

SAFETY DATA SHEET

Q8 Fuelolie 45



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

1.1 Product identifier

Product name : Q8 Fuelolie 45

Index number : 649-024-00-9

EC number : 270-675-6

REACH Registration number

| Registration number | Legal entity |
|-----------------------|--------------|
| 01-2119474894-22-0003 | KPISCO |
| 01-2119474894-22-0023 | KPISCO |

CAS number : 68476-33-5

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

Material uses : Fuel for heating equipment

| Identified uses | |
|--|--------|
| Formulation and (re)packing of substances and mixtures; Closed systems Use in fuel; Industrial; Closed systems Use in fuel; Professional; Closed systems | |
| Uses advised against | Reason |
| Use in coatings - Professional | - |
| Use in road and construction products - Professional | - |

1.3 Details of the supplier of the safety data sheet

Supplier : Q8 Danmark A/S
Arne Jacobsens Allé 17
2300 København S, Danmark
Tel.: +45 7012 4545
Email: produktteknik@Q8.dk
Web: www.Q8.dk

Manufacturer / Distributor : Kuwait Petroleum Belgium N.V./S.A. / Q8Oils Italia S.r.l.
Petroleumkaai 7 Via Volpedo 2
B-2020 Antwerp 15050 Castellar Guidobono (AL)
Belgium Italy

e-mail address of person responsible for this SDS : SDSinfo@Q8.com, communication preferably in English only.

PCN Information contact : PCNinfo@Q8.com, communication preferably in English only.

1.4 Emergency telephone number

Denmark : +45 8988 2286

Europe : +44 (0) 1235 239 670

Global (English only) : +44 (0) 1865 407 333

National advisory body/Poison Center

Denmark : Bispebjerg Hospital - poison line : +45 8212 1212



SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : UVCB

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

| | | |
|--|-------------|------|
| ACUTE TOXICITY (inhalation) | Category 4 | H332 |
| CARCINOGENICITY | Category 1B | H350 |
| TOXIC TO REPRODUCTION | Category 2 | H361 |
| SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) | Category 2 | H373 |
| ASPIRATION HAZARD | Category 1 | H304 |
| AQUATIC HAZARD (ACUTE) | Category 1 | H400 |
| AQUATIC HAZARD (LONG-TERM) | Category 1 | H410 |

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

Ingredients of unknown toxicity : None.

Ingredients of unknown ecotoxicity : None.

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

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

2.2 Label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H304 - May be fatal if swallowed and enters airways.
H332 - Harmful if inhaled.
H350 - May cause cancer.
H361 - Suspected of damaging fertility or the unborn child.
H373 - May cause damage to organs through prolonged or repeated exposure.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : P201 - Obtain special instructions before use.
P260 - Do not breathe dust/fume/gas/mist/vapors/spray.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

Response : P308 + P313 - IF exposed or concerned: Get medical advice or attention.

Storage : Not applicable.

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

Hazardous ingredients : Fuel oil, residual

Supplemental label elements : Repeated exposure may cause skin dryness or cracking.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Restricted to professional users.

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

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SECTION 2: Hazards identification

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

| | | | | | | |
|-----|-----|-----|-----|------|-----|-----|
| PBT | P | B | T | vPvB | vP | vB |
| N/A | N/A | N/A | Yes | N/A | N/A | N/A |

Other hazards which do not result in classification

: Prolonged or repeated contact may dry skin and cause irritation.
Hazardous concentrations of hydrogen sulphide (H₂S) gas may accumulate in the vapour space of storage vessels. Standard procedures for opening or entering tanks, vessels or other containers must strictly be followed to avoid inhalation of this acutely toxic gas.

SECTION 3: Composition/information on ingredients

3.1 Substances

: UVCB

| Product/ingredient name | Identifiers | % | Classification | Specific Conc. Limits, M-factors and ATEs | Type |
|-------------------------|---|-----|--|---|------|
| Fuel oil, residual | REACH #: 01-2119474894-22 EC: 270-675-6 CAS: 68476-33-5 Index: 649-024-00-9 | 100 | Acute Tox. 4, H332 Carc. 1B, H350 Repr. 2, H361 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 EUH066 See Section 16 for the full text of the H statements declared above. | ATE [Inhalation (dusts and mists)] = 4.1 mg/l M [Acute] = 1 M [Chronic] = 1 | [1] |

The mineral base oils contained in this product are severely refined and contain less than 3% DMSO extract according to IP 346 method, and are therefore not classified as carcinogen according to Regulation (EC) No 1272/2008, note L.

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type

[1] Constituent

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact

: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation

: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If exposure to hydrogen sulphide is suspected or cannot be excluded, obtain medical attention IMMEDIATELY. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

SECTION 4: First aid measures

- Skin contact** : Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- 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. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
dryness
cracking
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, alcohol-resistant foam or water spray (fog).
- Unsuitable extinguishing media** : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

SECTION 5: Firefighting measures

Hazards from the substance or mixture : In a fire or if heated, a pressure increase will occur and the container may burst. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous combustion products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur oxides
Hydrogen sulphide

5.3 Advice for firefighters

Special protective actions 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.

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 : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

: Avoid dispersal of spilled 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 materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. 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. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

6.4 Reference to other sections

: See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
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 (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. 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 vapor or mist. Do not swallow. Avoid release to the environment. 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. Empty containers retain product residue and can be hazardous. Do not reuse container. Hazardous concentrations of hydrogen sulphide (H₂S) gas may accumulate in the vapour space of storage vessels. Standard procedures for opening or entering tanks, vessels or other containers must strictly be followed to avoid inhalation of this acutely toxic gas.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. 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 original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. 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. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Provide adequate ventilation. See Section 10 for incompatible materials before handling or use.

