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

1.1 Product identifier
Product name : MTBE
Material uses : Gasoline blending component
Index number : 603-181-00-X
EC number : 216-653-1
CAS number : 1634-04-4

1.2 Relevant identified uses of the substance or mixture and uses advised against
Not applicable.

1.3 Details of the supplier of the safety data sheet
Manufacturer / Distributor : Kuwait Petroleum Corporation
P.O. Box 26565 Safat
13126 Safat
Kuwait
Tel. +965 1858585, Fax 2423371/2467159/246

1.4 Emergency telephone number
National advisory body/Poison Center
Telephone number :

SDSinfo@Q8.com, communication preferably in English only.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Product definition : Mono-constituent substance
Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]
Flam. Liq. 2, H225
Skin Irrit. 2, H315

Classification according to Directive 67/548/EEC [DSD]
F; R11
Xi; R38

See Section 16 for the full text of the R phrases or 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 : Highly flammable liquid and vapor. Causes skin irritation.
Precautionary statements
Prevention : Wear protective gloves. Wear eye or face protection. Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.

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MTBE

SECTION 2: Hazards identification

Response : IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
Storage : Keep cool.
Disposal : Not applicable.
Supplemental label elements

Special packaging requirements
Containers to be fitted with child-resistant fastenings : Not applicable.
Tactile warning of danger : Not applicable.

2.3 Other hazards
P: Not available. B: Not available. T: No.
Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : Not available.
Other hazards which do not result in classification : Not available.

SECTION 3: Composition/information on ingredients

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Identifiers</th>
<th>%</th>
<th>Classification</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>tert-butyl methyl ether</td>
<td>EC: 216-653-1</td>
<td>100</td>
<td>F; R11 Xi; R38</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Index: 603-181-00-X</td>
<td></td>
<td>See section 16 for the full text of the R-phrases declared above</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>See Section 16 for the full text of the H statements declared above</td>
<td></td>
</tr>
</tbody>
</table>

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
[A] Constituent
[B] Impurity
[C] Stabilizing additive

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.

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SECTION 4: First aid measures

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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 adverse health effects persist or are severe. 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.

Skin contact: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. 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. 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

Potential acute health effects

Eye contact: Causes serious eye irritation.

Inhalation: No known significant effects or critical hazards.

Skin contact: Causes skin irritation.

Ingestion: Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

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

Inhalation: No specific data.

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

Ingestion: No specific data.

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, water spray (fog) or foam.

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
Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

### Hazardous thermal decomposition products
Decomposition products may include the following materials:
- Carbon dioxide
- Carbon monoxide

### 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

#### 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. Shut off all ignition sources. No flares, smoking or flames in hazard area. 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 specialised 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).

### 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. Use spark-proof tools and explosion-proof equipment. 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. Collect and wash spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

### 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). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. 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. Empty containers retain product residue and can be hazardous. Do not reuse container.

**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 a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidizing 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. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s) Recommendations

**Industrial sector specific solutions**

Not available.

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>tert-butyl methyl ether</td>
<td>EU OEL (Europe, 12/2009). Notes: list of indicative occupational exposure limit values</td>
</tr>
<tr>
<td></td>
<td>TWA: 183.5 mg/m³ 8 hour(s).</td>
</tr>
<tr>
<td></td>
<td>TWA: 50 ppm 8 hour(s).</td>
</tr>
<tr>
<td></td>
<td>STEL: 367 mg/m³ 15 minute(s).</td>
</tr>
<tr>
<td></td>
<td>STEL: 100 ppm 15 minute(s).</td>
</tr>
</tbody>
</table>

**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 European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

**Derived effect levels**

No DELs available.

**Predicted effect concentrations**

No PECs available.
SECTION 8: Exposure controls/personal protection

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. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

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. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

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.

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.

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.

Respiratory protection: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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

Appearance

Physical state: Liquid.
Appearance: Clear.
Color: Colorless.
Odor: Camphor.
Odor threshold: Not available.

pH: 7
Melting point/freezing point: -185°C
Initial boiling point and boiling range: 52.8°C

Flash point: Closed cup: -10.15°C [ASTM D93.]
Evaporation rate: 8.14 (butyl acetate = 1)
Flammability (solid, gas): Not available.
Upper/lower flammability or explosive limits: Lower: 1 to 2%
Upper: 8 to 15%

Vapor pressure: 23 kPa [20°C]
Vapor density: 3.1 [Air = 1]
Relative density: 0.758
Solubility(ies): Not available.

Date of issue/Date of revision: 25-01-2011.
SECTION 9: Physical and chemical properties

- **Partition coefficient:** n-octanol/water : 1.3
- **Auto-ignition temperature** : 460°C
- **Decomposition temperature** : Not available.
- **Viscosity (40°C)** : <2 cSt
- **Explosive properties** : Not available.
- **Oxidizing properties** : Not available.

9.2 Other information
No additional information.

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). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.

10.5 Incompatible materials : Reactive or incompatible with the following materials: oxidizing 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</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>tert-butyl methyl ether</td>
<td>LC50 Inhalation Gas.</td>
<td>Rat</td>
<td>23576 ppm</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>41000 mg/m3</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>4 g/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Conclusion/Summary** : Not available.

**Irritation/Corrosion**
**Conclusion/Summary** : Not available.

**Sensitization**
**Conclusion/Summary** : Not available.

**Mutagenicity**
**Conclusion/Summary** : Not available.

**Carcinogenicity**
**Conclusion/Summary** : Not available.

**Reproductive toxicity**
**Conclusion/Summary** : Not available.

**Teratogenicity**
**Conclusion/Summary** : Not available.

**Specific target organ toxicity (single exposure)**
Not available.

**Specific target organ toxicity (repeated exposure)**

Date of issue/Date of revision : 25-01-2011.
SECTION 11: Toxicological information

Not available.

