SAFETY DATA SHEET

n-Heptanal
10960
Version / Revision 6
Supersedes Version 5.01
Revision Date 06-May-2020
Issuing date 15-May-2020

SECTION 1: Identification

1.1. Product identifier

Identification of the substance/preparation n-Heptanal

CAS-No 111-71-7

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

Use of the Substance / Preparation Intermediate
Uses advised against None

1.3. Details of the supplier of the safety data sheet

Supplier OQ Chemicals Corporation
15375 Memorial Drive
West Memorial Place I
Suite 300
Houston, TX 77079
USA
Phone +1 346 378 7300

Product Information
Product Stewardship
FAX: +49 (0)208 693 2053
email: sc.psq@oq.com

1.4. Emergency telephone number

Emergency telephone number NCEC +1 202 464 2554
available 24/7

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

This substance is classified in accordance with paragraph (d) of §1910.1200 (GHS-US classification).

Skin corrosion/irritation Category 2, H315
Serious eye damage/eye irritation Category 2B, H320
Flammable liquid Category 3, H226
Environmental hazard Aquatic Acute 2; H401; Aquatic Chronic 3; H412

Emergency telephone number NCEC +1 202 464 2554
1 / 14 USA (A-US)
SAFETY DATA SHEET

n-Heptanal
10960

OSHA Specified Hazards

Not applicable.

2.2. Label elements

Labeling according to §1910.1200 (GHS-US labeling).

Hazard symbol(s)

Signal word

Warning

Hazard statements

H226: Flammable liquid and vapor.
H315: Causes skin irritation.
H320: Causes eye irritation
H401: Toxic to aquatic life
H412: Harmful to aquatic life with long lasting effects.

Prevention

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233: Keep container tightly closed.
P240: Ground and bond container and receiving equipment.
P241: Use explosion-proof electrical/ ventilating/ lighting equipment.
P242: Use non-sparking tools.
P243: Take action to prevent static discharges.
P264: Wear protective gloves/eye protection/face protection.
P273: Wash hands thoroughly after handling.
P280: Wear protective gloves/eye protection/face protection.
P291: Avoid release to the environment.

Response

P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313: If skin irritation occurs: Get medical advice/ attention.
P337 + P313: If eye irritation persists: Get medical advice/ attention.
P362 + P364: Take off contaminated clothing and wash it before reuse.

Storage

P403 + P235: Store in a well ventilated place. Keep cool.

Disposal

P501: Dispose of contents/container in accordance with local regulation.

2.3. Other hazards

Emergency telephone number
NCEC +1 202 464 2554
USA (A-US)
SECTION 3: Composition / information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heptanal</td>
<td>111-71-7</td>
<td>&gt; 88.0</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1. Description of first aid measures

**Inhalation**
Keep at rest. Aerate with fresh air. When symptoms persist or in all cases of doubt seek medical advice.

**Skin**
Wash off immediately with soap and plenty of water. When symptoms persist or in all cases of doubt seek medical advice.

**Eyes**
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Obtain medical attention.

**Ingestion**
Do not induce vomiting without medical advice. Call a physician immediately.

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

**Main symptoms**
nausea, shortness of breath, dizziness.

**Special hazard**
Lung oedema, Lung irritation.

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

**General advice**
Remove contaminated, soaked clothing immediately and dispose of safely. First aider needs to protect himself.

Treat symptomatically. In case of lung irritation, first treatment with cortisone spray.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media
alcohol-resistant foam, dry chemical, carbon dioxide (CO2), water spray

**Unsuitable Extinguishing Media**
Do not use a solid water stream as it may scatter and spread fire.

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

Under conditions giving incomplete combustion, hazardous gases produced may consist of:
- carbon monoxide (CO)
- carbon dioxide (CO2)

Combustion gases of organic materials must in principle be graded as inhalation poisons
Vapours are heavier than air and may spread along floors
Vapour/air-mixtures are explosive at intense warming

### 5.3. Advice for firefighters

**Special protective equipment for firefighters**
Firefighter protection should include a self-contained breathing apparatus (NIOSH-approved or EN 133) and full fire-fighting turn out gear.

**Precautions for firefighting**
Cool containers / tanks with water spray. Dike and collect water used to fight fire. Keep people away from and upwind of fire.

