SAFETY DATA SHEET

n-Valeric acid
10620
Version / Revision 5.02
Supersedes Version 5.01**
Revision Date 12-Dec-2019
Issuing date 12-Dec-2019

SECTION 1: Identification

1.1. Product identifier

Identification of the substance/preparation: n-Valeric acid

Chemical Name: Valeric acid
CAS-No: 109-52-4

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: OXEA 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: psq@oxea-chemicals.com

1.4. Emergency telephone number

Emergency telephone number in USA, call 800 424 9300
outside USA, call 1.703.527.3887, collect calls accepted 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 1B, H314
Serious eye damage/eye irritation Category 1, H318
Flammable liquid Category 4, H227
SAFETY DATA SHEET

n-Valeric acid
10620

Version / Revision 5.02

Environmental hazard  Aquatic Acute 3; H402; Aquatic Chronic 3; H412

OSHA Specified Hazards  Not applicable.

2.2. Label elements

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

Hazard symbol(s)

Signal word  Danger

Hazard statements  
H227: Combustible liquid  
H314: Causes severe skin burns and eye damage.  
H402: Harmful to aquatic life  
H412: Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention  
P210: Keep away from flames and hot surfaces. - No smoking.  
P260: Do not breathe gas/mist/vapours.  
P264: Wash hands thoroughly after handling.  
P273: Avoid release to the environment.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response  
P301 + P330 + P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.  
P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310: Immediately call a POISON CENTER/doctor.  
P363: Wash contaminated clothing before reuse.

Storage  
P403 + P235: Store in a well ventilated place. Keep cool.  
P405: Store locked up.

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

2.3. Other hazards

Vapour/air-mixtures are explosive at intense warming.

Emergency telephone number in USA, call 800 424 9300; outside USA, call USA 703 527 3887, collect calls accepted

2 / 14
Components of the product may be absorbed into the body by inhalation and ingestion

**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>Valeric acid</td>
<td>109-52-4</td>
<td>&gt; 98.50</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. Immediate medical attention is required.

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

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

**Main symptoms**
central nervous system depression, unconsciousness, shortness of breath, vomiting.

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

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. If ingested, flush stomach and compensate acidosis.

**SECTION 5: Firefighting measures**

5.1. Extinguishing media

Suitable extinguishing media
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
Keep people away from and upwind of fire. Cool containers / tanks with water spray. Water run-off and vapor cloud may be corrosive. Water run-off can cause environmental damage. Dike and collect water used to fight 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. Keep in suitable, closed containers for disposal. If liquid has been spilt in large quantities clean up promptly by scoop or vacuum. Dispose of in accordance with local regulations. 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.

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
- bases
- amines
- strong 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. Keep at temperatures between 0 and 54 °C (32 and 130 °F).

Suitable material
- stainless steel

Unsuitable material
- copper, nickel

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>nitrile rubber</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation</td>
<td>according to EN 374: level 6</td>
</tr>
<tr>
<td>Glove thickness</td>
<td>approx 0,55 mm</td>
</tr>
<tr>
<td>Break through time</td>
<td>&gt; 480 min</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Suitable material</th>
<th>polyvinylchloride</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation</td>
<td>Information derived from practical experience</td>
</tr>
<tr>
<td>Glove thickness</td>
<td>approx 0,8 mm</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.
9.1. Information on basic physical and chemical properties

**Appearance**
liquid @ 20 °C (68 °F)

**Colour**
colourless

**Odour**
unpleasant

**Odour threshold**
No data available

**pH**
3.3 (10 g/l in water @ 25 °C (77 °F)) DIN 19268

**Melting point/range**
-31 °F (-35 °C) (Pour point)

**Boiling point/range**
367 °F (186 °C) @ 1 atm (101.3 kPa)

**Flash point**
192.2 °F (89 °C)

**Evaporation rate**
No data available

**Flammability (solid, gas)**
Does not apply, the substance is a liquid

**Lower explosion limit**
1.6 Vol %

**Upper explosion limit**
7.3 Vol %

**Vapour pressure**

<table>
<thead>
<tr>
<th>Method</th>
<th>@ °C</th>
<th>@ °F</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIN EN 13016-2</td>
<td>50</td>
<td>122</td>
</tr>
</tbody>
</table>

**Vapour density**
3.5 (Air = 1) @ 20 °C (68 °F)

**Relative density**

<table>
<thead>
<tr>
<th>Method</th>
<th>@ °C</th>
<th>@ °F</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIN 51757</td>
<td>20</td>
<td>68</td>
</tr>
</tbody>
</table>

**Solubility**
37.5 g/l @ 20 °C (68 °F), in water, OECD 105

**log Pow**
1.8 (measured) OECD 117

**Autoignition temperature**
770 °F (410 °C)

**Decomposition temperature**
No data available

**Viscosity**
2,173 mPa*s @ 68 °F (20 °C)

9.2. Other information

**Molecular weight**
102,13

**Molecular formula**
C5H10 O2

**Oxidizing properties**
Does not apply, substance is not oxidising. There are no chemical groups associated with oxidizing properties

**Refractive Index**
1,408 @ 68 °F (20 °C)

**Explosive properties**
Does not apply, substance is not explosive. There are no chemical groups associated with explosive properties

**Surface tension**
51.6 mN/m (1 g/l @ 20°C (68°F)), OECD 115

SECTION 10: Stability and Reactivity
SAFETY DATA SHEET

n-Valeric acid
10620

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 does not occur.

