N-(3-TRIETHOXYSILYLPROPYL)-4-HYDROXYBUTYRAMIDE

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Issue date: 23.01.2015   Revision date: 31.10.2023   Version: 2.1

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

1.1. Product identifier

Product form : Substance
Substance name : N-(3-TRIETHOXYSILYLPROPYL)-4-HYDROXYBUTYRAMIDE
CAS-No. : 156214-80-1
Product code : SIT8189.5
Formula : C13H29NO5Si
Synonyms : 4-HYDROXY-N-[3-(TRIETHOXYSILYL)PROPYL]BUTANAMIDE
Product group : Trade product
Chemical family : ORGANOETHOXYSILANE

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

1.2.1. Relevant identified uses

Industrial/Professional use spec : Industrial
Use of the substance/mixture : Chemical intermediate

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

GELEST, INC.
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com - www.gelest.com

GELEST INC.
Fritz-Klatte-Strasse 8
65933 Frankfurt
Germany
T +49 (0) 69 3535106-500 - F +49 (0) 69 3535106-501 - (M-F): 8:00 AM - 4:00 PM
info@gelestde.com - www.gelest.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]
Skin corrosion/irritation, Category 2
Serious eye damage/eye irritation, Category 2
H315
H319
Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects
No additional information available
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2.2. Label elements

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

Hazard pictograms (CLP)

: 

GHS07

Signal word (CLP)

: Warning

Hazard statements (CLP)

: H315 - Causes skin irritation.
  : H319 - Causes serious eye irritation.

Precautionary statements (CLP)

: P264 - Wash hands thoroughly after handling.
  : P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
  : P302+P352 - IF ON SKIN: Wash with plenty of water.
  : P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  : P321 - Specific treatment (see supplemental first aid instruction on this label).
  : P332+P313 - If skin irritation occurs: Get medical advice/attention.

2.3. Other hazards

Other hazards which do not result in classification

: The hydrolysis product of this compound is ethanol. Overexposure to ethanol by skin absorption, inhalation or ingestion may have a narcotic effect (headache, nausea, drowsiness). Ethanol is metabolized to acetaldehyde and acetic acid which in large quantities result in metabolic acidosis, CNS depression and death due to respiratory arrest. This product contains ethanol which is classified as a carcinogen by IARC in alcoholic beverages.

Contains no PBT and/or vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type

: Mono-constituent

Name

: N-(3-TRIETHOXYSILYLPROPYL)-4-HYDROXYBUTYRAMIDE

CAS-No.

: 156214-80-1

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
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<tr>
<td>N-(3-Triethoxysilylpropyl)-4-hydroxybutyramide</td>
<td>CAS-No.: 156214-80-1</td>
<td>&gt; 95</td>
<td>Skin Irrit. 2, H315 Eye Irrit. 2, H319</td>
</tr>
</tbody>
</table>

Full text of H- and EUH-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general

: Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.

First-aid measures after inhalation

: Remove person to fresh air and keep comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact

: Wash with plenty of water/….

First-aid measures after eye contact

: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.

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First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Get medical advice/attention.

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

Symptoms/effects after inhalation : May cause irritation to the respiratory tract.
Symptoms/effects after skin contact : Causes skin irritation.
Symptoms/effects after eye contact : Causes serious eye irritation.
Symptoms/effects after ingestion : May be harmful if swallowed.
Chronic symptoms : On contact with water this compound liberates ethanol which is known to have a chronic effect on the central nervous system.

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 : Dry chemical. Dry soda ash.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Combustible liquid. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

5.3. Advice for firefighters

Firefighting instructions : Exercise caution when fighting any chemical fire.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapour and mist. Wear pressure demand self-contained breathing apparatus with full facepiece and full protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges.

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal. Use only non-sparking tools.

6.4. Reference to other sections

See Section 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid all eye and skin contact and do not breathe vapour and mist. Provide good ventilation in process area to prevent formation of vapour. Ground/bond container and receiving equipment. Use only non-sparking tools.

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.
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7.2. Conditions for safe storage, including any incompatibilities

<table>
<thead>
<tr>
<th>Storage conditions</th>
<th>Incompatible materials</th>
<th>Storage area</th>
</tr>
</thead>
</table>

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values
No additional information available

8.1.2. Recommended monitoring procedures
No additional information available

8.1.3. Air contaminants formed
No additional information available

8.1.4. DNEL and PNEC
No additional information available

8.1.5. Control banding
No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:
Provide local exhaust or general room ventilation.

