**Advice on general occupational hygiene**
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Keep away from heat and direct sunlight. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Store and use only in equipment/containers designed for use with this product. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Light hydrocarbon vapours can build up in the headspace of tanks. These can cause flammability/explosion hazards even at temperatures below the normal flash point (note: flash point must not be regarded as a reliable indicator of the potential flammability of vapour in tank headspaces). Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks. Do not enter storage tanks. If entry to vessels is necessary, follow permit to work procedures. Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. When the product is pumped (e.g. during filling, discharge or ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure. Electrical equipment should not be used unless it is intrinsically safe (i.e. will not produce sparks). Explosive air/vapour mixtures may form at ambient temperature. If product comes into contact with hot surfaces, or leaks occur from pressurised fuel pipes, the vapour or mists generated will create a flammability or explosion hazard. Product contaminated rags, paper or material used to absorb spillages, represent a fire hazard, and should not be allowed to accumulate. Dispose of safely immediately after use.

**Germany - Storage code**
3

7.3 Specific end use(s)

**Recommendations**
See section 1.2 and Exposure scenarios in annex, if applicable.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

**Occupational exposure limits**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Exposure limit values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuels, diesel</td>
<td>ACGIH TLV (United States). Absorbed through skin. TWA: 100 mg/m³, (measured as total hydrocarbons) 8 hours. Issued/Revised: 1/2007 Form: Inhalable fraction and vapor</td>
</tr>
</tbody>
</table>

Whilst specific OELs for certain components may be shown in this section, other components may be present in any mist, vapour or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.
SECTION 8: Exposure controls/personal protection

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Derived No Effect Level

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Type</th>
<th>Exposure</th>
<th>Value</th>
<th>Population</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuels, diesel</td>
<td>DNEL</td>
<td>Short term</td>
<td>15 minutes</td>
<td>4300 mg/m³</td>
<td>Workers</td>
</tr>
<tr>
<td></td>
<td>DNEL</td>
<td>Long term Dermal</td>
<td>8 hours TWA</td>
<td>2.9 mg/kg bw/day</td>
<td>Workers</td>
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<tr>
<td></td>
<td>DNEL</td>
<td>Long term Inhalation</td>
<td>8 hours TWA</td>
<td>68 mg/m³</td>
<td>Workers</td>
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<td></td>
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<td>Short term Inhalation</td>
<td>15 minutes</td>
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<td>Consumers</td>
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<td>Long term Dermal</td>
<td>TWA</td>
<td>1.3 mg/kg bw/day</td>
<td>Consumers</td>
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<tr>
<td></td>
<td>DNEL</td>
<td>Long term Inhalation</td>
<td>24 hours TWA</td>
<td>20 mg/m³</td>
<td>Consumers</td>
</tr>
</tbody>
</table>

Predicted No Effect Concentration

No PNECs available

8.2 Exposure controls

Appropriate engineering controls

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.

Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.

The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory protection

If local exhaust ventilation or other methods of ventilation are not possible or are insufficient, wear suitable respiratory protective devices. Wear suitable respiratory protective devices if there is a risk of exposure limits being exceeded. The choice of suitable respiratory device will depend upon a risk assessment of the workplace environment and the task being carried out. If required, the respiratory device must be certified as safe in defined explosive atmospheres (EX Label). Respiratory protective devices must be checked to ensure they fit correctly each time they are worn. Please consult European standard EN 529 for further guidance on the selection, use, care and maintenance of respiratory protective devices.

Suitable breathing apparatus (independent of ambient atmosphere) must be worn if any of the following situations apply:
- When the workplace atmosphere is considered to be immediately dangerous to life and health.
- When there is a risk of the workplace atmosphere being oxygen deficient.
- When the workplace atmosphere is uncontrolled.
- When the workplace atmosphere is unknown.
- When there is a risk of loss of consciousness or asphyxiation.
- When entry into a confined space is required.
- When there is a risk of gases being released that could be a fire or explosion hazard.
- When the concentration of contaminants in the atmosphere exceeds the level of protection (maximum allowed concentration) given by a filtering device.
- When the contaminants have a low odour that would not be tasted or smelt by the wearer of a filtering device if the filter became exhausted or saturated.
- When there is a risk of hydrogen sulphide exposure limits being exceeded.
SECTION 8: Exposure controls/personal protection

Hand protection

If there is a requirement for the use of a respiratory protective device, but the use of breathing apparatus (independent of ambient atmosphere) is not required, then a suitable filtering device must be worn.
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product.

**Recommended:** Gas filter suitable for gases and vapours. Filter type: A
Combined filter suitable for gases, vapours and particles (dust, smoke, mist, aerosol). Filter type: AP

**General Information:**

Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. The correct choice of protective gloves depends upon the chemicals being handled, and the conditions of work and use. Most gloves provide protection for only a limited time before they must be discarded and replaced (even the best chemically resistant gloves will break down after repeated chemical exposures).

Gloves should be chosen in consultation with the supplier / manufacturer and taking account of a full assessment of the working conditions.

Wear chemical resistant gloves.
Recommended: Nitrile gloves.
Do not re-use gloves.
Protective gloves will deteriorate over time due to physical and chemical damage. Inspect and replace gloves on a regular basis.
Protective gloves must give suitable protection against mechanical risks (i.e. abrasion, blade cut and puncture).
The frequency of replacement will depend upon the circumstances of use.

**Breakthrough time:**

Breakthrough time data are generated by glove manufacturers under laboratory test conditions and represent how long a glove can be expected to provide effective permeation resistance. It is important when following breakthrough time recommendations that actual workplace conditions are taken into account. Always consult with your glove supplier for up-to-date technical information on breakthrough times for the recommended glove type.
Our recommendations on the selection of gloves are as follows:

**Continuous contact:**

Gloves with a minimum breakthrough time of 240 minutes, or >480 minutes if suitable gloves can be obtained.
If suitable gloves are not available to offer that level of protection, gloves with shorter breakthrough times may be acceptable as long as appropriate glove maintenance and replacement regimes are determined and adhered to.

**Short-term / splash protection:**

Recommended breakthrough times as above.
It is recognised that for short-term, transient exposures, gloves with shorter breakthrough times may commonly be used. Therefore, appropriate maintenance and replacement regimes must be determined and rigorously followed.