Seveso Directive - Reporting thresholds

Named substances

| Name | Notification and MAPP threshold | Safety report threshold |
|--|---------------------------------|-------------------------|
| Petroleum products and alternative fuels (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams) (d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d) | 2500 tonne | 25000 tonne |

7.3 Specific end use(s)

- Recommendations** : Not available.
- Industrial sector specific solutions** : Not available.

SECTION 8: Exposure controls/personal protection

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

No exposure limit value known.

Biological exposure indices

No exposure indices known.

SECTION 8: Exposure controls/personal protection

Recommended monitoring procedures : 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.

DNELs/DMELs

| Product/ingredient name | Type | Exposure | Value | Population | Effects |
|-------------------------|------|-----------------------|--------------------------|--------------------|----------|
| Fuel oil, residual | DNEL | Long term Oral | 0.015 mg/kg bw/day | General population | Systemic |
| | DNEL | Long term Dermal | 0.065 mg/kg bw/day | Workers | Systemic |
| | DNEL | Long term Inhalation | 0.18 mg/m ³ | Workers | Systemic |
| | DNEL | Short term Inhalation | 4716.8 mg/m ³ | Workers | Systemic |

PNECs

No PNECs available.

8.2 Exposure controls

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Product may release hydrogen sulphide: a specific assessment of inhalation risks from the presence of hydrogen sulphide in tank headspaces, confined spaces, product residue, tank waste and waste water and unintentional releases should be made to help determine controls appropriate to local circumstances.

Individual protection measures

Hygiene measures : Do not ingest. If swallowed then seek immediate medical assistance.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. Wear suitable gloves tested to EN374. Recommended: < 1 hour (breakthrough time): nitrile rubber 0.17 mm. Provide employee with skin care programmes.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

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SECTION 8: Exposure controls/personal protection

- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: Boiling point > 65 °C: A1; Boiling point < 65 °C: AX1; Hot material: A1P2.
- 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

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

Appearance

- Physical state** : Liquid. [Viscous liquid.]
- Appearance** : Opaque.
- Color** : Black.
- Odor** : Characteristic.
- Odor threshold** : Not applicable.
- Melting point/freezing point** : <30°C (<86°F) [ISO 3016]
- Initial boiling point and boiling range** : 202 to 511°C (395.6 to 951.8°F) [ASTM D 1160]
- Flammability** : Not applicable.
- Lower and upper explosion limit** : Lower: 1%
Upper: 6%
- Flash point** : Closed cup: >60°C (>140°F) [ISO 2719]
Open cup: >60°C (>140°F) [ASTM D92.]
- Auto-ignition temperature** : 250 to 537°C (482 to 998.6°F) [ASTM E 659]
- Decomposition temperature** : >220°C
- pH** : 7
- Viscosity** : Kinematic (100°C (212°F)): 34.35 mm²/s (34.35 cSt)
- Solubility(ies)** :

| Media | Result |
|------------|-------------|
| cold water | Not soluble |
| hot water | Not soluble |

- Solubility in water** : 0.0004 g/l
- Partition coefficient: n-octanol/ water** : 4 to 6
- Vapor pressure** : <0.1 kPa (<0.76 mm Hg)
- Relative density** : 0.99
- Vapor density** : Not available.
- Explosive properties** : Not applicable.
- Oxidizing properties** : Not applicable.
- Particle characteristics**
- Median particle size** : Not applicable.

9.2 Other information

9.2.1 Information with regard to physical hazard classes

- Explosive properties** : Not applicable.

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SECTION 9: Physical and chemical properties

Oxidizing properties : Not applicable.

9.2.2 Other safety characteristics

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

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).

10.5 Incompatible materials : Reactive or incompatible with the following materials:
Strong oxidizing materials

10.6 Hazardous decomposition products : Decomposition products may include the following materials: sulfur oxides
Hydrogen sulphide

SECTION 11: Toxicological information

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

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|-------------------------|---------------------------------|-----------------------|------------------------|----------|
| Fuel oil, residual | LC50 Inhalation Dusts and mists | Rat - Male, Female | 4100 mg/m ³ | 4 hours |
| | LD50 Dermal | Rabbit - Male, Female | >2000 mg/kg | - |
| | LD50 Oral | Rat - Female | 4320 mg/kg | - |

Conclusion/Summary : Not available.

Acute toxicity estimates

| Product/ingredient name | Oral (mg/kg) | Dermal (mg/kg) | Inhalation (gases) (ppm) | Inhalation (vapors) (mg/l) | Inhalation (dusts and mists) (mg/l) |
|-------------------------|--------------|----------------|--------------------------|----------------------------|-------------------------------------|
| Fuel oil, residual | 4320 | N/A | N/A | N/A | 4.1 |

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|-------------------------|------------------------------------|---------|-------|----------|-------------|
| Fuel oil, residual | Eyes - Redness of the conjunctivae | Rabbit | 1.7 | - | 72 hours |
| | Skin - Edema | Rat | 0.7 | 24 hours | 7 days |

Conclusion/Summary : Not available.

Sensitization

| Product/ingredient name | Route of exposure | Species | Result |
|-------------------------|-------------------|---------|-----------------|
| Fuel oil, residual | skin | Rat | Not sensitizing |

Conclusion/Summary

Skin : Not sensitizing

Mutagenicity

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SECTION 11: Toxicological information

| Product/ingredient name | Test | Experiment | Result |
|-------------------------|---|---|----------|
| Fuel oil, residual | 476 <i>In vitro</i> Mammalian Cell Gene Mutation Test | Experiment: In vitro Subject: Mammalian-Animal | Positive |
| | 476 <i>In vitro</i> Mammalian Cell Gene Mutation Test | Experiment: In vivo Subject: Mammalian-Animal | Negative |

Conclusion/Summary : Not available.

Carcinogenicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|-------------------------|------------------------|-------------------------|------------|-----------------|
| Fuel oil, residual | Positive - Dermal - TC | Mouse - Male, Female | 1000 mg/kg | 2 days per week |

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|-------------------------|-------------------|-----------------------|------------|-----------------|
| Fuel oil, residual | Positive - Dermal | Rat - Male, Female | 0.05 mg/kg | 6 hours per day |

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

| Product/ingredient name | Category | Route of exposure | Target organs |
|-------------------------|------------|-------------------|---------------|
| Fuel oil, residual | Category 2 | - | - |

Aspiration hazard

| Product/ingredient name | Result |
|-------------------------|--------------------------------|
| Fuel oil, residual | ASPIRATION HAZARD - Category 1 |

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : Harmful if inhaled.

Skin contact : Defatting to the skin. May cause skin dryness and irritation.

Ingestion : May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
dryness
cracking
reduced fetal weight
increase in fetal deaths
skeletal malformations

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SECTION 11: Toxicological information

Ingestion : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

| Product/ingredient name | Result | Species | Dose | Exposure |
|-------------------------|--------------------------|-----------------------|------------|---------------------------|
| Fuel oil, residual | Sub-chronic NOAEL Dermal | Rat - Male, Female | 1.06 mg/kg | 13 weeks; 5 days per week |

Conclusion/Summary : Not available.

General : May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : Suspected of damaging fertility or the unborn child.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Not available.

11.2.2 Other information

Not available.

SECTION 12: Ecological information

12.1 Toxicity

| Product/ingredient name | Result | Species | Exposure |
|-------------------------|---|--------------------------|----------------------------------|
| Fuel oil, residual | Acute EC50 0.75 mg/l Fresh water Acute EC50 2 mg/l Fresh water Acute LC50 79 mg/l Fresh water | Algae Daphnia Fish | 72 hours 48 hours 96 hours |

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Conclusion/Summary : Not available.

12.3 Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|-------------------------|--------------------|-----|-----------|
| Fuel oil, residual | 4 to 6 | - | High |

12.4 Mobility in soil

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SECTION 12: Ecological information

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

| Product/ingredient name | PBT | P | B | T | vPvB | vP | vB |
|-------------------------|-----|-----|-----|-----|------|-----|-----|
| Fuel oil, residual | N/A | N/A | N/A | Yes | N/A | N/A | N/A |

12.6 Endocrine disrupting properties

Not available.

12.7 Other adverse effects

No known significant effects or critical hazards.

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 : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Yes.

European waste catalogue (EWC)

| Waste code | Waste designation |
|------------|---------------------|
| 13 07 01* | fuel oil and diesel |

Packaging

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

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. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

| | ADR/RID | ADN | IMDG | IATA |
|-------------------------------------|--|--|--|--|
| 14.1 UN number or ID number | UN3082 | UN3082 | UN3082 | UN3082 |
| 14.2 UN proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fuel oil, residual) | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fuel oil, residual) | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fuel oil, residual) | Environmentally hazardous substance, liquid, n.o.s. (Fuel oil, residual) |
| | | | | |

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SECTION 14: Transport information

| | | | | |
|--|-------|-------|-------|-------|
| 14.3 Transport hazard class(es) | 9 | 9 | 9 | 9 |
| 14.4 Packing group | III | III | III | III |
| 14.5 Environmental hazards | Yes. | Yes. | Yes. | Yes. |

Additional information

ADR/RID : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
Hazard identification number 90
Limited quantity 5 L
Special provisions 274, 335, 601
Tunnel code (E)

ADN : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
Special provisions 274, 601, 335

IMDG : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
Emergency schedules F-A, S-F
Special provisions 274, 335

IATA : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.
Quantity limitation Passenger and Cargo Aircraft: 450 L. Packaging instructions: 964. Cargo Aircraft Only: 450 L. Packaging instructions: 964. Limited Quantities - Passenger Aircraft: 30 kg. Packaging instructions: Y964.
Special provisions A97, A158

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Maritime transport in bulk according to IMO instruments : Not available.

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 authorization](#)

[Annex XIV](#)

None of the components are listed.

[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](#)

Q8 Fuelolie 45

SECTION 15: Regulatory information

| Product/ingredient name | % | Designation [Usage] |
|-------------------------|-----|---------------------|
| Fuel oil, residual | 100 | 3 28 |

Labeling : Restricted to professional users.

Other EU regulations

Industrial emissions (integrated pollution prevention and control) - Air : Not listed

Industrial emissions (integrated pollution prevention and control) - Water : Not listed

Explosive precursors : Not applicable.

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Persistent Organic Pollutants

Not listed.

Seveso Directive

This product is controlled under the Seveso Directive.

Named substances

| Name |
|--|
| Petroleum products and alternative fuels (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams) (d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d) |

National regulations

Denmark

Product registration number : PR-nr: 1693161

Danish fire class : III-2

Executive Order No. 1795/2015

| Ingredient name | Annex I Section A | Annex I Section B |
|--------------------|-------------------|-------------------|
| Fuel oil, residual | Listed | Carc. 1B, H350 |

MAL-code : 5-6

Protection based on MAL : **According to the regulations on work involving coded products, the following stipulations apply to the use of personal protective equipment:**

General: Gloves must be worn for all work that may result in soiling. Apron/coveralls/protective clothing must be worn when soiling is so great that regular work clothes do not adequately protect skin against contact with the product. A face shield must be worn in work involving spattering if a full mask is not required. In this case, other recommended use of eye protection is not required.

