

MATERIAL SAFETY DATA SHEET (MSDS)

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

1.1. Product identifier

| | |
|--------------|------------------|
| Product form | : Substance |
| | : |
| EC index no | : 603-059-00-6 |
| EC no | : 203-852-3 |
| CAS No | : 111-27-3 |
| Product code | : 04054 |
| Formula | : C6H13NaO3S.H2O |
| Synonyms | : 1-Hexanol |

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Industrial. For professional use only.

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

| | |
|---|------|
| Flammable liquids, Category 3 | H226 |
| Acute toxicity (oral), Category 4 | H302 |
| Acute toxicity (dermal), Category 4 | H312 |
| Serious eye damage/eye irritation, Category 2 | H319 |

Full text of classification categories and H statements : see section 16

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Classification according to Directive 67/548/EEC or 1999/45/EC

Xn; R22

Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

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

Hazard pictograms (CLP) :



GHS02

GHS07

Signal word (CLP) :

Warning

Hazard statements (CLP) :

H226 - Flammable liquid and vapour
H302+H312 - Harmful if swallowed or in contact with skin
H319 - Causes serious eye irritation

Precautionary statements (CLP) :

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 - IF SWALLOWED:
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a POISON CENTER or doctor/physician if you feel unwell
P330 - Rinse mouth
P370+P378 - In case of fire: Use ... for extinction

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Name : n-HEXANOL FOR SYNTHESIS
CAS No : 111-27-3
EC no : 203-852-3
EC index no : 603-059-00-6

Full text of R- and H-phrases: see section 16

3.2. Mixture

Not applicable

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SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
- First-aid measures after skin contact : Gently wash with plenty of soap and water. Get medical advice/attention.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.
- First-aid measures after ingestion : Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

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

- Symptoms/injuries after eye contact : Causes serious eye irritation.
- Symptoms/injuries after ingestion : Swallowing a small quantity of this material will result in serious health hazard. Harmful if swallowed.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water spray. Foam. Dry powder. Carbon dioxide.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

- Protection during firefighting : Do not attempt to take action without suitable protective equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel. No open flames, no sparks, and no smoking.

6.1.2. For emergency responders

- Protective equipment : Use personal protective equipment as required.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Collect spillage. On land, sweep or shovel into suitable containers.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Do not eat, drink or smoke when using this product.
- Hygiene measures : Do not eat, drink or smoke when using this product. Wash ... thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep container tightly closed.

7.3. Specific end use(s)

No additional information available

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

| | |
|--------------------------|--------------------------------------|
| Hand protection | : protective gloves |
| Eye protection | : Chemical goggles or safety glasses |
| Skin and body protection | : Wear suitable protective clothing |
| Respiratory protection | : Wear respiratory protection |

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|--|--------------------------------|
| Physical state | : Liquid |
| Colour | : Clear Colorless. |
| Odour | : characteristic fruity odour. |
| Odour threshold | : No data available |
| pH | : No data available |
| Relative evaporation rate (butylacetate=1) | : 0.05 |
| Melting point | : -52 °C |
| Freezing point | : No data available |
| Boiling point | : 156 - 157 |
| Flash point | : 59 °C |
| Auto-ignition temperature | : 293 °C |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : Flammable |
| Vapour pressure | : 1 hPa at 20 °C |
| Relative vapour density at 20 °C | : 4.5 |
| Relative density | : No data available |
| Density | : 0.82 g/cm ³ |
| Relative gas density | : 3.53 |
| Solubility | : Water: 0.59 g/100ml |
| Log Pow | : 1.82 |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |

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| | |
|----------------------|----------------------|
| Explosive properties | : No data available |
| Oxidising properties | : No data available |
| Explosive limits | : ≥ 0.013 vol % |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

No additional information available

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Direct sunlight. Heat. Sparks. Open flame.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed. Dermal: Harmful in contact with skin.

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

Reproductive toxicity : Not classified
Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Potential adverse human health effects and symptoms : Harmful if swallowed.

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SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

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|------------------------------------|------|
| Log Pow | 1.82 |

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose of contents/container to ...