**Glove Thickness:**

For general applications, we recommend gloves with a thickness typically greater than 0.35 mm.

It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.
Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers’ technical data should always be taken into account to ensure selection of the most appropriate glove for the task.

Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:

<table>
<thead>
<tr>
<th>Product name</th>
<th>Version</th>
<th>Date of issue</th>
<th>Product code</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aral Heizöl EL / Aral HeizölPlus / Aral HeizölEcoPlus</td>
<td>5.01</td>
<td>29 October 2014</td>
<td>SGY2152</td>
<td>7/27</td>
</tr>
<tr>
<td>Format</td>
<td>Germany</td>
<td>Language</td>
<td>ENGLISH</td>
<td>(Germany)</td>
</tr>
</tbody>
</table>
SECTION 8: Exposure controls/personal protection

- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.

- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential.

Skin and body

Recommended: Nitrile gloves.
Wear suitable protective clothing.
Footwear highly resistant to chemicals.
When there is a risk of ignition wear inherently fire resistant protective clothes and gloves.
Refer to standard: ISO 11612
When there is a risk of ignition from static electricity, wear anti-static protective clothing. For greatest effectiveness against static electricity, overalls, boots and gloves should all be anti-static.
Refer to standard: EN 1149
Cotton or polyester/cotton overalls will only provide protection against light superficial contamination.
When the risk of skin exposure is high (from experience this could apply to the following tasks: cleaning work, maintenance and service, filling and transfer, taking samples and cleaning up spillages) then a chemical protective suit and boots will be required.
Work clothing / overalls should be laundered on a regular basis. Laundering of contaminated work clothing should only be done by professional cleaners who have been told about the hazards of the contamination. Always keep contaminated work clothing away from uncontaminated work clothing and uncontaminated personal clothes.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Appearance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
</tr>
<tr>
<td>Colour</td>
</tr>
<tr>
<td>Odour</td>
</tr>
<tr>
<td>Odour threshold</td>
</tr>
<tr>
<td>pH</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
</tr>
<tr>
<td>Flash point</td>
</tr>
<tr>
<td>Evaporation rate</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
</tr>
<tr>
<td>Vapour pressure</td>
</tr>
<tr>
<td>Vapour density</td>
</tr>
<tr>
<td>Relative density</td>
</tr>
<tr>
<td>Density</td>
</tr>
<tr>
<td>Solubility(ies)</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
</tr>
<tr>
<td>Decomposition temperature</td>
</tr>
<tr>
<td>Viscosity</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Explosive properties</td>
</tr>
<tr>
<td>Oxidising properties</td>
</tr>
</tbody>
</table>
SECTION 9: Physical and chemical properties

9.2 Other information
No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity
No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.

10.2 Chemical stability
The product is stable.

10.3 Possibility of hazardous reactions
Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid
Avoid all possible sources of ignition (spark or flame). Avoid excessive heat.

10.5 Incompatible materials
Reactive or incompatible with the following materials: oxidising materials.

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

SECTION 11: Toxicological information

11.1 Information on toxicological effects

**Acute toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result / Route</th>
<th>Test authority / Number</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuels, diesel</td>
<td>LC50 Inhalation Dusts and mists</td>
<td>Equivalent to OECD 403</td>
<td>Rat</td>
<td>4.1 mg/l</td>
<td>4 hours</td>
<td>Based on Diesel fuel</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Equivalent to OECD 434</td>
<td>Rabbit</td>
<td>&gt;4300 mg/kg</td>
<td>-</td>
<td>Based on No. 2 Heating Oil.</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Equivalent to OECD 434</td>
<td>Rabbit</td>
<td>&gt;4300 mg/kg</td>
<td>-</td>
<td>Based on Diesel fuel</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Equivalent to OECD 401</td>
<td>Rat</td>
<td>17900 mg/kg</td>
<td>-</td>
<td>Based on No. 2 Heating Oil.</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Equivalent to OECD 420</td>
<td>Rat</td>
<td>7600 mg/kg</td>
<td>-</td>
<td>Based on Diesel fuel</td>
</tr>
</tbody>
</table>

**Acute toxicity estimates**

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation (dusts and mists)</td>
<td>2.3 mg/l</td>
</tr>
</tbody>
</table>

**Irritation/Corrosion**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test authority / Test number</th>
<th>Species</th>
<th>Route / Result</th>
<th>Test concentration</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuels, diesel</td>
<td>Equivalent to OECD 404</td>
<td>Rabbit</td>
<td>Skin - Irritation</td>
<td>-</td>
<td>Based on No. 2 Heating Oil.</td>
</tr>
<tr>
<td></td>
<td>Equivalent to OECD 404</td>
<td>Rabbit</td>
<td>Skin - Irritation</td>
<td>-</td>
<td>Based on Diesel fuel</td>
</tr>
<tr>
<td></td>
<td>Equivalent to OECD 405</td>
<td>Rabbit</td>
<td>Eyes - Non-irritating to the eyes.</td>
<td>-</td>
<td>Based on No. 2 Heating Oil.</td>
</tr>
<tr>
<td></td>
<td>Equivalent to OECD 405</td>
<td>Rabbit</td>
<td>Eyes - Non-irritating to the eyes.</td>
<td>-</td>
<td>Based on Diesel fuel</td>
</tr>
</tbody>
</table>

**Sensitiser**
SECTION 11: Toxicological information

### Carcinogenicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Route</th>
<th>Test authority / Test number</th>
<th>Species</th>
<th>Result</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuels, diesel</td>
<td>skin</td>
<td>Equivalent to OECD 406</td>
<td>Guinea pig</td>
<td>Not sensitising</td>
<td>Based on No. 2 Heating Oil.</td>
</tr>
<tr>
<td></td>
<td>skin</td>
<td>Equivalent to OECD 406</td>
<td>Guinea pig</td>
<td>Not sensitising</td>
<td>Based on Diesel fuel</td>
</tr>
</tbody>
</table>

### GERM CELL MUTAGENICITY

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test authority / Test number</th>
<th>Cell</th>
<th>Type</th>
<th>Result</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuels, diesel</td>
<td>OECD 471</td>
<td>-</td>
<td>Experiment: In vitro</td>
<td>Subject: Non-mammalian species</td>
<td>Positive</td>
</tr>
<tr>
<td>Equivalent to OECD 476</td>
<td>Cell: Germ</td>
<td>Experiment: In vitro</td>
<td>Subject: Mammalian-Animal</td>
<td>Negative</td>
<td>Based on Heating Oil.</td>
</tr>
<tr>
<td>not guideline</td>
<td>Cell: Somatic</td>
<td>Experiment: In vivo</td>
<td>Subject: Unspecified</td>
<td>Negative</td>
<td>Based on Heating Oil.</td>
</tr>
</tbody>
</table>

Conclusion/Summary: Not classified. Based on available data, the classification criteria are not met.

