SAFETY DATA SHEET

n-Heptanoic acid HP

1.1. Product identifier

Identification of the substance/preparation

Chemical Name: Heptanoic acid***
CAS-No: 111-14-8
EC No. 203-838-7
Registration number (REACH): 01-2119463877-21***

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

Identified uses: Transported isolated intermediate (1907/2006)
Uses advised against: None***

1.3. Details of the supplier of the safety data sheet

Company/Undertaking: OXEA GmbH
Identification: Rheinpromenade 4A
D-40789 Monheim
Germany

Product Information: Product Stewardship
FAX: +49 (0)208 693 2053
email: psq@oxea-chemicals.com

1.4. Emergency telephone number

Emergency telephone number: +44 (0) 1235 239 670 (UK)
available 24/7***

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

This substance is classified based on Directive 1272/2008/EC and its amendments (CLP Regulation)

- Acute inhalation toxicity: Category 4, H332***
- Skin corrosion/irritation: Category 1B, H314***
- Serious eye damage/eye irritation: Category 1, H318***
- Target Organ Systemic Toxicant - Single exposure: Category 3, H335***

Additional information: For full text of Hazard- and EU Hazard-statements see SECTION 16.***

2.2. Label elements
SAFETY DATA SHEET

n-Heptanoic acid HP
10520A

Labelling according to Regulation 1272/2008/EC and its amendments (CLP Regulation).***

Hazard pictograms

Signal word

Danger

Hazard statements
H332: Harmful if inhaled.
H314: Causes severe skin burns and eye damage.
H335: May cause respiratory irritation.

Precautionary statements
P260: Do not breathe gas/mist/vapours.
P280: Wear protective gloves/protective clothing/ eye protection/face protection.
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.
P310: Immediately call a POISON CENTER/doctor.
P403 + P233: Store in a well ventilated place. Keep container tightly closed.***

2.3. Other hazards

Components of the product may be absorbed into the body by inhalation

PBT and vPvB assessment
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)***

SECTION 3: Composition / information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>REACh-No</th>
<th>1272/2008/EC</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heptanoic acid***</td>
<td>111-14-8</td>
<td>01-2119463877-21**</td>
<td>Acute Tox. 4; H332 Skin Corr. 1B; H314 Eye Dam. 1; H318 STOT SE 3; H335</td>
<td>&gt; 98,5</td>
</tr>
</tbody>
</table>

For full text of Hazard- and EU Hazard-statements see SECTION 16.***

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation
Keep at rest. Aerate with fresh air. Symptoms of poisoning may develop many hours after exposure. Call a physician immediately.

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**
cough, headache, nausea, shortness of breath, vomiting, convulsions.

**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**
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

**5.3. Advice for firefighters**

**Special protective equipment for firefighters**
Fire fighter 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. Water run-off and vapor cloud may be corrosive. 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).

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

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.

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 38 °C (32 and 100 °F).
7.3. Specific end use(s)
Transported isolated intermediate (1907/2006)

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Exposure limits European Union
No exposure limits established.

Exposure limits UK
No exposure limits established.

[DNEL & PNEC]
This substance is registered as intermediate under strictly controlled conditions.

8.2. Exposure controls

Special adaptations (REACH)
Not applicable.

[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.

[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.
Equipment should conform to EN 166

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.

**Suitable material**
nitrile rubber

**Evaluation**
according to EN 374: level 6

**Glove thickness**
approx 0.55 mm

**Break through time**
> 480 min

**Suitable material**
polyvinylchloride / nitrile rubber

**Evaluation**
according to EN 374: level 6

**Glove thickness**
approx 0.9 mm

**Break through time**
> 480 min

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

**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. 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.

**Additional advice**
Further details on substance data can be found in the registration dossier under the following link:

---

**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

**Appearance**
liquid

**Colour**
colourless

**Odour**
pungent

**Odour threshold**
0.6 - 10.4 ppm

**pH**
4.8 @ 20 °C (68 °F)

**Melting point/range**
-8 °C

**Boiling point/range**
223 °C @ 1013 hPa

**Flash point**
117 °C

**Method**
DIN EN ISO 3679

**Evaporation rate**
No data available

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

**Lower explosion limit**
1.09 Vol %

**Upper explosion limit**
10.1 Vol %

**Vapour pressure**

<table>
<thead>
<tr>
<th>Values [hPa]</th>
<th>Values [kPa]</th>
<th>Values [atm]</th>
<th>@ °C</th>
<th>@ °F</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.013</td>
<td>0.0013</td>
<td>&lt; 0.001</td>
<td>20</td>
<td>68</td>
</tr>
<tr>
<td>0.2</td>
<td>0.02</td>
<td>&lt; 0.001</td>
<td>50</td>
<td>122</td>
</tr>
</tbody>
</table>

**Method**
DIN EN ISO 3679

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

**Relative density**

<table>
<thead>
<tr>
<th>Values</th>
<th>@ °C</th>
<th>@ °F</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.92</td>
<td>20</td>
<td>68</td>
</tr>
</tbody>
</table>

**Solubility**
2 - 5 g/l @ 25 °C, in water

**log Pow**
2.54 (calculated), KOW WIN

**Autoignition temperature**
275 °C
SAFETY DATA SHEET

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Method EU A.15
Decomposition temperature No data available
Viscosity 3.4 mPa*s @ 30 °C
Explosive properties Does not apply, substance is not explosive. There are no chemical groups associated with explosive properties
Oxidizing properties Does not apply, substance is not oxidising. There are no chemical groups associated with oxidizing properties

9.2. Other information
Molecular weight 130.19
Molecular formula C7 H14 O2
log Koc 1,143
Refractive index 1,422 @ 20 °C

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 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.

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***

Acute toxicity
Heptanoic acid (111-14-8)

<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>Inhalative</td>
<td>LC50</td>
<td>&gt; 4.6 mg/l (4h)</td>
<td>rat, male/female</td>
<td>OECD 403</td>
</tr>
</tbody>
</table>

Heptanoic acid***, CAS: 111-14-8
Assessment
The available data lead to the classification given in section 2.

Dermal acute toxicity data were not determined, because of the corrosive properties of the substance.
For acute oral toxicity, no data are available***

<table>
<thead>
<tr>
<th>Irritation and corrosion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heptanoic acid (111-14-8)</td>
</tr>
<tr>
<td>Target Organ Effects</td>
</tr>
<tr>
<td>Skin</td>
</tr>
</tbody>
</table>

Heptanoic acid***, CAS: 111-14-8

Assessment
The available data lead to the classification given in section 2.
Available skin corrosion data suffice for classification of eye corrosion without further testing.
For respiratory irritation, no data are available***

<table>
<thead>
<tr>
<th>Sensitization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heptanoic acid (111-14-8)</td>
</tr>
<tr>
<td>Target Organ Effects</td>
</tr>
<tr>
<td>Skin</td>
</tr>
</tbody>
</table>

Heptanoic acid***, CAS: 111-14-8

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

Heptanoic acid***, CAS: 111-14-8

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

<table>
<thead>
<tr>
<th>Carcinogenicity, Mutagenicity, Reproductive toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heptanoic acid (111-14-8)</td>
</tr>
<tr>
<td>Type</td>
</tr>
<tr>
<td>Mutagenicity</td>
</tr>
<tr>
<td>Developmental Toxicity</td>
</tr>
<tr>
<td>Developmental Toxicity</td>
</tr>
</tbody>
</table>

Heptanoic acid***, CAS: 111-14-8

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***

Heptanoic acid***, CAS: 111-14-8

Main symptoms
cough, headache, nausea, shortness of breath, vomiting, convulsions.

Target Organ Systemic Toxicant - Single exposure
The available data lead to the classification given in section 2***
Target Organ Systemic Toxicant - Repeated exposure
Due to lack of data, a classification is not possible for:
STOT RE***
Aspiration toxicity
no data available***
Other adverse effects
Components of the product may be absorbed into the body by inhalation.