## SECTION 6: Accidental release measures

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

For non-emergency personnel: For personal protective equipment see section 8. Avoid contact with skin and eyes. Avoid breathing vapors or mists. Keep people away from and upwind of spill/leak. Ensure adequate ventilation, especially in confined areas. Keep away from heat and sources of ignition.

For emergency responders: Personal protection see section 8.

### 6.2. Environmental precautions

Prevent further leakage or spillage. Do not discharge product into the aquatic environment without pretreatment (biological treatment plant). Water runoff can cause environmental damage.

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

**Methods for containment**
Stop the flow of material, if possible without risk. Dike spilled material, where this is possible.

**Methods for cleaning up**
Soak up with inert absorbent material. DO NOT use combustible materials such as sawdust. Keep in suitable, closed containers for disposal. If liquid has been spilt in large quantities clean up promptly by scoop or vacuum. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).

### 6.4. Reference to other sections
For personal protective equipment see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Provide sufficient air exchange and/or exhaust in work rooms. Refill and handle product only in closed system.

Hygiene measures
When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Advice on the protection of the environment
See Section 8: Environmental exposure controls.

Incompatible products
acids and bases
amines
oxidizing agents

7.2. Conditions for safe storage, including any incompatibilities

Advice on protection against fire and explosion
Keep away from sources of ignition - No smoking. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). In case of fire, emergency cooling with water spray should be available. Ground and bond containers when transferring material. Vapour/air-mixtures are explosive at intense warming.

Technical measures/Storage conditions
Keep containers tightly closed in a cool, well-ventilated place. Handle and open container with care. Handle under nitrogen, protect from moisture. Keep at temperatures between -18 and 38 °C (0 and 100 °F).

Suitable material
stainless steel

Unsuitable material
mild steel

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Exposure limits United States of America

No exposure limits established.
8.2. Exposure controls

Appropriate Engineering controls
General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Explosion-proof equipment (for example fans, switches, and grounded ducts) should be used in mechanical ventilation systems.

Individual protection measures, such as personal protective equipment

General industrial hygiene practice
Avoid contact with skin, eyes and clothing. Do not breathe vapours or spray mist. Ensure that eyewash stations and safety showers are close to the workstation location.

Hygiene measures
When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Eye protection
Tightly fitting safety goggles. In addition to goggles, wear a face shield if there is a reasonable chance for splash to the face.

Hand protection
Wear protective gloves. Recommendations are listed below. Other protective material may be used, depending on the situation, if adequate degradation and permeation data is available. If other chemicals are used in conjunction with this chemical, material selection should be based on protection for all chemicals present.

<table>
<thead>
<tr>
<th>Suitable material</th>
<th>butyl-rubber</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation</td>
<td>according to EN 374: level 3</td>
</tr>
<tr>
<td>Glove thickness</td>
<td>approx 0.3 mm</td>
</tr>
<tr>
<td>Break through time</td>
<td>approx 50 min</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Suitable material</th>
<th>nitrile rubber</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation</td>
<td>according to EN 374: level 2</td>
</tr>
<tr>
<td>Glove thickness</td>
<td>approx 0.55 mm</td>
</tr>
<tr>
<td>Break through time</td>
<td>approx 25 min</td>
</tr>
</tbody>
</table>

Skin and body protection
Impervious clothing. Wear face-shield and protective suit for abnormal processing problems.

Respiratory protection
Respirator with filter for organic vapour. Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust). Equipment should conform to NIOSH.

Environmental exposure controls
If possible use in closed systems. If leakage can not be prevented, the substance needs to be suck off at the emersion point, if possible without danger. Observe the exposure limits, clean exhaust air if needed. If recycling is not practicable, dispose of in compliance with local regulations. Inform the responsible authorities in case of leakage into the atmosphere, or of entry into waterways, soil or drains.