### Reproductive toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test authority / Test number</th>
<th>Species</th>
<th>Route</th>
<th>Exposure</th>
<th>Result</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuels, diesel</td>
<td>Equivalent to OECD 451</td>
<td>Mouse</td>
<td>Dermal</td>
<td>2 years</td>
<td>Positive</td>
<td>Based on Heating Oil.</td>
</tr>
</tbody>
</table>

Conclusion/Summary: Suspected of causing cancer.

### Specific target organ toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test authority / Test number</th>
<th>Species</th>
<th>Route</th>
<th>Exposure</th>
<th>Developmental toxicity</th>
<th>Maternal toxicity</th>
<th>Fertility</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuels, diesel</td>
<td>Equivalent to OECD 414</td>
<td>Rat</td>
<td>Dermal</td>
<td>20 days</td>
<td>Negative</td>
<td>-</td>
<td>-</td>
<td>Effects observed at maternally toxic doses. (Based on Condensates (petroleum), vacuum tower)</td>
</tr>
<tr>
<td>Equivalent to OECD 414</td>
<td>Rat</td>
<td>Dermal</td>
<td>10 days</td>
<td>Negative</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Effects observed at maternally toxic doses. (Based on Diesel fuel)</td>
</tr>
<tr>
<td>Equivalent to OECD 414</td>
<td>Rat</td>
<td>Dermal</td>
<td>10 days</td>
<td>Negative</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Effects observed at maternally toxic doses. (Based on No. 2 Heating Oil)</td>
</tr>
</tbody>
</table>

Conclusion/Summary: Development: Not classified. Based on available data, the classification criteria are not met. Fertility: Not classified. Based on available data, the classification criteria are not met. Effects on or via lactation: Not classified. Based on available data, the classification criteria are not met.
### SECTION 11: Toxicological information

<table>
<thead>
<tr>
<th>Product / Ingredient Name</th>
<th>Hazard</th>
<th>Test authority / Test number</th>
<th>Species</th>
<th>Route</th>
<th>Type</th>
<th>Dose</th>
<th>Exposure</th>
<th>Target organs</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuels, diesel</td>
<td>STOT - RE</td>
<td>Equivalent to OECD 411</td>
<td>Rat</td>
<td>Dermal</td>
<td>LOAEL</td>
<td>20 to 200 mg/kg bw/day</td>
<td>90 days</td>
<td>blood</td>
<td>Based on Condensates (petroleum), vacuum tower</td>
</tr>
<tr>
<td>STOT - SE</td>
<td>Equivalent to OECD 434</td>
<td>Rabbit</td>
<td>Dermal</td>
<td>LOAEL</td>
<td>&gt;2000 mg/kg</td>
<td>-</td>
<td>-</td>
<td>Based on Heating Oil,</td>
<td></td>
</tr>
<tr>
<td>STOT - SE</td>
<td>Equivalent to OECD 401</td>
<td>Rat</td>
<td>Oral</td>
<td>LOAEL</td>
<td>&gt;2000 mg/kg</td>
<td>-</td>
<td>-</td>
<td>Based on Heating Oil,</td>
<td></td>
</tr>
<tr>
<td>STOT - RE</td>
<td>Equivalent to OECD 413</td>
<td>Rat</td>
<td>Inhalation</td>
<td>NOAEC</td>
<td>&gt;0.2 mg/l /6 hours</td>
<td>90 days</td>
<td>-</td>
<td>Based on Diesel fuel</td>
<td></td>
</tr>
<tr>
<td>STOT - SE</td>
<td>Equivalent to OECD 403</td>
<td>Rat</td>
<td>Inhalation</td>
<td>LOAEL</td>
<td>&gt;5 mg/l</td>
<td>4 hours</td>
<td>-</td>
<td>Based on Diesel fuel</td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion/Summary**

STOT - RE: May cause damage to organs through prolonged or repeated exposure. 
STOT - SE: Not classified. Based on available data, the classification criteria are not met.

**Information on the likely routes of exposure**

**Potential acute health effects**

**Inhalation**
Harmful if inhaled.

**Ingestion**
Irritating to mouth, throat and stomach. Aspiration hazard if swallowed. Can enter lungs and cause damage.

**Skin contact**
Causes skin irritation.

**Eye contact**
No known significant effects or critical hazards.

**Symptoms related to the physical, chemical and toxicological characteristics**

**Inhalation**
Adverse symptoms may include the following: nausea or vomiting, headache, drowsiness/fatigue, dizziness/vertigo, unconsciousness.

**Ingestion**
Adverse symptoms may include the following: nausea or vomiting.

**Skin contact**
Adverse symptoms may include the following: irritation, redness.

**Eye contact**
Adverse symptoms may include the following: pain or irritation, watering, redness.

**Delayed and immediate effects and also chronic effects from short and long term exposure**

**Inhalation**
Vapour, mists or fumes may contain polycyclic aromatic hydrocarbons some of which are known to produce skin cancer. May be harmful by inhalation if exposure to vapour, mists or fumes resulting from thermal decomposition products occurs. Vapour, mist or fume may irritate the nose, mouth and respiratory tract.

**Ingestion**
If swallowed, may irritate the mouth, throat and digestive system. If swallowed, may cause abdominal pain, stomach cramps, nausea, vomiting, diarrhoea, dizziness and drowsiness.

**Skin contact**
As with all such products containing potentially harmful levels of PCAs, prolonged or repeated skin contact may eventually result in dermatitis or more serious irreversible skin disorders including cancer.

**Eye contact**
Vapour, mist or fume may cause eye irritation. Exposure to vapour, mist or fume may cause stinging, redness and watering of the eyes.