Aspiration hazard
Not available.

Information on the likely routes of exposure
: Not available.

Potential acute health effects
Eye contact : Causes serious eye irritation.
Inhalation : No known significant effects or critical hazards.
Skin contact : Causes skin irritation.
Ingestion : Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics
Eye contact : Adverse symptoms may include the following:
watering
redness
Inhalation : No specific data.
Skin contact : Adverse symptoms may include the following:
irritation
redness
Ingestion : No specific data.

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
Not available.

Conclusion/Summary
: Not available.

General
: No known significant effects or critical hazards.

Carcinogenicity
: No known significant effects or critical hazards.

Mutagenicity
: No known significant effects or critical hazards.

Teratogenicity
: No known significant effects or critical hazards.

Developmental effects
: No known significant effects or critical hazards.

Fertility effects
: No known significant effects or critical hazards.

Other information
: Not available.

Date of issue/Date of revision : 25-01-2011.
### SECTION 12: Ecological information

#### 12.1 Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>tert-butyl methyl ether</td>
<td>Acute LC50 672000 ug/L Fresh water</td>
<td>Fish - Pimephales promelas - 33 days</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

Conclusion/Summary: Not available.

#### 12.2 Persistence and degradability

Conclusion/Summary: Not available.

#### 12.3 Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogPow</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>tert-butyl methyl ether</td>
<td>1.3</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

#### 12.4 Mobility in soil

<table>
<thead>
<tr>
<th>Soil/water partition coefficient (KOC)</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

#### 12.5 Results of PBT and vPvB assessment

<table>
<thead>
<tr>
<th>PBT</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>P: Not available. B: Not available. T: No.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>vPvB</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>vP: Not available. vB: Not available.</td>
<td></td>
</tr>
</tbody>
</table>

#### 12.6 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. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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.

**Hazardous waste**: Yes.

**European waste catalogue (EWC)**

<table>
<thead>
<tr>
<th>Waste code</th>
<th>Waste designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>07 01 04*</td>
<td>other organic solvents, washing liquids and mother liquors</td>
</tr>
</tbody>
</table>

**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. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Date of issue/Date of revision: 25-01-2011.
MTBE

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - Europe

SECTION 13: Disposal considerations

SECTION 14: Transport information

<table>
<thead>
<tr>
<th></th>
<th>ADR/RID</th>
<th>ADN/ADNR</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1 UN number</td>
<td>UN2398</td>
<td>UN2398</td>
<td>UN2398</td>
<td>UN2398</td>
</tr>
<tr>
<td>14.2 UN proper shipping name</td>
<td>METHYL tert-BUTYL ETHER</td>
<td>METHYL tert-BUTYL ETHER</td>
<td>METHYL BUTYL ETHER</td>
<td>Methyl tert-butyl ether</td>
</tr>
<tr>
<td>14.3 Transport hazard class(es)</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>14.4 Packing group</td>
<td>II</td>
<td>II</td>
<td>II</td>
<td>II</td>
</tr>
<tr>
<td>14.5 Environmental hazards</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
<tr>
<td>14.6 Special precautions for user</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Additional information</td>
<td>Hazard identification number</td>
<td>33</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Limited quantity</td>
<td>LQ4</td>
<td>Emergency schedules (EmS)</td>
<td>F-E, S-D</td>
</tr>
<tr>
<td></td>
<td>Tunnel code</td>
<td>D/E</td>
<td>Passenger and Cargo Aircraft</td>
<td>Quantity limitation: 5 L Packaging instructions: 305</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cargo Aircraft Only</td>
<td>Quantity limitation: 60 L Packaging instructions: 307</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Limited Quantities - Passenger Aircraft</td>
<td>Quantity limitation: 1 L Packaging instructions: Y305</td>
</tr>
</tbody>
</table>

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

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

None of the components are listed.

Other EU regulations

Europe inventory: This material is listed or exempted.

Black List Chemicals: Not listed

Priority List Chemicals: Listed

Date of issue/Date of revision: 25-01-2011.
SECTION 15: Regulatory information

Integrated pollution prevention and control list (IPPC) - Air: Not listed

Integrated pollution prevention and control list (IPPC) - Water: Not listed

International regulations

Chemical Weapons Convention List Schedule I Chemicals: Not listed

Chemical Weapons Convention List Schedule II Chemicals: Not listed

Chemical Weapons Convention List Schedule III Chemicals: Not listed

SECTION 16: Other information

15.2 Chemical Safety Assessment: Not available.

Abbreviations and acronyms:

ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number

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

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flam. Liq. 2, H225</td>
<td>Regulatory data</td>
</tr>
<tr>
<td>Skin Irrit. 2, H315</td>
<td>Regulatory data</td>
</tr>
</tbody>
</table>

Full text of abbreviated H statements:

H225 Highly flammable liquid and vapor.
H315 Causes skin irritation.

Full text of classifications [CLP/GHS]:

FLAMMABLE LIQUIDS - Category 2
SKIN CORROSION/IRRITATION - Category 2

Full text of abbreviated R phrases:

R11- Highly flammable.
R38- Irritating to skin.

Full text of classifications [DSD/DPD]:

F - Highly flammable
Xi - Irritant

Date of printing: 25-01-2011.

Date of issue/Date of revision: 25-01-2011.

Date of previous issue: No previous validation.

Version: 1

Prepared by: Kuwait Petroleum Research & Technology B.V., The Netherlands

Notice to reader:

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.