SECTION 9: Physical and chemical properties
9.1. Information on basic physical and chemical properties

Appearance: liquid
Colour: colourless
Odour: fruity
Odour threshold: No data available
pH: No data available
Melting point/range: -45 °F (-43 °C)
Boiling point/range: 313 - 320 °F (156 - 160 °C) @ 1 atm (101,3 kPa)
Method: OECD 103
Flash point: 108 °F (42 °C) @ 1 atm (101,3 kPa)
Method: EU A.9
Evaporation rate: No data available
Flammability (solid, gas): Does not apply, the substance is a liquid
Lower explosion limit: 0,78 Vol %
Upper explosion limit: 15,23 Vol %

Vapour pressure

<table>
<thead>
<tr>
<th>Values [hPa]</th>
<th>Values [kPa]</th>
<th>Values [atm]</th>
<th>@ °C</th>
<th>@ °F</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>6,6</td>
<td>0,66</td>
<td>0,007</td>
<td>25</td>
<td>77</td>
<td>EU A.4</td>
</tr>
<tr>
<td>28</td>
<td>2,8</td>
<td>0,028</td>
<td>50</td>
<td>122</td>
<td>EU A.4</td>
</tr>
</tbody>
</table>

Vapour density: 3,94 (Air = 1) @ 20 °C (68 °F)

Relative density

<table>
<thead>
<tr>
<th>Values</th>
<th>@ °C</th>
<th>@ °F</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>0,819</td>
<td>20</td>
<td>68</td>
<td>OECD 109</td>
</tr>
</tbody>
</table>

Solubility: No data available
Water solubility: 2,03 g/l @ 68 °F (20 °C) OECD 105
Log Pow: 2,8 (measured) OECD 117
Autoignition temperature: 401 °F (205 °C)
Method: EU A.15
Decomposition temperature: No data available
Viscosity: 0,98 mPa*s @ 59 °F (15 °C)
Method: dynamic

9.2. Other information

Molecular weight: 114,18
Molecular formula: C7 H14 O
Dissociation constant: pKa -5,2 @ 20 °C (68 °F), (calculated)
Oxidizing properties: Does not apply, substance is not oxidising. There are no chemical groups associated with oxidizing properties
Refractive Index: 1,411 @ 68 °F (20 °C)
Explosive properties: Does not apply, substance is not explosive. There are no chemical groups associated with explosive properties
Surface tension: 25,68 mN/m @ 30 °C (86 °F)

SECTION 10: Stability and Reactivity
10.1. Reactivity

The reactivity of the product corresponds to the typical reactivity shown by the substance group as described in any text book on organic chemistry.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerisation may occur. Polymerization is a highly exothermic reaction and may generate sufficient heat to cause thermal decomposition and/or rupture containers. May form explosive peroxides. When finely distributed, self-ignition is possible.

10.4. Conditions to avoid

Avoid contact with heat, sparks, open flame and static discharge. Avoid any source of ignition.

10.5. Incompatible materials

bases, amines, acids, oxidizing agents.

10.6. Hazardous decomposition products

No decomposition if stored and applied as directed. If heated to thermal decomposition the following decomposition products may occur depending on the conditions. carbon monoxide (CO). carbon dioxide (CO2).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure

Ingestion, Inhalation, Eye contact, Skin contact

Heptanal, CAS: 111-71-7

Main symptoms

nausea, shortness of breath, dizziness.

Target Organ Systemic Toxicant - Single exposure

Based on available data, the classification criteria are not met for:

STOT SE

Target Organ Systemic Toxicant - Repeated exposure

Based on available data, the classification criteria are not met for:

STOT RE

Acute toxicity

Heptanal (111-71-7)

<table>
<thead>
<tr>
<th>Routes of Exposure</th>
<th>Endpoint</th>
<th>Values</th>
<th>Species</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>LD50</td>
<td>&gt; 5000 mg/kg</td>
<td>rat</td>
<td>OECD 401</td>
</tr>
</tbody>
</table>

Emergency telephone number

NCEC +1 202 464 2554

USA (A-US)
SAFETY DATA SHEET

n-Heptanal
10960

<table>
<thead>
<tr>
<th>Type</th>
<th>LD50</th>
<th>rabbit</th>
<th>OECD 402</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dermal</td>
<td>&gt; 5000 mg/kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>LC0</th>
<th>rat, male/female</th>
<th>OECD 403</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalative</td>
<td>&gt; 18,4 mg/l (4h)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Heptanal, CAS: 111-71-7**

**Assessment**

Based on available data, the classification criteria are not met for:
- Acute oral toxicity
- Acute dermal toxicity
- Acute inhalation toxicity