**Potential chronic health effects**

**General**
May cause damage to organs through prolonged or repeated exposure. Vapour, mists or fumes may contain polycyclic aromatic hydrocarbons some of which are known to produce skin cancer.
**SECTION 11: Toxicological information**

<table>
<thead>
<tr>
<th>Other chronic toxicity data</th>
<th>As with all such products containing potentially harmful levels of PCAs, prolonged or repeated skin contact may eventually result in dermatitis or more serious irreversible skin disorders including cancer.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carcinogenicity</td>
<td>Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Developmental effects</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Fertility effects</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

**SECTION 12: Ecological information**

<table>
<thead>
<tr>
<th>12.1 Toxicity</th>
<th>Product/ingredient name</th>
<th>Test authority / Test number</th>
<th>Species</th>
<th>Type / Result</th>
<th>Exposure</th>
<th>Effects</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuels, diesel</td>
<td>Modelled data</td>
<td>Micro-organism</td>
<td>EL50 &gt;1000 mg/l Nominal</td>
<td>Fresh water</td>
<td>40 hours</td>
<td>growth inhibition</td>
<td>Based on Vacuum gas oil / Hydrocracked gas oil / Distillate Fuel</td>
</tr>
<tr>
<td></td>
<td>Modelled data</td>
<td>Micro-organism</td>
<td>NOELR 3.217 mg/l Nominal</td>
<td>Fresh water</td>
<td>40 hours</td>
<td>growth inhibition</td>
<td>Based on Vacuum gas oil / Hydrocracked gas oil / Distillate Fuel</td>
</tr>
<tr>
<td></td>
<td>OECD 201</td>
<td>Algae</td>
<td>Acute EL50 22 mg/l Nominal</td>
<td>Fresh water</td>
<td>72 hours</td>
<td>(growth rate)</td>
<td>Based on Diesel fuel</td>
</tr>
<tr>
<td></td>
<td>OECD 202</td>
<td>Daphnia</td>
<td>Acute EL50 210 mg/l Nominal</td>
<td>Fresh water</td>
<td>48 hours</td>
<td>Mobility</td>
<td>Based on Diesel fuel</td>
</tr>
<tr>
<td></td>
<td>OECD 202</td>
<td>Daphnia</td>
<td>Acute EL50 68 mg/l Nominal</td>
<td>Fresh water</td>
<td>48 hours</td>
<td>Mobility</td>
<td>Based on Diesel fuel</td>
</tr>
<tr>
<td></td>
<td>OECD 201</td>
<td>Algae</td>
<td>Acute ErL50 78 mg/l Nominal</td>
<td>Fresh water</td>
<td>72 hours</td>
<td>(growth rate)</td>
<td>Based on Diesel fuel</td>
</tr>
<tr>
<td></td>
<td>OECD 203</td>
<td>Fish</td>
<td>Acute LL50 65 mg/l Nominal</td>
<td>Fresh water</td>
<td>96 hours</td>
<td>Mortality</td>
<td>Based on Diesel fuel</td>
</tr>
<tr>
<td></td>
<td>OECD 203</td>
<td>Fish</td>
<td>Acute LL50 21 mg/l Nominal</td>
<td>Fresh water</td>
<td>96 hours</td>
<td>Mortality</td>
<td>Based on Diesel fuel</td>
</tr>
<tr>
<td></td>
<td>OECD 201</td>
<td>Algae</td>
<td>Acute NOELR 10 mg/l Nominal</td>
<td>Fresh water</td>
<td>72 hours</td>
<td>(growth rate)</td>
<td>Based on Diesel fuel</td>
</tr>
<tr>
<td></td>
<td>OECD 201</td>
<td>Algae</td>
<td>Acute NOELR 1 mg/l Nominal</td>
<td>Fresh water</td>
<td>72 hours</td>
<td>(growth rate)</td>
<td>Based on Diesel fuel</td>
</tr>
<tr>
<td></td>
<td>OECD 202</td>
<td>Daphnia</td>
<td>Acute NOELR 46 mg/l Nominal</td>
<td>Fresh water</td>
<td>48 hours</td>
<td>Mobility</td>
<td>Based on Diesel fuel</td>
</tr>
<tr>
<td></td>
<td>Modelled data</td>
<td>Fish</td>
<td>Chronic NOEL 0.083 mg/l Nominal</td>
<td>Fresh water</td>
<td>14 days</td>
<td>Mortality</td>
<td>Based on Vacuum gas oil / Hydrocracked gas oil / Distillate Fuel</td>
</tr>
<tr>
<td></td>
<td>Modelled data</td>
<td>Daphnia</td>
<td>Chronic NOELR 0.2 mg/l Nominal</td>
<td>Fresh water</td>
<td>21 days</td>
<td>Immobilisation</td>
<td>Based on Vacuum gas oil / Hydrocracked gas oil / Distillate Fuel</td>
</tr>
</tbody>
</table>
SECTION 12: Ecological information

Environmental hazards
- Toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability
Expected to be biodegradable.

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test authority / Test number</th>
<th>Result - Exposure</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuels, diesel</td>
<td>OECD 301 F</td>
<td>60 % - Readily - 28 days</td>
<td>Based on Diesel fuel</td>
</tr>
<tr>
<td></td>
<td>OECD 301 F</td>
<td>57.5 % - Not readily - 28 days</td>
<td>Based on Diesel fuel</td>
</tr>
<tr>
<td></td>
<td>Equivalent to EPA OTS 796. 3100</td>
<td>35 % - Not readily - 28 days</td>
<td>Based on Gas Oils (petroleum), solvent refined</td>
</tr>
</tbody>
</table>

12.3 Bioaccumulative potential
This product is not expected to bioaccumulate through food chains in the environment.

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuels, diesel</td>
<td>&gt;3</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

12.4 Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>)
- Not available.

Mobility
- Spillages may penetrate the soil causing ground water contamination. This material may accumulate in sediments.

12.5 Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

12.6 Other adverse effects
- Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

Other ecological information

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal
- Where possible, arrange for product to be recycled. Dispose of via an authorised person/licensed waste disposal contractor in accordance with local regulations.

Hazardous waste
- Yes.