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, strong oxidizing agents.

10.6. Hazardous decomposition products
No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
 Likely routes of exposure: Ingestion, Inhalation, Eye contact, Skin contact

Valeric acid, CAS: 109-52-4
Main symptoms: central nervous system depression, unconsciousness, shortness of breath, vomiting.

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
Due to lack of data, a classification is not possible for:
STOT RE

Acute toxicity
Valeric acid (109-52-4)

<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>4600 mg/kg</td>
<td>rat, male/female</td>
<td>OECD 401</td>
</tr>
<tr>
<td>Dermal</td>
<td>LD50</td>
<td>&gt; 2000 mg/kg (24 h)</td>
<td>rat, male/female</td>
<td>OECD 402</td>
</tr>
</tbody>
</table>

Valeric acid, CAS: 109-52-4
Assessment

Emergency telephone number
in USA, call 800 424 9300; outside USA, call USA 703 527 3887, collect calls accepted
USA (A-US)
Based on available data, the classification criteria are not met for:
Acute oral toxicity
Acute dermal toxicity
STOT SE
An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration

Irritation and corrosion
Valeric acid (109-52-4)

<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>corrosive</td>
<td>3 min</td>
</tr>
<tr>
<td>Eyes</td>
<td>rabbit</td>
<td>corrosive</td>
<td></td>
</tr>
</tbody>
</table>

Valeric acid, CAS: 109-52-4
Assessment
The available data lead to the classification given in section 2
For respiratory irritation, no data are available

Valeric acid, CAS: 109-52-4
Assessment
Skin sensitization was not tested due to the corrosive properties of the substance
For skin sensitization, no data are available
For respiratory sensitization, no data are available

Subacute, subchronic and prolonged toxicity
Valeric acid (109-52-4)

<table>
<thead>
<tr>
<th>Type</th>
<th>Dose</th>
<th>Species</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOAEL 50 mg/kg/d</td>
<td>rat</td>
<td>OECD 414, Oral toxicity</td>
<td></td>
</tr>
</tbody>
</table>

Valeric acid, CAS: 109-52-4
Assessment
Due to lack of data, a classification is not possible for:
STOT RE

Carcinogenicity, Mutagenicity, Reproductive toxicity
Valeric acid (109-52-4)

<table>
<thead>
<tr>
<th>Type</th>
<th>Dose</th>
<th>Species</th>
<th>Evaluation</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developmental Toxicity</td>
<td>NOAEL 50 mg/kg/d</td>
<td>rat</td>
<td></td>
<td>OECD 414, Oral toxicity</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>Salmonella typhimurium</td>
<td>negative</td>
<td>OECD 471 (Ames)</td>
<td>In vitro study</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>CHO (Chinese Hamster Ovary) cells</td>
<td>positive</td>
<td>OECD 473 (Chromosomal Aberration)</td>
<td>In vitro study</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>CHO (Chinese Hamster Ovary) cells</td>
<td>positive</td>
<td>OECD 479 (SCE)</td>
<td>In vitro study</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>CHO (Chinese Hamster Ovary)</td>
<td>negative</td>
<td>OECD 476 (Mammalian)</td>
<td>In vitro study</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

n-Valeric acid
10620

<table>
<thead>
<tr>
<th>Mutagenicity</th>
<th>cells</th>
<th>Gene Mutation</th>
</tr>
</thead>
<tbody>
<tr>
<td>negative</td>
<td>mouse</td>
<td>OECD 474</td>
</tr>
</tbody>
</table>

Valeric acid, CAS: 109-52-4
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

Valeric acid, CAS: 109-52-4
Aspiration toxicity
no data available
Other adverse effects
Components of the product may be absorbed into the body by inhalation and ingestion.