In all spraying operations in which there is return spray, the following must be worn: respiratory protection and arm protectors/apron/coveralls/protective clothing as appropriate or as instructed.

SECTION 15: Regulatory information

MAL-code: 5-6

Application: When using scraper or knife, brush, roller etc. for pre- and post-treatments in a spray booth where the operator is outside the spray zone and when working in similar new* facilities of the combined-cabin, spray-cabin and spray-booth type where the operator is working inside the spray zone. When spraying in new* booths and cabins with non-atomizing guns.

- Protective clothing must be worn.

During non-atomizing spraying in existing* facilities of the combined-cabin, spray-cabin and spray-booth type where the operator is working inside the spray zone. When spraying in existing* spray booths, if the operator is outside the spray zone. When using scraper or knife, brush, roller, etc. for pre- and post-treatments in cabins or booths of the existing* facility type, if the operator is inside the spray zone. When using scraper or knife, brush, roller, etc. for pre- and post-treatments outside a closed facility, spray booth or spray cabin. During downtimes, cleaning and repair of closed facilities, spray booths or cabins, if there is a risk of contact with wet paint or organic solvents.

- Air-supplied full mask and protective clothing must be worn.

When spraying in new* booths if the operator is outside the spray zone.

- Air-supplied full mask must be worn.

During all spraying where atomization occurs in cabins or spray booths where the operator is inside the spray zone and during spraying outside a closed facility, cabin or booth.

- Air-supplied full mask, protective clothing and hood must be worn.

Drying: Items for drying/drying ovens that are temporarily placed on such things as rack trolleys, etc. must be equipped with a mechanical exhaust system to prevent fumes from wet items from passing through workers' inhalation zone.

Polishing: When polishing treated surfaces, a mask with dust filter must be worn. When machine grinding, eye protection must be worn. Work gloves must always be worn.

Caution The regulations contain other stipulations in addition to the above.

*See Regulations.

Restrictions on use : Not to be used by professional users below 18 years of age. See the National Working Environment Authorities Executive Order regarding Young People At Work.

Carcinogenic waste : Waste containers must be labeled: Contains a substance or substances regulated by Danish working environment legislation on cancer risks.

Germany

Hazard class for water (WGK) : 3

Switzerland

VOC content : VOC (w/w): 100%

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Q8 Fuelolie 45

SECTION 15: Regulatory information

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

| | |
|---------------------------------|--|
| Australia | : This material is listed or exempted. |
| Canada | : This material is listed or exempted. |
| China | : This material is listed or exempted. |
| Eurasian Economic Union | : Russian Federation inventory : This material is listed or exempted. |
| Japan | : Japan inventory (CSCL) : Not determined. Japan inventory (ISHL) : Not determined. |
| New Zealand | : This material is listed or exempted. |
| Philippines | : Not determined. |
| Republic of Korea | : Not determined. |
| Taiwan | : This material is listed or exempted. |
| Thailand | : Not determined. |
| Turkey | : This material is listed or exempted. |
| United States of America | : This material is active or exempted. |
| Viet Nam | : This material is listed or exempted. |

15.2 Chemical Safety Assessment : Complete.

SECTION 16: Other information

🔍 Indicates information that has changed from previously issued version.

| | |
|-----------------------------------|--|
| 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 ASTM = American Society for Testing and Materials ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor CAS = Chemical Abstracts Service CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008] DIN = German Institute for Standardization DMEL = Derived Minimal Effect Level DNEL = Derived No Effect Level EC = European Commission EC50 = Half maximal effective concentration EN = European Standard (Norm) EUH statement = CLP-specific Hazard statement GHS - Globally Harmonized System of Classification and Labeling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IC50 = Half maximal inhibitory concentration IMDG = International Maritime Dangerous Goods IMO = International Maritime Organisation ISO = International Organization for Standardization LC50 = Median lethal concentration LD50 = Median lethal dose LOAEL / LOAEC = Lowest Observed Adverse Effect Level / Concentration |
|-----------------------------------|--|

SECTION 16: Other information

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 N/A = Not available
 NOAEL / NOAEC = No Observed Adverse Effect Level / Concentration
 NOEL / NOEC = No Observed Effect Level / Concentration
 OECD = Organisation for Economic Co-operation and Development
 OEL = Occupational Exposure Limit
 PBT = Persistent, Bioaccumulative and Toxic
 PNEC = Predicted No Effect Concentration
 REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation [Regulation (EC) No. 1907/2006]
 RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
 SDS = Safety Data Sheet
 SVHC = Substances of Very High Concern
 STEL = Short Term Exposure Limit
 TLV = Threshold Limit Value
 TWA = Time Weighted Average
 UFI = Unique Formula Identifier
 UN = United Nations
 VOC = Volatile Organic Compound
 vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

| Classification | Justification |
|---|---|
| Acute Tox. 4, H332 Carc. 1B, H350 Repr. 2, H361 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 | On basis of test data Expert judgment Expert judgment Expert judgment Expert judgment Expert judgment Expert judgment |

The mineral base oils contained in this product are severely refined and contain less than 3% DMSO extract according to IP 346 method, and are therefore not classified as carcinogen according to Regulation (EC) No 1272/2008, note L.

Note L: The classification as a carcinogen need not apply if it can be shown that the substance contains less than 3 % DMSO extract as measured by IP 346 "Determination of polycyclic aromatics in unused lubricating base oils and asphaltene free petroleum fractions — Dimethyl sulphoxide extraction refractive index method", Institute of Petroleum, London. This note applies only to certain complex oil-derived substances in Part 3.