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

<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>EC50: 860 mg/l</td>
<td>OECD 202</td>
</tr>
<tr>
<td>Pimephales promelas (fathead minnow)</td>
<td>96h</td>
<td>LC50: &gt; 92 mg/l</td>
<td>OECD 203</td>
</tr>
<tr>
<td>green algae</td>
<td>96h</td>
<td>EC50: 122,7 mg/l (Growth rate)</td>
<td>ECOSAR</td>
</tr>
<tr>
<td>Pseudomonas putida</td>
<td>17 h</td>
<td>EC50: &gt; 1000 mg/l (Growth inhibition)</td>
<td>DIN 38412, part 8</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

Heptanoic acid***, CAS: 111-14-8
Biodegradation
98,7 % (11 d), Sewage, domestic, non-adapted, aerobic, OECD 301 A / ISO 7827.

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Heptanoic acid (111-14-8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
</tr>
<tr>
<td>log Pow***</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

<table>
<thead>
<tr>
<th>Heptanoic acid (111-14-8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
</tr>
<tr>
<td>Adsorption/Desorption***</td>
</tr>
</tbody>
</table>

12.5. Results of PBT and vPvB assessment

Heptanoic acid***, CAS: 111-14-8
PBT and vPvB assessment
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very
SAFETY DATA SHEET

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10520A

bioaccumulating (vPvB)***

12.6. Other adverse effects

Heptanoic acid***, CAS: 111-14-8
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.

Hazardous waste according to European Waste Catalogue (EWC)

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

ADR/RID

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

14.5. Environmental hazards

14.6. Special precautions for user

ADR Tunnel restriction code
Classification Code
Hazard Number

ADN

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

14.5. Environmental hazards

14.6. Special precautions for user

ADR Tunnel restriction code
Classification Code
Hazard Number

ADN: Container and Tanker

*** UN 3265
*** Corrosive liquid, acidic, organic, n.o.s. (n-Heptanoic acid)
*** 8
*** II
no***
***

(E)
C3
80

***

***

ADN: Container and Tanker

*** UN 3265
*** Corrosive liquid, acidic, organic, n.o.s. (n-Heptanoic acid)
*** 8
*** II
no***
***

C3
80
SAFETY DATA SHEET

n-Heptanoic acid HP
10520A

SECTION 15: Regulatory information

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

Regulation 1272/2008, Annex VI

Heptanoic acid***, CAS: 111-14-8
Classification Skin Corr. 1B; H314
Hazard pictograms GHS05 Corrosion***
Signal word Danger
Hazard statements H314

DI 2012/18/EU (Seveso III)
Category not subject

DI 1999/13/EC (VOC Guideline)

<table>
<thead>
<tr>
<th>Component</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heptanoic acid***</td>
<td>not subject</td>
</tr>
<tr>
<td>CAS: 111-14-8</td>
<td></td>
</tr>
</tbody>
</table>

International Inventories
SAFETY DATA SHEET

n-Heptanoic acid HP
10520A

Heptanoic acid***, CAS: 111-14-8
AICS (AU)***
DSL (CA)***
IECSC (CN)***
EC-No. 2038387 (EU)***
ENCS (2)-608 (JP)***
ISHL (2)-608 (JP)***
KECI KE-18284 (KR)***
INSO (MX)***
PICCS (PH)***
TSCA (US)***
NZIoC (NZ)***
TCSI (TW)***

National regulatory information Great Britain

Releases to air (Pollution Inventory Substances)
not subject

Releases to water (Pollution Inventory Substances)
not subject

Releases to sewer (Pollution Inventory Substances)
not subject
For details and further information please refer to the original regulation

15.2. Chemical safety assessment

The Chemical Safety Report (CSR) is not required.

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3
H314: Causes severe skin burns and eye damage.
H318: Causes serious eye damage.
H332: Harmful if inhaled.
H335: May cause respiratory irritation.***

Abbreviations
A table of terms and abbreviations can be found under the following link:

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 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 annex is not required because the substance is registered as an intermediate under REACH

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