**Irritation and corrosion**

**Heptanal (111-71-7)**

<table>
<thead>
<tr>
<th>Target Organ Effects</th>
<th>Species</th>
<th>Result</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin</td>
<td>rabbit</td>
<td>irritating</td>
<td>OECD 404</td>
</tr>
<tr>
<td>Eyes</td>
<td>rabbit</td>
<td>Mild eye irritation</td>
<td>40 CFR Part 163.81</td>
</tr>
</tbody>
</table>

**Heptanal, CAS: 111-71-7**

**Assessment**

The available data lead to the classification given in section 2

For respiratory irritation, no data are available

**Sensitization**

**Heptanal (111-71-7)**

<table>
<thead>
<tr>
<th>Target Organ Effects</th>
<th>Species</th>
<th>Evaluation</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin</td>
<td>guinea pig</td>
<td>not sensitizing</td>
<td>OECD 406</td>
</tr>
</tbody>
</table>

**Heptanal, CAS: 111-71-7**

**Assessment**

Based on available data, the classification criteria are not met for:
- Skin sensitization
- For respiratory sensitization, no data are available

**Subacute, subchronic and prolonged toxicity**

**Heptanal (111-71-7)**

<table>
<thead>
<tr>
<th>Type</th>
<th>NOAEL: 1750 mg/kg/d (28d)</th>
<th>rat, male/female</th>
<th>OECD 407 Oral</th>
<th>read across</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subacute toxicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>LOAEL: 3500 mg/kg/d (28d)</th>
<th>rat, male/female</th>
<th>OECD 407 Oral</th>
<th>read across</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subacute toxicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Heptanal, CAS: 111-71-7**

**Assessment**

Based on available data, the classification criteria are not met for:
- STOT RE

**Carcinogenicity, Mutagenicity, Reproductive toxicity**

**Heptanal (111-71-7)**

Emergency telephone number
NCEC +1 202 464 2554
USA (A-US)
SAFETY DATA SHEET

n-Heptanal
10960

Version / Revision 6

Mutagenicity

Salmonella typhimurium negative OECD 471 (Ames) In vitro study

Mutagenicity

mouse lymphoma cells negative OECD 476 (Mammalian Gene Mutation) In vitro study

Mutagenicity

human lymphocytes negative OECD 473 (Chromosomal Aberration) In vitro study

Reproductive toxicity

NOAEL < 200 mg/kg/d rat, parental, female OECD 421 read across Maternal toxicity

Reproductive toxicity

NOAEL 1000 mg/kg/d rat, 1. Generation, male/female OECD 421 read across Maternal toxicity

Developmental Toxicity

NOAEL 1000 mg/kg/d rat Maternal toxicity OECD 414, Oral read across Teratogenicity

Developmental Toxicity

NOAEL 1000 mg/kg/d rat Teratogenicity OECD 414, Oral read across Teratogenicity

Heptanal, CAS: 111-71-7
CMR Classification
The available data on CMR properties are summarized in the table above. They do not indicate a classification into categories 1A or 1B
Evaluation
In vitro tests did not show mutagenic effects
No cancer study was conducted
Note
Handle in accordance with good industrial hygiene and safety practice. Further details on substance data can be found in the registration dossier under the following link:

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity
Heptanal (111-71-7)

<table>
<thead>
<tr>
<th>Species</th>
<th>Exposure time</th>
<th>Dose</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pseudokirchneriella subcapitata</td>
<td>72h</td>
<td>EC50: 2,9 mg/l (Growth rate)</td>
<td>OECD 201</td>
</tr>
<tr>
<td>Pseudokirchneriella subcapitata</td>
<td>72h</td>
<td>EC50: 0,42 mg/l (Biomass)</td>
<td>OECD 201</td>
</tr>
<tr>
<td>Oncorhynchus mykiss (rainbow trout)</td>
<td>96h</td>
<td>LC50: 12 mg/l</td>
<td>OECD 203</td>
</tr>
<tr>
<td>Daphnia magna (Water flea)</td>
<td>48h</td>
<td>EC50: 4,13 mg/l</td>
<td>OECD 202</td>
</tr>
<tr>
<td>Activated sludge (domestic)</td>
<td>3 h</td>
<td>EC50: 580 mg/l</td>
<td>OECD 209</td>
</tr>
</tbody>
</table>

Long term toxicity
Heptanal (111-71-7)
SAFETY DATA SHEET

n-Heptanal
10960

12.2. Persistence and degradability

Heptanal, CAS: 111-71-7
Biodegradation
63 - 74 % (28 d), Sewage, aerobic, OECD 301 D.