Full text of abbreviated H statements

| | |
|--------|--|
| H304 | May be fatal if swallowed and enters airways. |
| H332 | Harmful if inhaled. |
| H350 | May cause cancer. |
| H361 | Suspected of damaging fertility or the unborn child. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| EUH066 | Repeated exposure may cause skin dryness or cracking. |

Full text of classifications [CLP/GHS]

| | |
|-------------------|---|
| Acute Tox. 4 | ACUTE TOXICITY - Category 4 |
| Aquatic Acute 1 | AQUATIC HAZARD (ACUTE) - Category 1 |
| Aquatic Chronic 1 | AQUATIC HAZARD (LONG-TERM) - Category 1 |
| Asp. Tox. 1 | ASPIRATION HAZARD - Category 1 |
| Carc. 1B | CARCINOGENICITY - Category 1B |
| Repr. 2 | TOXIC TO REPRODUCTION - Category 2 |
| STOT RE 2 | SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 |

Training advice : Ensure operatives are trained to minimise exposures.

Date of printing : 13-12-2023

Q8 Fuelolie 45

SECTION 16: Other information

Date of issue/ Date of revision : 13-12-2023
Date of previous issue : 05-09-2018
Version : 1.06
Prepared by : Kuwait Petroleum Research & Technology B.V., The Netherlands
Notice to reader

The information in this SDS is based on the present state of our knowledge and on current laws. The product is not to be used for purposes other than those specified under section 1 without first obtaining written handling instructions. It is always the responsibility of the user to take all necessary steps to fulfill the demands set out in the local rules and legislation. The information in this SDS is meant to be a description of the safety requirements for our product. It is not to be considered a guarantee of the product's properties.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : UVCB
Product name : Q8 Fuelolie 45

Section 1 - Title

Short title of the exposure scenario : Formulation and (re)packing of substances and mixtures; Closed systems

List of use descriptors : **Identified use name:** Formulation and (re)packing of substances and mixtures; Closed systems
Process Category: PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC15, PROC28
Substance supplied to that use in form of: As such
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC02, ESVOC SPERC 2.2.v1
Market sector by type of chemical product: PC13
Article category related to subsequent service life: Not applicable.

| | |
|--|---|
| Processes and activities covered by the exposure scenario | : Formulation of the substance and its mixtures in batch or continuous operations within closed or contained systems, including incidental exposures during storage, materials transfers, mixing, maintenance, sampling and associated laboratory activities. |
| Additional information | : See section 3. |

Section 2 - Exposure controls

| | |
|--|---|
| Contributing scenario controlling environmental exposure for 1: | |
| Product characteristics | : Substance is complex UVCB.. Predominantly hydrophobic |
| Amounts used | : Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 7.1E+06 Fraction of regional tonnage used locally: 4.2E-03 Annual site tonnage (tonnes/year): 3.0E+04 Maximum daily site tonnage (kg/day): 1.0E+05 |
| Frequency and duration of use | : Continuous release Emission days: 300 |
| Environment factors not influenced by risk management | : Local freshwater dilution factor 10 Local marine water dilution factor 100 |
| Other conditions affecting environmental exposure | : Release fraction to air from process (after typical onsite RMMs consistent with EU Solvent Emissions Directive requirements): 2.5E-04 Release fraction to wastewater from process (initial release prior to RMM): 8.0E-06 Release fraction to soil from process (initial release prior to RMM): 0.0001 |
| Technical conditions and measures at process level (source) to prevent release | : Common practices vary across sites thus conservative process release estimates used. |
| 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). Prevent discharge of undissolved substance to or recover from onsite wastewater. If discharging to municipal sewage treatment plant, no on-site wastewater treatment required. Treat air emission to provide a typical removal efficiency of (%): 0.0E+00 Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%): 89.4 If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of >= (%): 0.0 |

| | |
|--|---|
| Organizational measures to prevent/limit release from site | : Do not apply industrial sludge to natural soils. Sewage sludge should be incinerated, contained or reclaimed. |
| Conditions and measures related to sewage treatment plant | : Not applicable as there is no release to wastewater. Estimated substance removal from wastewater via on-site sewage treatment (%): 90.6 Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs (%): 90.6 Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/d): $1.0E+05$ Assumed on-site sewage treatment plant flow (m ³ /d): $2.0E+03$ |
| 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. |

Contributing scenario controlling worker exposure for 2:

General measures (carcinogens): Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Access to work area only for authorized persons. Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training. Wear suitable coveralls to prevent exposure to the skin. Wear respiratory protection when its use is identified for certain contributing scenarios. For further specification, refer to section 8 of the SDS. Clear spills immediately. Dispose of this material and its container at hazardous or special waste collection point. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Ensure control measures are regularly inspected and maintained. Consider the need for risk-based health surveillance.

General measures (aspiration): Do not ingest. If swallowed then seek immediate medical assistance.

General exposures (closed systems) (PROC_1): Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure. Assumes process temperature up to 90.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Provide employee with skin care programmes.

General exposures (closed systems) (PROC_2): Provide extract ventilation to points where emissions occur. Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure. Assumes process temperature up to 90.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Provide employee with skin care programmes.

General exposures; Batch process; Closed systems (PROC_3): Covers use up to 4.0 h/day. Provide extract ventilation to points where emissions occur. Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure. Assumes process temperature up to 90.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Provide employee with skin care programmes.

Laboratory activities (PROC_15): Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure. Assumes process temperature up to 90.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Provide employee with skin care programmes. Put lids on containers immediately after use.

Marine vessel/barge; on-shore; Bulk transfers; Loading and unloading (PROC_8b): Covers use up to 4.0 h/day. Transfer via enclosed lines. Clear transfer lines prior to de-coupling. Wear a respirator conforming to EN140. Ensure operation is undertaken outdoors. Assumes process temperature up to 90.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Wear suitable coveralls to prevent exposure to the skin. Provide employee with skin care programmes. Ensure no splashing occurs during transfer.