European waste catalogue (EWC)

<table>
<thead>
<tr>
<th>Waste code</th>
<th>Waste designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 07 01*</td>
<td>fuel oil and diesel</td>
</tr>
</tbody>
</table>

However, deviation from the intended use and/or the presence of any potential contaminants may require an alternative waste disposal code to be assigned by the end user.

Packaging

Methods of disposal
- Where possible, arrange for product to be recycled. Dispose of via an authorised person/licensed waste disposal contractor in accordance with local regulations.

Special precautions
- This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Empty containers represent a fire hazard as they may contain flammable product residues and vapour. Never weld, solder or braze empty containers. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Other information
- Empty packages may contain some remaining product. Hazard warning labels are a guide to the safe handling of empty packaging and should not be removed. Empty containers represent a fire hazard as they may contain flammable product residues and vapour. Never weld, solder or braze empty containers.
### SECTION 14: Transport information

<table>
<thead>
<tr>
<th>ADR/RID</th>
<th>ADN</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1 UN number</td>
<td>UN1202</td>
<td>UN1202</td>
<td>UN1202</td>
</tr>
<tr>
<td>14.2 UN proper shipping name</td>
<td>HEATING OIL, LIGHT</td>
<td>HEATING OIL, LIGHT</td>
<td>HEATING OIL, LIGHT MARINE POLLUTANT</td>
</tr>
<tr>
<td>14.3 Transport hazard class(es)</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>![flammable symbol]</td>
<td>![flammable symbol]</td>
<td>![flammable symbol]</td>
</tr>
<tr>
<td>14.4 Packing group</td>
<td>III</td>
<td>III</td>
<td>III</td>
</tr>
<tr>
<td>14.5 Environmental hazards</td>
<td>Yes.</td>
<td>Yes.</td>
<td>Yes. No.</td>
</tr>
<tr>
<td>Additional information</td>
<td>The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.</td>
<td>The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.</td>
<td>The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.</td>
</tr>
<tr>
<td>Hazard identification number</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Special provisions</td>
<td>640L, 363</td>
<td>640L, 363</td>
<td>640L, 363</td>
</tr>
<tr>
<td>Tunnel code</td>
<td>DIE</td>
<td>DIE</td>
<td>DIE</td>
</tr>
<tr>
<td>14.6 Special precautions for user</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>ADR/RID Classification code:</td>
<td>F1</td>
<td>F1</td>
<td>F1</td>
</tr>
<tr>
<td>ADN Classification code:</td>
<td>F1</td>
<td>F1</td>
<td>F1</td>
</tr>
</tbody>
</table>

### SECTION 15: Regulatory information

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

**EU Regulation (EC) No. 1907/2006 (REACH)**

**Annex XIV - List of substances subject to authorisation**

**Substances of very high concern**

None of the components are listed.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles**

Not applicable.

**Other regulations**

**REACH Status**

The company, as identified in Section 1, sells this product in the EU in compliance with the current requirements of REACH.

**United States inventory (TSCA 8b)**

At least one component is not listed.

**Australia inventory (AICS)**

Not determined.

**Canada inventory**

At least one component is not listed.

**China inventory (IECSC)**

At least one component is not listed.

**Japan inventory (ENCS)**

At least one component is not listed.

**Korea inventory (KECI)**

At least one component is not listed.
SECTION 15: Regulatory information

**Philippines inventory (PICCS)**
Not determined.

**National regulations**
Category: 13.3 gas oils (including diesel fuels)

**Hazardous incident ordinance**
2 Appendix No. 4 (classified according VwVwS)

**Hazard class for water**

**15.2 Chemical Safety Assessment**
Complete.

SECTION 16: Other information

**Abbreviations and acronyms**
ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
CSA = Chemical Safety Assessment
CSR = Chemical Safety Report
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
DPD = Dangerous Preparations Directive [1999/45/EC]
DSD = Dangerous Substances Directive [67/548/ECC]
EINECS = European Inventory of Existing Commercial chemical Substances
ES = Exposure Scenario
EUH statement = CLP-specific Hazard statement
EWC = European Waste Catalogue
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
OECD = Organisation for Economic Co-operation and Development
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SADT = Self-Accelerating Decomposition Temperature
SVHC = Substances of Very High Concern
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
TWA = Time weighted average
UN = United Nations
UVCB = Complex hydrocarbon substance
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative

**Full text of abbreviated H statements**
H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H351 Suspected of causing cancer.
H373 (bone marrow, liver and thymus) May cause damage to organs through prolonged or repeated exposure. (bone marrow, liver and thymus)
H411 Toxic to aquatic life with long lasting effects.

**Full text of classifications [CLP/GHS]**
Acute Tox. 4, H332 ACUTE TOXICITY (inhalation) - Category 4
Aquatic Chronic 2, H411 LONG-TERM AQUATIC HAZARD - Category 2
Asp. Tox. 1, H304 ASPIRATION HAZARD - Category 1
Carc. 2, H351 CARCINOGENICITY - Category 2
Flam. Liq. 3, H226 FLAMMABLE LIQUIDS - Category 3
Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2
STOT RE2, H373 (bone marrow, liver and thymus) SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (bone marrow, liver and thymus) - Category 2
SECTION 16: Other information

Full text of abbreviated R phrases
- R40 - Limited evidence of a carcinogenic effect.
- R20 - Harmful by inhalation.
- R65 - Harmful: may cause lung damage if swallowed.
- R38 - Irritating to skin.
- R66 - Repeated exposure may cause skin dryness or cracking.
- R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of classifications [DSD/DPD]
- Carc. Cat. 3 - Carcinogen category 3
- Xn - Harmful
- Xi - Irritant
- N - Dangerous for the environment

History
- Date of issue/Date of revision: 29/10/2014.
- Date of previous issue: 28/10/2014.
- Prepared by: Product Stewardship

Indicates information that has changed from previously issued version.

Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user’s obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.
Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition: Mixture
Code: SGY2152
Product name: Aral Heizöl EL / Aral HeizölPlus / Aral HeizölEcoPlus

Section 1: Title

Short title of the exposure scenario: Gas Oils (vacuum, hydrocracked & distillate fuels) R20, R38, R40, R65, R51/53 Use as a fuel - Consumer
List of use descriptors: Identified use name: Use as a fuel - Consumer
Sector of end use: SU21
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC09a, ERC09b
Market sector by type of chemical product: PC13
Specific Environmental Release Category: ESVOC SpERC 9.12c.v1
Processes and activities covered by the exposure scenario: Covers consumer uses in liquid fuels.
Assessment Method: See Section 3

Section 2: Operational conditions and risk management measures

Section 2.1: Control of consumer exposure

Concentration of substance in mixture or article: Covers concentrations up to 100%
Physical state: Liquid, vapour pressure > 10 kPa

Contributing scenarios: Operational conditions and risk management measures

Product category(ies) 13: Fuels Liquid: automotive refuelling
Operations Conditions (consumer): Covers concentrations up to 100% Covers use up to 52 days per year Covers use up to 1 time/on day of use Covers skin contact area up to 210.00 cm² For each use event, covers use amounts up to 37500 g Covers outdoor use. Covers use in room size of 100 m³ Covers exposure up to 0.05 hours per event
Risk Management Measures (consumer): No specific risk management measure identified beyond those operational conditions stated.

Product category(ies) 13: Fuels Liquid: garden equipment - use
Operations Conditions (consumer): Covers concentrations up to 100% Covers use up to 26 days per year Covers use up to 1 time/on day of use For each use event, covers use amounts up to 750 g Covers outdoor use. Covers use in room size of 100 m³ Covers exposure up to 2.00 hours per event
Risk Management Measures (consumer): No specific risk management measure identified beyond those operational conditions stated.

Product category(ies) 13: Liquid: garden equipment - refuelling
Operations Conditions (consumer): Covers concentrations up to 100% Covers use up to 26 days per year Covers use up to 1 time/on day of use Covers skin contact area up to 420.00 cm² For each use event, covers use amounts up to 750 g Covers use in a one car garage (34 m³) under typical ventilation. Covers use in room size of 34 m³ Covers exposure up to 0.03 hours per event
Risk Management Measures (consumer): No specific risk management measure identified beyond those operational conditions stated.

Section 2.2: Control of environmental exposure

Aral Heizöl EL / Aral HeizölPlus / Aral HeizölEcoPlus
Gas Oils (vacuum, hydrocracked & distillate fuels) R20, R38, R40, R65, R51/53 Use as a fuel - Consumer
Date of issue/Date of revision: 17/27

^(ES Revision date)
### Product characteristics:
- Substance is complex UVCB. Predominantly hydrophobic
- **Fraction of EU tonnage used in region:** 0.1
- **Regional use tonnage:** 1.6E7
- **Fraction of Regional tonnage used locally:** 0.0005
- **Maximum daily site tonnage:** 2.3E4
- **Frequency and duration of use:** Continuous release
- **Other given operational conditions affecting environmental exposure:** Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).
- **Conditions and measures related to external treatment of waste for disposal:** Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment.
- **Conditions and measures related to external recovery of waste:** External recovery and recycling of waste should comply with applicable local and/or national regulations.
- **RCR - Air Compartment Driven:** 1.11E-02
- **RCR - Water Compartment Driven:** 5.99E-02

### Section 3 Exposure estimation and reference to its source

#### Exposure estimation and reference to its source - Environment: 1:
- **Exposure assessment (environment):** The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.
- **Exposure estimation:** Not available.

#### Exposure estimation and reference to its source - Consumers: 0:
- **Exposure assessment (human):** The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.
- **Exposure estimation:** Not available.

### Section 4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

#### Environment
- Further details on scaling and control technologies are provided in SpERC factsheet.

#### 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.
Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition: Mixture
Code: SGY2152
Product name: Aral Heizöl EL / Aral HeizölPlus / Aral HeizölEcoPlus

Section 1: Title
Short title of the exposure scenario: Gas Oils (vacuum, hydrocracked & distillate fuels) R20, R38, R40, R65, R51/53 Formulation and (re)packing of substances and mixtures - Industrial
List of use descriptors

Over the course of time: Identified use name: Formulation and (re)packing of substances and mixtures

Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC09, PROC15, PROC05, PROC14

Sector of end use: SU03, SU10

Subsequent service life relevant for that use: No.

Environmental Release Category: ERC02

Specific Environmental Release Category: ESVOC SpERC 2.2.v1

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

Assessment Method: See Section 3

Section 2: Operational conditions and risk management measures

Section 2.1 Control of worker exposure
Product characteristics:

Physical state: Liquid, vapour pressure < 0.5 kPa at STP
Concentration of substance in product: Covers percentage substance in the product up to 100% (unless stated differently).
Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently)
Other given operational conditions affecting workers exposure: Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented

Contributing scenarios: Operational conditions and risk management measures

General measures applicable to all activities: Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance.

Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; ensure suitable personal protective equipment is available; clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

General measures (skin irritants): Avoid all skin contact with product, clean up contamination/spills as soon as they occur.

Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately.

Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

General exposures (closed systems): Handle substance within a closed system.

General exposures (open systems): Wear suitable gloves tested to EN374.

Process sampling: No other specific measures identified.

Drum/batch transfers: Use drum pumps or carefully pour from container. Wear chemical-resistant gloves (tested to EN374) in combination with ‘basic’ employee training.

Bulk transfers: Handle substance within a closed system. Wear suitable gloves tested to EN374.
Mixing operations (open systems): Provide extract ventilation to points where emissions occur. Wear chemical-resistant gloves (tested to EN374) in combination with ‘basic’ employee training.

Production or preparation of articles by tabletting, compression, extrusion or pelletisation: Wear suitable gloves tested to EN374.

Drum and small package filling: Wear suitable gloves tested to EN374.

Laboratory activities: No other specific measures identified.

Equipment cleaning and maintenance: Drain down system prior to equipment break-in or maintenance. Wear chemical-resistant gloves (tested to EN374) in combination with ‘basic’ employee training.

Storage: Handle substance within a closed system.

---

**Section 2.2: Control of environmental exposure**

**Product characteristics:** Substance is complex UVCB. Predominantly hydrophobic

**Amounts used:**

- Fraction of EU tonnage used in region: 0.1
- Regional use tonnage: 2.8E7
- Fraction of Regional tonnage used locally: 0.0011
- Annual site tonnage: 3.0E4
- Maximum daily site tonnage: 1.0E5

**Frequency and duration of use:** Continuous release

**Emission Days (days/year):** 300

**Environment factors not influenced by risk management:**

- Local freshwater dilution factor: 10
- Local marine water dilution factor: 100
- Release fraction to air from process (initial release prior to RMM): 1.0E-2
- Release fraction to soil from process (initial release prior to RMM): 0.0001
- Release fraction to wastewater from process (initial release prior to RMM): 2.0E-5

**Technical conditions and measures at process level (source) to prevent release:**

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

**Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil:**

- Risk from environmental exposure is driven by freshwater sediment. Prevent discharge of undissolved substance to or recover from onsite wastewater. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.