Abiotic Degradation

<table>
<thead>
<tr>
<th>Type</th>
<th>Result</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photolysis</td>
<td>Half-life (DT50): 4.2 h</td>
<td>calculated</td>
</tr>
<tr>
<td>Hydrolysis</td>
<td>not expected</td>
<td></td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Type</th>
<th>Result</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>log Pow</td>
<td>2.8</td>
<td>OECD 117</td>
</tr>
<tr>
<td>BCF</td>
<td>No data available</td>
<td></td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

<table>
<thead>
<tr>
<th>Type</th>
<th>Result</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface tension</td>
<td>25.68 mN/m @ 30 °C (86 °F)</td>
<td></td>
</tr>
<tr>
<td>Adsorption/Desorption</td>
<td>log Koc: 1.96</td>
<td>calculated</td>
</tr>
<tr>
<td>Distribution to environmental compartments</td>
<td>Air: 80.8 % Soil: 2 % Water: 17.2 % Sediment: 0.045 % Suspended sediment: 0.0014 %</td>
<td>calculated</td>
</tr>
</tbody>
</table>

12.5. Results of PBT and vPvB assessment

Not required

12.6. Other adverse effects

Heptanal, CAS: 111-71-7
No data available
Note
Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product Information
Disposal required in compliance with all waste management related state and local regulations. The choice of the appropriate method of disposal depends on the product composition by the time of disposal as well as the local statutes and possibilities for disposal.

Uncleaned empty packaging
Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

SECTION 14: Transport information

D.O.T. (49CFR)

14.1. UN number UN 3056
14.2. UN proper shipping name n-Heptaldehyde
14.3. Transport hazard class(es) 3
14.4. Packing group III
14.5. Environmental hazards no
14.6. Special precautions for user Emergency Response Guide 129

ICAO-TI / IATA-DGR

14.1. UN number UN 3056
14.2. UN proper shipping name n-Heptaldehyde
14.3. Transport hazard class(es) 3
14.4. Packing group III
14.5. Environmental hazards no
14.6. Special precautions for user no data available

IMDG

14.1. UN number UN 3056
14.2. UN proper shipping name Heptaldehyde
14.3. Transport hazard class(es) 3
SAFETY DATA SHEET

n-Heptanal
10960

14.4. Packing group
III

14.5. Environmental hazards
no

14.6. Special precautions for user
EmS
F-E, S-D

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code
not applicable

SECTION 15: Regulatory information

Federal and State Regulations
Components of the product are listed in the quoted regulations. For details please refer to the regulations directly. This list is not exhaustive, please check for other applicable regulations.

Federal Regulations
This product is listed on the TSCA inventory

International Inventories

Heptanal, CAS: 111-71-7
AICS (AU)
DSL (CA)
IECSC (CN)
EC-No. 2038984 (EU)
ENCS (2)-494 (JP)
ISHL (2)-494 (JP)
KECI KE-18269 (KR)
INSQ (MX)
PICCS (PH)
TSCA (US)
NZIoC (NZ)
TCSI (TW)

SECTION 16: Other information

Revision Date 06-May-2020
Issuing date 15-May-2020

Hazard Rating Systems

NFPA (National Fire Protection Association)
Health Hazard 1
Fire Hazard 2
Reactivity 1

Emergency telephone number NCEC +1 202 464 2554
USA (A-US)
SAFETY DATA SHEET

n-Heptanal
10960

Version / Revision 6

HMIS (Hazardous Material Information System)

- Health Hazard: 1
- Flammability: 2
- Physical Hazard: 1

Training advice
For effective first-aid, special training / education is needed.

Sources of key data used to compile the datasheet
Information contained in this safety data sheet is based on OQ owned data and public sources deemed valid or acceptable. The absence of data elements required by OSHA, ANSI or Annex II, Regulation 1907/2006/EC indicates, that no data meeting these requirements is available.

Further information for the safety data sheet
Changes against the previous version are marked by ***. Observe national and local legal requirements. For more information, other material safety data sheets or technical data sheets please consult the OQ homepage (www.chemicals.oq.com).

The use of a comma in section 3 and section 7 to 12 is the same as a period.

Disclaimer
For industrial use only. The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. OQ makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards.

End of Safety Data Sheet