Marine vessel/barge; on-shore; Bulk transfers; Loading and unloading (PROC_8b) [alternative RMMs for PROC_8b, Marine vessel/barge; On-shore): Covers use up to 4.0 h/day. Ensure complete segregation with ventilation and filtration of recirculated air. Transfer via enclosed lines. Clear transfer lines prior to de-coupling. Ensure operation is undertaken outdoors. Assumes process temperature up to 90.0 °C. Additional good practice advice. Obligations

according to Article 37(4) of REACH do not apply. Wear suitable coveralls to prevent exposure to the skin. Provide employee with skin care programmes. Ensure no splashing occurs during transfer.

Marine vessel/barge; off-shore; Bulk transfers; Loading and unloading (PROC_8b): Covers use up to 4.0 h/day. Transfer via enclosed lines. Clear transfer lines prior to de-coupling. Wear a full face respirator conforming to EN136. Ensure operation is undertaken outdoors. Assumes process temperature up to 90.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Wear suitable coveralls to prevent exposure to the skin. Provide employee with skin care programmes. Ensure no splashing occurs during transfer.

Road tanker/rail car; bottom loading; Bulk transfers; Loading and unloading (PROC_8b): Covers use up to 2.0 h/day. Ensure displaced vapours are vented to a safe location. Transfer via enclosed lines. Clear transfer lines prior to de-coupling. Wear a respirator conforming to EN140. Ensure operation is undertaken outdoors. Assumes process temperature up to 60.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Wear suitable coveralls to prevent exposure to the skin. Provide employee with skin care programmes. Ensure no splashing occurs during transfer.

Road tanker/rail car; bottom loading; Bulk transfers; Loading and unloading (PROC_8b) [alternative RMMs for PROC_8b, Road tanker/rail car; Bottom loading]: Covers use up to 2.0 h/day. Vapor recovery system. Transfer via enclosed lines. Clear transfer lines prior to de-coupling. Ensure operation is undertaken outdoors. Assumes process temperature up to 60.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Wear suitable coveralls to prevent exposure to the skin. Provide employee with skin care programmes. Ensure no splashing occurs during transfer.

Road tanker/rail car; top loading; Bulk transfers; Loading and unloading (PROC_8b): Covers use up to 2.0 h/day. Transfer via enclosed lines. Clear transfer lines prior to de-coupling. Wear a respirator conforming to EN140. Ensure operation is undertaken outdoors. Assumes process temperature up to 80.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Wear suitable coveralls to prevent exposure to the skin. Provide employee with skin care programmes. Ensure no splashing occurs during transfer.

Road tanker/rail car; top loading; Bulk transfers; Loading and unloading (PROC_8b) [alternative RMMs for PROC_8b, Road tanker/rail car; Top loading]: Covers use up to 2.0 h/day. Provide extract ventilation to material transfer points and other openings. Transfer via enclosed lines. Clear transfer lines prior to de-coupling. Ensure operation is undertaken outdoors. Assumes process temperature up to 80.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Wear suitable coveralls to prevent exposure to the skin. Provide employee with skin care programmes. Ensure no splashing occurs during transfer.

Road tanker/rail car; top loading; Bulk transfers; Loading and unloading (PROC_8b) [alternative RMMs for PROC_8b, Road tanker/rail car; Top loading]: Covers use up to 2.0 h/day. Ensure complete segregation with ventilation and filtration of recirculated air. Transfer via enclosed lines. Clear transfer lines prior to de-coupling. Ensure operation is undertaken outdoors. Assumes process temperature up to 80.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Wear suitable coveralls to prevent exposure to the skin. Provide employee with skin care programmes. Ensure no splashing occurs during transfer.

Equipment cleaning and maintenance (PROC_8a, PROC_28): Covers use up to 4.0 h/day. Drain down and flush system prior to equipment break-in or maintenance. Wear a respirator conforming to EN140. Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands. For further specification, refer to section 8 of the SDS. Covers use at ambient temperatures. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Wear suitable coveralls to prevent exposure to the skin. Provide employee with skin care programmes. Clean spills immediately.

Storage (PROC_1): Store substance within a closed system. Assumes process temperature up to 90.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Provide employee with skin care programmes.

Storage (PROC_2): Provide extract ventilation to points where emissions occur. Store substance within a closed system. Assumes process temperature up to 90.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Provide employee with skin care programmes.

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %. (unless stated differently)

| | |
|--|---|
| Physical state | : Liquid, vapor pressure < 0.5 kPa at Standard Temperature and Pressure With potential for aerosol generation |
| Frequency and duration of use/exposure | : Covers daily exposures up to 8 hours (unless stated differently) |
| Other conditions affecting workers exposure | : Assumes a good basic standard of occupational hygiene is implemented |

Section 3 - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1:

Exposure assessment (environment): : Hydrocarbon Block Method (Petrorisk)

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 2:

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

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

| | |
|--------------------|---|
| Environment | : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html). Maximum Risk Characterization Ratios for air emissions RCR _{air} : 9.5E-01 Maximum Risk Characterization Ratios for waste water emissions RCR _{water} : 8.8E-01 |
| Health | : Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for carcinogenic effects. Available hazard data do not enable the derivation of a DNEL for aspiration effects. Risk management measures are based on qualitative risk characterisation. |

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : UVCB
Product name : Q8 Fuelolie 45

Section 1 - Title

Short title of the exposure scenario : Use in fuel; Industrial; Closed systems
List of use descriptors : **Identified use name:** Use in fuel; Industrial; Closed systems
Process Category: PROC01, PROC02, PROC08a, PROC08b, PROC16, PROC28
Substance supplied to that use in form of: As such
Subsequent service life relevant for that use: No.
Environmental Release Category: ESVOC SPERC 7.12a.v1, ERC07
Market sector by type of chemical product: PC13
Article category related to subsequent service life: Not applicable.