**Technical conditions and measures at municipal sewage treatment plant:**

- Estimated substance removal from wastewater via on-site sewage treatment: 94.1
- Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs: 94.1
- Maximum allowable site tonnage ($M_{safe}$) based on release following total wastewater treatment removal: 6.8E5

**Organisational measures to prevent/limit release from site:**

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

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Aral Heizöl EL / Aral HeizölPlus / Aral HeizölEcoPlus  Gas Oils (vacuum, hydrocracked & distillate fuels) R20, R38, R40, R65, R51/53 Formulation and (re)packing of substances and mixtures - Industrial

20/27
Conditions and measures related to external treatment of waste for disposal:
External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:
External recovery and recycling of waste should comply with applicable local and/or national regulations.

Assumed on-site sewage treatment plant flow
Assumed on-site sewage treatment plant flow:
2000

Conditions and measures related to external treatment of waste for disposal:
External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:
External recovery and recycling of waste should comply with applicable local and/or national regulations.

RCR - Air Compartment Driven:
5.03E-02

RCR - Water Compartment Driven:
1.47E-01

Section 3: Exposure estimation

Exposure estimation and reference to its source - Environment
Exposure assessment (environment):
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure estimation and reference to its source - Workers
Exposure assessment (human):
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: Guidance to check compliance with the exposure scenario

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 on-site/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.

Health
Predicted exposures are not expected to exceed the applicable consumer reference values when the operational conditions/risk management measures given 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 enable the derivation of a DNEL for dermal irritant effects. Risk management measures are based on qualitative risk characterisation.
## Annex to the extended Safety Data Sheet (eSDS)

### Identification of the substance or mixture

<table>
<thead>
<tr>
<th>Product definition</th>
<th>Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td>SGY2152</td>
</tr>
<tr>
<td>Product name</td>
<td>Aral Heizöl EL / Aral HeizölPlus / Aral HeizölEcoPlus</td>
</tr>
</tbody>
</table>

### Section 1: Title

<table>
<thead>
<tr>
<th>Short title of the exposure scenario</th>
<th>Gas Oils (vacuum, hydrocracked &amp; distillate fuels) R20, R38, R40, R65, R51/53 Use as a fuel - Industrial</th>
</tr>
</thead>
</table>
| List of use descriptors             | Identified use name: Use as a fuel - Industrial  
Process Category: PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC16  
Sector of end use: SU03  
Subsequent service life relevant for that use: No.  
Environmental Release Category: ERC07  
Specific Environmental Release Category: ESVOC SpERC 7.12a.v1 |

| Processes and activities covered by the exposure scenario | Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste. |
| Assessment Method | See Section 3 |

### Section 2 Operational conditions and risk management measures

#### Section 2.1 Control of worker exposure

**Product characteristics:**

| Physical state: | Liquid, vapour pressure < 0.5 kPa at STP |
| Concentration of substance in product: | Covers percentage substance in the product up to 100% (unless stated differently). |
| Frequency and duration of use: | Covers daily exposures up to 8 hours (unless stated differently) |
| Other given operational conditions affecting workers exposure: | Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented |

**Contributing scenarios: Operational conditions and risk management measures**

General measures applicable to all activities: Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance.

Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; ensure suitable personal protective equipment is available; clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

General measures (skin irritants): Avoid all skin contact with product, clean up contamination/spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately, provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

Bulk transfers: Wear suitable gloves tested to EN374.

Drum/batch transfers: Wear suitable gloves tested to EN374.

Use as a fuel closed systems: No other specific measures identified.

Equipment cleaning and maintenance: Drain down system prior to equipment break-in or maintenance. Wear chemical-resistant gloves (tested to EN374) in combination with ‘basic’ employee training.

Storage: Handle substance within a closed system.
Section 2.2: Control of environmental exposure

Product characteristics: Substance is complex UVCB. Predominantly hydrophobic

Amounts used:
- Fraction of EU tonnage used in region: 0.1
- Regional use tonnage: 4.5E6
- Fraction of Regional tonnage used locally: 0.34
- Annual site tonnage: 1.5E6
- Maximum daily site tonnage: 5.0E6

Frequency and duration of use: Continuous release

Emission Days (days/year): 300

Environment factors not influenced by risk management:
- Local freshwater dilution factor: 10
- Local marine water dilution factor: 100
- Release fraction to air from process (initial release prior to RMM): 5.0E-3
- Release fraction to soil from process (initial release prior to RMM): 0
- Release fraction to wastewater from process (initial release prior to RMM): 0.00001

Technical conditions and measures at process level (source) to prevent release: Common practices vary across sites thus conservative process release estimates used.

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil:
- Treat air emission to provide a typical removal efficiency of: 95
- Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of: 97.7
- If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of: 60.4

Organisational measures to prevent/limit release from site:
- Prevent discharge of undissolved substance to or recover from onsite wastewater. Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant:
- Estimated substance removal from wastewater via on-site sewage treatment: 94.1
- Total efficiency of removal from wastewater after on-site and off-site (domestic treatment plant) RMMs: 97.7
- Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal: 5.0E6
- Assumed on-site sewage treatment plant flow: 2000

Conditions and measures related to external treatment of waste for disposal:
- Combustion emissions limited by required exhaust emission controls.
- Combustion emissions considered in regional exposure assessment.

Conditions and measures related to external recovery of waste:
- External recovery and recycling of waste should comply with applicable local and/or national regulations.