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR) : 2282
UN-No. (IMDG) : 2282
UN-No.(IATA) : 2282
UN-No.(ADN) : Not regulated
UN-No. (RID) : Not regulated

14.2. UN proper shipping name

Proper Shipping Name (ADR) : HEXANOLS
Proper Shipping Name (IMDG) : HEXANOLS
Proper Shipping Name (IATA) : HEXANOLS
Proper Shipping Name (ADN) : Not regulated
Proper Shipping Name (RID) : Not regulated
Transport document description (ADR) : UN 2282 HEXANOLS, 3, III, (D/E)
Transport document description (IMDG) : UN 2282 HEXANOLS, 3, III
Transport document description (IATA) : UN 2282 HEXANOLS, 3, III

14.3. Transport hazard class(es)

ADR

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Transport hazard class(es) (ADR) : 3
Danger labels (ADR) : 3



IMDG

Transport hazard class(es) (IMDG) : 3
Danger labels (IMDG) : 3



IATA

Transport hazard class(es) (IATA) : 3
Hazard labels (IATA) : 3



ADN

Transport hazard class(es) (ADN) : Not regulated

RID

Transport hazard class(es) (RID) : Not regulated

14.4. Packing group

Packing group (ADR) : III
Packing group (IMDG) : III
Packing group (IATA) : III
Packing group (ADN) : Not regulated
Packing group (RID) : Not regulated

14.5. Environmental hazards

Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user

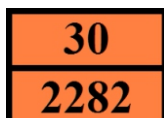
- Overland transport

Classification code (ADR) : F1
Limited quantities (ADR) : 5L
Excepted quantities (ADR) : E1
Packing instructions (ADR) : P001, IBC03, LP01, R001
Mixed packing provisions (ADR) : MP19

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| | |
|---|--------|
| Portable tank and bulk container instructions (ADR) | : T2 |
| Portable tank and bulk container special provisions (ADR) | : TP1 |
| Tank code (ADR) | : LGBF |
| Vehicle for tank carriage | : FL |
| Transport category (ADR) | : 3 |
| Special provisions for carriage - Packages (ADR) | : V12 |
| Special provisions for carriage - Operation (ADR) | : S2 |
| Hazard identification number (Kemler No.) | : 30 |
| Orange plates | : |



| | |
|-------------------------------|-------|
| Tunnel restriction code (ADR) | : D/E |
| EAC code | : 3Y |

- Transport by sea

| | |
|---------------------------------|--------------|
| Limited quantities (IMDG) | : 5 L |
| Excepted quantities (IMDG) | : E1 |
| Packing instructions (IMDG) | : P001, LP01 |
| IBC packing instructions (IMDG) | : IBC03 |
| Tank instructions (IMDG) | : T2 |
| Tank special provisions (IMDG) | : TP1 |
| EmS-No. (Fire) | : F-E |
| EmS-No. (Spillage) | : S-D |
| Stowage category (IMDG) | : A |
| MFAG-No | : 129 |

- Air transport

| | |
|--|--------|
| PCA Excepted quantities (IATA) | : E1 |
| PCA Limited quantities (IATA) | : Y344 |
| PCA limited quantity max net quantity (IATA) | : 10L |
| PCA packing instructions (IATA) | : 355 |
| PCA max net quantity (IATA) | : 60L |
| CAO packing instructions (IATA) | : 366 |
| CAO max net quantity (IATA) | : 220L |
| ERG code (IATA) | : 3L |

- Inland waterway transport

Not regulated

- Rail transport

Not regulated

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

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

n-HEXANOL FOR SYNTHESIS is not on the REACH Candidate List

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n-HEXANOL FOR SYNTHESIS is not on the REACH Annex XIV List

15.1.2. National regulations

Germany

AwSV/VwVwS Annex reference : Water hazard class (WGK) 1, slightly hazardous to water (Classification according to VwVwS, Annex 2; WGK No 125)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Denmark

Class for fire hazard : Class III-1

Store unit : 50 liter

Classification remarks : Flammable according to the Danish Ministry of Justice; Emergency management guidelines for the storage of flammable liquids must be followed

Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Full text of R-, H- and EUH-phrases:

| | |
|-----------------------|---|
| Acute Tox. 4 (Dermal) | Acute toxicity (dermal), Category 4 |
| Acute Tox. 4 (Oral) | Acute toxicity (oral), Category 4 |
| Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2 |
| Flam. Liq. 3 | Flammable liquids, Category 3 |
| H226 | Flammable liquid and vapour |
| H302 | Harmful if swallowed |
| H312 | Harmful in contact with skin |
| H319 | Causes serious eye irritation |
| R22 | Harmful if swallowed |
| Xn | Harmful |

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product