| | |
|--|---|
| Processes and activities covered by the exposure scenario | : Covers the use as a fuel (or fuel additives and additive components) within closed or contained systems, including incidental exposures during activities associated with its transfer, use, equipment maintenance and handling of waste. |
| Additional information | : See section 3. |

Section 2 - Exposure controls

| | |
|--|--|
| Contributing scenario controlling environmental exposure for 1: | |
| Product characteristics | : Substance is complex UVCB.. Predominantly hydrophobic |
| Amounts used | : Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 5.6E+06 Fraction of regional tonnage used locally: 2.7E-01 Annual site tonnage (tonnes/year): 1.5E+06 Maximum daily site tonnage (kg/day): 5.0E+06 |
| Frequency and duration of use | : Continuous release Emission days: 300 |
| Environment factors not influenced by risk management | : Local freshwater dilution factor 10 Local marine water dilution factor 100 |
| Other conditions affecting environmental exposure | : Release fraction to air from process (after typical onsite RMMs):: 5.0E-03 Release fraction to wastewater from process (initial release prior to RMM): 1.5E-07 Release fraction to soil from process (initial release prior to RMM): 0 |
| Technical conditions and measures at process level (source) to prevent release | : Common practices vary across sites thus conservative process release estimates used. |
| 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). If discharging to municipal sewage treatment plant, no on-site wastewater treatment required. Treat air emission to provide a typical removal efficiency of (%): 9.5E+01 Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%): 89.6 If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of >= (%): 0.0 |
| Organizational measures to prevent/limit release from site | : Do not apply industrial sludge to natural soils. Sewage sludge should be incinerated, contained or reclaimed. |

| | |
|--|---|
| Conditions and measures related to sewage treatment plant | : Not applicable as there is no release to wastewater. Estimated substance removal from wastewater via municipal sewage treatment (%): 90.6 Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs (%): 90.6 Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/d): $5.6E+06$ Assumed on-site sewage treatment plant flow (m ³ /d): $2.0E+03$ |
| 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 treatment and disposal of waste should comply with applicable local and/or national regulations. |
| Conditions and measures related to external recovery of waste | : This substance is consumed during use and no waste from the substance is generated. |

Contributing scenario controlling worker exposure for 2:

General measures (carcinogens): Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Access to work area only for authorized persons. Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training. Wear suitable coveralls to prevent exposure to the skin. Wear respiratory protection when its use is identified for certain contributing scenarios. For further specification, refer to section 8 of the SDS. Clear spills immediately. Dispose of this material and its container at hazardous or special waste collection point. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Ensure control measures are regularly inspected and maintained. Consider the need for risk-based health surveillance.

General measures (aspiration): Do not ingest. If swallowed then seek immediate medical assistance.

General exposures (closed systems) (PROC_1): Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure. Assumes process temperature up to 90.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Provide employee with skin care programmes.

General exposures (closed systems) (PROC_2): Provide extract ventilation to points where emissions occur. Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure. Assumes process temperature up to 90.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Provide employee with skin care programmes.

Bulk transfers; Unloading; Closed systems (PROC_8b): Covers use up to 4.0 h/day. Ensure material transfers are under containment or extract ventilation. Wear a respirator conforming to EN140. Ensure operation is undertaken outdoors. Assumes process temperature up to 90.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Provide employee with skin care programmes.

Drum/batch transfers; Dedicated facility (PROC_8b): Covers use up to 1.0 h/day. Ensure material transfers are under containment or extract ventilation. Assumes process temperature up to 60.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Provide employee with skin care programmes. Ensure no splashing occurs during transfer.

Use in fuel; Closed systems (PROC_16): Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Handle substance within a closed system. Assumes process temperature up to 90.0 °C. Operate activity away from sources of substance emission or release. Assumes large workrooms. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Provide employee with skin care programmes.

Operation of solids filtering equipment (PROC_2): Covers use up to 4.0 h/day. Provide a good standard of controlled ventilation (5 to 10 air changes per hour). Assumes process temperature up to 90.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Provide employee with skin care programmes.

Equipment cleaning and maintenance (PROC_8a, PROC_28): Covers use up to 4.0 h/day. Drain down and flush system prior to equipment break-in or maintenance. Wear a respirator conforming to EN140. Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands. For further specification, refer to section 8 of the SDS. Covers use at

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ambient temperatures. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Wear suitable coveralls to prevent exposure to the skin. Provide employee with skin care programmes. Clean spills immediately.

Storage (PROC_1): Store substance within a closed system. Assumes process temperature up to 90.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Provide employee with skin care programmes.

Storage (PROC_2): Covers use up to 1.0 h/day. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Store substance within a closed system. Assumes process temperature up to 90.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Provide employee with skin care programmes.

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100 %. (unless stated differently)

Physical state : Liquid, vapor pressure < 0.5 kPa at Standard Temperature and Pressure With potential for aerosol generation

Frequency and duration of use/exposure : Covers daily exposures up to 8 hours (unless stated differently)

Other conditions affecting workers exposure : Assumes a good basic standard of occupational hygiene is implemented

Section 3 - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1:

Exposure assessment (environment): : Hydrocarbon Block Method (Petrorisk)

Exposure estimation and reference to its source : Not available.

Exposure estimation and reference to its source - Workers: 2:

Exposure assessment (human): : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Exposure estimation and reference to its source : Not available.

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

Environment : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).
Maximum Risk Characterization Ratios for air emissions RCRair: 9.7E-02
Maximum Risk Characterization Ratios for waste water emissions RCRwater: 9.0E-01

Health : Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for carcinogenic effects. Available hazard data do not enable the derivation of a DNEL for aspiration effects. Risk management measures are based on qualitative risk characterisation.