RCR - Air Compartment Driven: 6.32E-02
RCR - Water Compartment Driven: 9.09E-01
Section 3: Exposure estimation

<table>
<thead>
<tr>
<th>Exposure estimation and reference to its source - Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure assessment (environment):</td>
</tr>
<tr>
<td>The Hydrocarbon Block Method has been used to calculate</td>
</tr>
<tr>
<td>environmental exposure with the Petrorisk model.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exposure estimation and reference to its source - Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure assessment (human):</td>
</tr>
<tr>
<td>The ECETOC TRA tool has been used to estimate workplace</td>
</tr>
<tr>
<td>exposures unless otherwise indicated.</td>
</tr>
</tbody>
</table>

Section 4: Guidance to check compliance with the exposure scenario

<table>
<thead>
<tr>
<th>Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guidance is based on assumed operating conditions which may not</td>
</tr>
<tr>
<td>be applicable to all sites; thus, scaling may be necessary to define</td>
</tr>
<tr>
<td>appropriate site-specific risk management measures. Required</td>
</tr>
<tr>
<td>removal efficiency for wastewater can be achieved using onsite/</td>
</tr>
<tr>
<td>offsite technologies, either alone or in combination. Required removal</td>
</tr>
<tr>
<td>efficiency for air can be achieved using on-site technologies, either</td>
</tr>
<tr>
<td>alone or in combination. Further details on scaling and control</td>
</tr>
<tr>
<td>technologies are provided in SpERC factsheet.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicted exposures are not expected to exceed the applicable</td>
</tr>
<tr>
<td>consumer reference values when the operational conditions/risk</td>
</tr>
<tr>
<td>management measures given in section 2 are implemented.</td>
</tr>
</tbody>
</table>

| 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. |

Aral Heizöl EL / Aral HeizölPlus / Aral HeizölEcoPlus  Gas Oils (vacuum, hydrocracked & distillate fuels) R20, R38, R40, R65, R51/53 Use as a fuel - Industrial
### Annex to the extended Safety Data Sheet (eSDS)

#### Identification of the substance or mixture

<table>
<thead>
<tr>
<th>Product definition</th>
<th>Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td>SGY2152</td>
</tr>
<tr>
<td>Product name</td>
<td>Aral Heizöl EL / Aral HeizölPlus / Aral HeizölEcoPlus</td>
</tr>
</tbody>
</table>

#### Section 1: Title

**Short title of the exposure scenario:**
Gas Oils (vacuum, hydrocracked & distillate fuels) R20, R38, R40, R65, R51/53 Use as a fuel - Professional

**List of use descriptors:**
Identified use name: Use as a fuel - Professional

<table>
<thead>
<tr>
<th>Process Category</th>
<th>PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sector of end use</td>
<td>SU22</td>
</tr>
<tr>
<td>Subsequent service life relevant for that use</td>
<td>No.</td>
</tr>
<tr>
<td>Environmental Release Category: ERC09a, ERC09b</td>
<td></td>
</tr>
<tr>
<td>Specific Environmental Release Category: ESVOC SpERC 9.12b.v1</td>
<td></td>
</tr>
</tbody>
</table>

**Processes and activities covered by the exposure scenario:**
Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

**Assessment Method:**
See Section 3

#### Section 2 Operational conditions and risk management measures

**Section 2.1 Control of worker exposure**

**Product characteristics:**

<table>
<thead>
<tr>
<th>Physical state:</th>
<th>Liquid, vapour pressure &lt; 0.5 kPa at STP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concentration of substance in product:</td>
<td>Covers percentage substance in the product up to 100% (unless stated differently).</td>
</tr>
<tr>
<td>Frequency and duration of use:</td>
<td>Covers daily exposures up to 8 hours (unless stated differently)</td>
</tr>
<tr>
<td>Other given operational conditions affecting workers exposure:</td>
<td>Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented</td>
</tr>
</tbody>
</table>

**Contributing scenarios: Operational conditions and risk management measures**

General measures applicable to all activities: Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance.

Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; ensure suitable personal protective equipment is available; clean up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

General measures (skin irritants): Avoid all skin contact with product, clean up contamination/spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

Bulk transfers: Wear suitable gloves tested to EN374.

Drum/batch transfers: Use drum pumps or carefully pour from container. Wear suitable gloves tested to EN374.

Refuelling: Wear suitable gloves tested to EN374.

Use as a fuel 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.

Equipment cleaning and maintenance: Drain down system prior to equipment break-in or maintenance. Wear chemical-resistant gloves (tested to EN374) in combination with ‘basic’ employee training.

Storage: Store substance within a closed system.
Section 2.2: Control of environmental exposure

Product characteristics: Substance is complex UVCB. Predominantly hydrophobic

Amounts used:
- Fraction of EU tonnage used in region: 0.1
- Regional use tonnage: 6.7E6
- Fraction of Regional tonnage used locally: 0.0005
- Annual site tonnage: 3.3E3
- Maximum daily site tonnage: 9.2E3

Frequency and duration of use: Continuous release

Environment factors not influenced by risk management:
- Local freshwater dilution factor: 10
- Local marine water dilution factor: 100
- Release fraction to air from process (initial release prior to RMM): 1.0E-4
- Release fraction to soil from process (initial release prior to RMM): 0.00001
- Release fraction to wastewater from process (initial release prior to RMM): 0.00001

Technical conditions and measures at process level (source) to prevent release:
- Common practices vary across sites thus conservative process release estimates used.

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil:
- Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).
  - No wastewater treatment required.

Organisational measures to prevent/limit release from site:
- Prevent discharge of undissolved substance to or recover from onsite wastewater. Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant:
- Treat air emission to provide a typical removal efficiency of
- Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of
- If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of

Organisational measures to prevent/limit release from site:
- Not applicable.

Conditions and measures related to external treatment of waste for disposal:
- Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment.
- External recovery and recycling of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste:
- RCR - Air Compartment Driven: 5.45E-03
- RCR - Water Compartment Driven: 5.99E-02
Section 3: Exposure estimation

<table>
<thead>
<tr>
<th>Exposure estimation and reference to its source - Environment</th>
<th>The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure estimation and reference to its source - Workers</td>
<td>The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.</td>
</tr>
</tbody>
</table>

Section 4: Guidance to check compliance with the exposure scenario

<table>
<thead>
<tr>
<th>Environment</th>
<th>Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>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.</td>
</tr>
</tbody>
</table>

Aral Heizöl EL / Aral HeizölPlus / Aral HeizölEcoPlus Gas Oils (vacuum, hydrocracked & distillate fuels) R20, R38, R40, R65, R51/53 Use as a fuel - Professional