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
Valeric acid (109-52-4)
<table>
<thead>
<tr>
<th>Species</th>
<th>Exposure time</th>
<th>Dose</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daphnia magna (Water flea)</td>
<td>48h</td>
<td>LC50: 88.1 mg/l</td>
<td>OECD 202 read across</td>
</tr>
<tr>
<td>Pseudokirchneriella subcapitata</td>
<td>72h</td>
<td>EC50: 29.3 mg/l</td>
<td>OECD 201</td>
</tr>
<tr>
<td>Pimephales promelas (fathead minnow)</td>
<td>96h</td>
<td>LC50: 39 mg/l</td>
<td>OECD 203</td>
</tr>
</tbody>
</table>

Long term toxicity
Valeric acid (109-52-4)
<table>
<thead>
<tr>
<th>Type</th>
<th>Species</th>
<th>Dose</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic toxicity</td>
<td>Pseudokirchneriella subcapitata</td>
<td>NOAEC: 12.6 mg/l (3d)</td>
<td>OECD 201</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

Valeric acid, CAS: 109-52-4
Biodegradation
72 % (10 d), activated sludge, non-adapted, aerobic.

Abiotic Degradation
Valeric acid (109-52-4)
<table>
<thead>
<tr>
<th>Type</th>
<th>Result</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrolysis</td>
<td>not expected</td>
<td></td>
</tr>
</tbody>
</table>

Emergency telephone number
in USA, call 800 424 9300; outside USA, call USA 703 527 3887, collect calls accepted
10 / 14 USA (A-US)
SAFETY DATA SHEET

n-Valeric acid
10620

Version / Revision 5.02

Photolysis No data available

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Valeric acid (109-52-4)</th>
<th>Type</th>
<th>Result</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>log Pow</td>
<td>1.8</td>
<td>measured, OECD 117</td>
<td></td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

<table>
<thead>
<tr>
<th>Valeric acid (109-52-4)</th>
<th>Type</th>
<th>Result</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface tension</td>
<td>51.6 mN/m (1 g/l @ 20°C (68°F))</td>
<td>OECD 115</td>
<td></td>
</tr>
<tr>
<td>Adsorption/Desorption</td>
<td>no data available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distribution to environmental compartments</td>
<td>no data available</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12.5. Results of PBT and vPvB assessment

Valeric acid, CAS: 109-52-4
PBT and vPvB assessment
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)

12.6. Other adverse effects

Valeric acid, CAS: 109-52-4
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

Emergency telephone number
in USA, call 800 424 9300; outside USA, call USA 703 527 3887, collect calls accepted
USA (A-US) 11 / 14
SAFETY DATA SHEET

n-Valeric acid
10620

D.O.T. (49CFR)

14.1. UN number UN 3265
14.2. UN proper shipping name Corrosive liquid, acidic, organic, n.o.s. (n-Valeric acid)
14.3. Transport hazard class(es) 8
14.4. Packing group II
14.5. Environmental hazards no
14.6. Special precautions for user
Emergency Response Guide 153

ICAO-TI / IATA-DGR

14.1. UN number UN 3265
14.2. UN proper shipping name Corrosive liquid, acidic, organic, n.o.s. (n-Valeric acid)
14.3. Transport hazard class(es) 8
14.4. Packing group II
14.5. Environmental hazards no
14.6. Special precautions for user no data available

IMDG

14.1. UN number UN 3265
14.2. UN proper shipping name Corrosive liquid, acidic, organic, n.o.s. (n-Valeric acid)
14.3. Transport hazard class(es) 8
14.4. Packing group II
14.5. Environmental hazards no
14.6. Special precautions for user EmS
14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code F-A, S-B

Product name Pentanoic acid
Ship type 3
Pollution category Y

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.

Emergency telephone number in USA, call 800 424 9300; outside USA, call USA 703 527 3887, collect calls accepted
12 / 14
USA (A-US)
SAFETY DATA SHEET

n-Valeric acid
10620

Federal Regulations
This product is listed on the TSCA inventory

State Regulations
Valeric acid, CAS: 109-52-4
  MA RTK List
  NY RTK List
  PA RTK List

International Inventories
Valeric acid, CAS: 109-52-4
  AICS (AU)
  DSL (CA)
  IECSC (CN)
  EC-No. 2036772 (EU)
  ENCS (2)-608 (JP)
  ISHL (2)-608 (JP)
  KECI KE-35263 (KR)
  INSQ (MX)
  PICCS (PH)
  TSCA (US)
  NZIoC (NZ)
  TCSI (TW)

SECTION 16: Other information
Revision Date 12-Dec-2019
Issuing date 12-Dec-2019

Hazard Rating Systems
NFPA (National Fire Protection Association)
  Health Hazard 3
  Fire Hazard 1
  Reactivity 0

HMIS (Hazardous Material Information System)
  Health Hazard 3
  Flammability 1
  Physical Hazard 0

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

Sources of key data used to compile the datasheet

Emergency telephone number in USA, call 800 424 9300; outside USA, call USA 703 527 3887, collect calls accepted
13 / 14 USA (A-US)
n-Valeric acid
10620

Information contained in this safety data sheet is based on Oxea 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 Oxea homepage (www.oxea-chemicals.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. Oxea 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