Annex to the extended Safety Data Sheet (eSDS)

Professional

Identification of the substance or mixture

Product definition : UVCB
Product name : Q8 Fuelolie 45

Section 1 - Title

Short title of the exposure scenario : Use in fuel; Professional; Closed systems
List of use descriptors : **Identified use name:** Use in fuel; Professional; Closed systems
Process Category: PROC01, PROC02, PROC08a, PROC08b, PROC16, PROC28
Substance supplied to that use in form of: As such
Subsequent service life relevant for that use: No.
Environmental Release Category: ESVOC SPERC 9.12b.v1, ERC09a, ERC09b
Market sector by type of chemical product: PC13
Article category related to subsequent service life: Not applicable.

| | |
|--|---|
| Processes and activities covered by the exposure scenario | : Covers the use as a fuel (or fuel additives and additive components) within closed or contained systems, including incidental exposures during activities associated with its transfer, use, equipment maintenance and handling of waste. |
| Additional information | : See section 3. |

Section 2 - Exposure controls

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| Contributing scenario controlling environmental exposure for 1: | |
| Product characteristics | : Substance is complex UVCB.. Predominantly hydrophobic |
| Amounts used | : Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 1.6E+06 Fraction of regional tonnage used locally: 5.0E-04 Annual site tonnage (tonnes/year): 7.8E+02 Maximum daily site tonnage (kg/day): 2.1E+03 |
| Frequency and duration of use | : Continuous release Emission days: 365 |
| Environment factors not influenced by risk management | : Local freshwater dilution factor 10 Local marine water dilution factor 100 |
| Other conditions affecting environmental exposure | : Release fraction to air from wide dispersive use (regional only): 5.0E-03 Release fraction to wastewater from wide dispersive use: 1.0E-06 Release fraction to soil from wide dispersive use (regional only): 0.00025 |
| 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). If discharging to municipal sewage treatment plant, no on-site wastewater treatment required. Treat air emission to provide a typical removal efficiency of (%): N/A Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%): 88.2 If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of >= (%): 0.0 |
| Organizational measures to prevent/limit release from site | : Do not apply industrial sludge to natural soils. Sewage sludge should be incinerated, contained or reclaimed. |

| | |
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| Conditions and measures related to sewage treatment plant | : Not applicable as there is no release to wastewater. Estimated substance removal from wastewater via municipal sewage treatment (%): 90.6 Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs (%): 90.6 Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/d): $2.7E+03$ Assumed domestic sewage treatment plant flow (m ³ /d): $2.0E+03$ |
| 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 treatment and disposal of waste should comply with applicable local and/or national regulations. |
| Conditions and measures related to external recovery of waste | : This substance is consumed during use and no waste from the substance is generated. |

Contributing scenario controlling worker exposure for 2:

General measures (carcinogens): Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Access to work area only for authorized persons. Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training. Wear suitable coveralls to prevent exposure to the skin. Wear respiratory protection when its use is identified for certain contributing scenarios. For further specification, refer to section 8 of the SDS. Clear spills immediately. Dispose of this material and its container at hazardous or special waste collection point. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Ensure control measures are regularly inspected and maintained. Consider the need for risk-based health surveillance.

General measures (aspiration): Do not ingest. If swallowed then seek immediate medical assistance.

General exposures (closed systems) (PROC_1): Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure. Assumes process temperature up to 90.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Provide employee with skin care programmes.

General exposures (closed systems) (PROC_2): Covers use up to 4.0 h/day. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure. Wear a respirator conforming to EN140. Assumes process temperature up to 90.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Provide employee with skin care programmes.

Bulk transfers; Unloading; Closed systems (PROC_8b): Covers use up to 4.0 h/day. Ensure material transfers are under containment or extract ventilation. Wear a respirator conforming to EN140. Ensure operation is undertaken outdoors. Assumes process temperature up to 90.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Provide employee with skin care programmes.

Drum/batch transfers; Dedicated facility (PROC_8b): Covers use up to 1.0 h/day. Ensure material transfers are under containment or extract ventilation. Assumes process temperature up to 60.0 °C. Covers transfer rate < 1000 l/min. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Provide employee with skin care programmes. Ensure no splashing occurs during transfer.

Refuelling (PROC_8b): Covers use up to 1.0 h/day. Ensure material transfers are under containment or extract ventilation. Ensure operation is undertaken outdoors. Assumes process temperature up to 60.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Provide employee with skin care programmes. Ensure no splashing occurs during transfer.

Use in fuel; Closed systems (PROC_16): Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Handle substance within a closed system. Assumes process temperature up to 90.0 °C. Operate activity away from sources of substance emission or release. Assumes large workrooms. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Provide employee with skin care programmes.

Equipment cleaning and maintenance (PROC_8a, PROC_28): Covers use up to 1.0 h/day. Drain down and flush system prior to equipment break-in or maintenance. Wear a respirator conforming to EN140. Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. If skin contamination is expected to extend to

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other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands. For further specification, refer to section 8 of the SDS. Covers use at ambient temperatures. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Wear suitable coveralls to prevent exposure to the skin. Provide employee with skin care programmes. Clean spills immediately.

Storage (PROC_1): Store substance within a closed system. Assumes process temperature up to 90.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Provide employee with skin care programmes.

Storage (PROC_2): Covers use up to 1.0 h/day. Provide extract ventilation to points where emissions occur. Store substance within a closed system. Assumes process temperature up to 90.0 °C. Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Provide employee with skin care programmes.

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Maximum Risk Characterization Ratios for waste water emissions RCRwater: 7.9E-01

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