8.2.2. Personal protection equipment

Personal protective equipment:
Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

8.2.2.1. Eye and face protection

Eye protection:
Chemical goggles. Contact lenses should not be worn

8.2.2.2. Skin protection

Skin and body protection:
Wear suitable protective clothing. Long-sleeved fire-resistant lab uniform or coverall is recommended.

Hand protection:
Neoprene or nitrile rubber gloves

8.2.2.3. Respiratory protection

Respiratory protection:
NIOSH-certified caustic organic vapor (black cartridge) respirator.

8.2.2.4. Thermal hazards
No additional information available

8.2.3. Environmental exposure controls
No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid
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9.2. Other information

9.2.1. Information with regard to physical hazard classes
No additional information available

9.2.2. Other safety characteristics

VOC content : 75 %
Refractive index : 1,4533

SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available

10.2. Chemical stability
Stable under nitrogen or argon in sealed containers.

10.3. Possibility of hazardous reactions
Material decomposes slowly in contact with moist air and rapidly in contact with water.

10.4. Conditions to avoid
Heat. Sparks. Open flame.

10.5. Incompatible materials

10.6. Hazardous decomposition products
Ethanol. Organic acid vapors.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008
Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

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LD50 oral rat : 12300 µl/kg

Skin corrosion/irritation : Causes skin irritation.
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
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified

11.2. Information on other hazards

No additional information available

**SECTION 12: Ecological information**

12.1. Toxicity

Hazardous to the aquatic environment, short–term (acute) : Not classified
Hazardous to the aquatic environment, long–term (chronic) : Not classified

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

**SECTION 13: Disposal considerations**

13.1. Waste treatment methods

Product-Packaging disposal recommendations : Incinerate. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.

Ecology - waste materials : Avoid release to the environment.

**SECTION 14: Transport information**

In accordance with ADR / IMDG / IATA / ADN / RID
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### 14. UN number or ID number

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<thead>
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<th>ADR</th>
<th>IMDG</th>
<th>IATA</th>
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### 14.2. UN proper shipping name

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### 14.3. Transport hazard class(es)

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### 14.4. Packing group

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### 14.5. Environmental hazards

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</table>

This product is Combustible as defined by the US Department of Transportation (DOT). It is regulated for transport in the US in container > 119 gallons (450 liters). The product is not regulated for transport by the IATA, ADR/RID, ADNR or the IMDG regulations. Therefore, no UN# is applicable to this product.

### 14.6. Special precautions for user

**Overland transport**
Not regulated

**Transport by sea**
Not regulated

**Air transport**
Not regulated

**Inland waterway transport**
Not regulated

**Rail transport**
Not regulated

### 14.7. Maritime transport in bulk according to IMO instruments

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

**REACH Annex XVII (Restriction List)**

#### EU restriction list (REACH Annex XVII)

<table>
<thead>
<tr>
<th>Reference code</th>
<th>Applicable on</th>
<th>Entry title or description</th>
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<tbody>
<tr>
<td>3(b)</td>
<td>N-(3-TRIETHOXYSILYLPROPYL)-4-HYDROXYBUTYRAMIDE; N-(3-Triethoxysilylpropyl)-4-hydroxybutyramide</td>
<td>Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10</td>
</tr>
</tbody>
</table>

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REACH Annex XIV (Authorisation List)
Not listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)
Not listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)
Not listed on the PIC list (Regulation EU 649/2012)

POP Regulation (Persistent Organic Pollutants)
Not listed on the POP list (Regulation EU 2019/1021)

Ozone Regulation (1005/2009)
Not listed on the Ozone Depletion list (Regulation EU 1005/2009)

VOC Directive (2004/42)
VOC content : 75 %

Explosives Precursors Regulation (2019/1148)
Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations
Not listed on the United States TSCA (Toxic Substances Control Act) inventory
Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

15.2. Chemical safety assessment
No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:

<table>
<thead>
<tr>
<th>Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor</th>
</tr>
</thead>
</table>

Other information : Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

Eye Irrit. 2 Serious eye damage/eye irritation, Category 2

H315 Causes skin irritation.

H319 Causes serious eye irritation.

Skin Irrit. 2 Skin corrosion/irritation, Category 2

SDS EU (REACH Annex II) - Custom v22
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