



Gamma Hexalactone

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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

1.1. Product identifier

Product form : Substance
Trade name : Gamma Hexalactone
CAS No : 695-06-7
Product code : G3640
Formula : C₆H₁₀O₂
Synonyms : 1,4-hexanolactone / 1,4-hexanolide / 2(3h)-furanone, 5-ethylidihydro- / 2(3H)-furanone, 5-ethylidihydro- / 4-ethyl-4-butanolide / 4-ethyl-4-hydroxybutanoic acid lactone / 4-hexanolide / 4-hydroxy hexanoic acid lactone / 4-hydroxyhexanoic acid lactone / 5-ethylidihydro-2(3h)-furanone / 5-ethylidihydro-2(3H)-furanone / 5-ethylidihydrofuran-2(3h)-on / 5-ethylidihydrofuran-2(3h)-one / 5-ethyl-dihydro-furan-2-one / 5-ethyltetrahydro-2-furanone / 6-caprolactone / furan-2(3h)-one, 5-ethylidihydro- / furan-2(5h)-one, 3,4-dihydro-5-ethyl- / gamma-caprolactone; gamma-hexalactone / gamma-ethylbutyrolactone / gamma-ethyl-gamma-butyrolactone / gamma-ethyl-n-butyrolactone / gamma-ethyl-normale-butyrolactone / gamma-hexalactone / gamma-hexanolactone / g-caprolactone / hexan-4-olide / hexanoic acid, 4-hydroxy-, gamma-lactone / hexanolide-1,4 / Substances with a flash-point above 60 °C and not more than 100 °C / Substances with a flash-point above 60 °C and not more than 100 °C, which do not belong to another class / tonkalide / toukalide / Toukalide
BIG no : 18449

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

Use of the substance/mixture : Chemical raw material
Laboratory chemical

1.3. Details of the supplier of the safety data sheet

CHEMTEX USA
27-29 Dwight Place
Fairfield, 07004 - USA
T 862-702-8900 - F 862-702-8180
contact@chemtexusa.com - www.chemtexusa.com

1.4. Emergency telephone number

Emergency number : CHEMTEL:(800)255-3924

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Not classified

2.2. Label elements

GHS-US labeling

No labeling applicable

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

| Name | Product identifier | % | Classification (GHS-US) |
|---|--------------------|-----|-------------------------|
| gamma-Hexalactone (Main constituent) | (CAS No) 695-06-7 | 100 | Not classified |

Full text of H-phrases: see section 16

3.2. Mixture

Not applicable

Gamma Hexalactone

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service. Assure fresh air breathing. Allow the victim to rest.
- First-aid measures after skin contact : Rinse with water. Soap may be used. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists. Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists. Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
- First-aid measures after ingestion : Rinse mouth with water. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

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

- Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.
- Symptoms/injuries after inhalation : No effects known.
- Symptoms/injuries after skin contact : Slight irritation.
- Symptoms/injuries after eye contact : Irritation of the eye tissue.
- Symptoms/injuries after ingestion : No effects known.
- Chronic symptoms : No effects known.

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. Alcohol-resistant foam. Polymer foam. BC powder. Carbon dioxide. Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Solid water jet ineffective as extinguishing medium. Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : DIRECT FIRE HAZARD. Material presenting a fire hazard. INDIRECT FIRE HAZARD. Temperature above flashpoint: higher fire/explosion hazard.
- Explosion hazard : DIRECT EXPLOSION HAZARD. No data available on direct explosion hazard. INDIRECT EXPLOSION HAZARD. No data available on indirect explosion hazard.
- Reactivity : Upon combustion CO and CO₂ are formed (carbon monoxide - carbon dioxide). Reacts with (strong) oxidizers and with (strong) acids/bases.

5.3. Advice for firefighters

- Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: have neighbourhood close doors and windows.
- Firefighting instructions : No specific fire-fighting instructions required. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.
- Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus. Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Gloves. Safety glasses. Protective clothing.
- Emergency procedures : Mark the danger area. No naked flames. Wash contaminated clothes. Evacuate unnecessary personnel.

Gamma Hexalactone

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.
Emergency procedures : Ventilate area.

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

For containment : Contain released substance, pump into suitable containers. Plug the leak, cut off the supply.
Methods for cleaning up : Take up liquid spill into inert absorbent material. Scoop absorbed substance into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Comply with the legal requirements. Clean contaminated clothing. Thoroughly clean/dry the installation before use. At temperature > flashpoint: use spark-/explosionproof appliances. Finely divided: spark- and explosionproof appliances. Keep away from naked flames/heat. Finely divided: keep away from ignition sources/sparks. Observe normal hygiene standards. Keep container tightly closed. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.
Incompatible products : Strong bases. strong acids.
Incompatible materials : Sources of ignition. Direct sunlight.
Heat-ignition : KEEP SUBSTANCE AWAY FROM: heat sources.
Prohibitions on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. (strong) bases.
Storage area : Meet the legal requirements.
Special rules on packaging : SPECIAL REQUIREMENTS: closing. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials : SUITABLE MATERIAL: No data available. MATERIAL TO AVOID: No data available.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| Gamma Hexalactone (695-06-7) | |
|------------------------------|----------------|
| ACGIH | Not applicable |
| OSHA | Not applicable |

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.
Materials for protective clothing : GIVE EXCELLENT RESISTANCE: No data available. GIVE GOOD RESISTANCE: No data available. GIVE LESS RESISTANCE: No data available. GIVE POOR RESISTANCE: No data available.
Hand protection : Gloves. Wear protective gloves.
Eye protection : Safety glasses. Chemical goggles or safety glasses.
Skin and body protection : Protective clothing.
Respiratory protection : Respiratory protection not required in normal conditions. Wear approved mask.
Other information : When using, do not eat, drink or smoke.

Gamma Hexalactone

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|---|
| Physical state | : Liquid |
| Appearance | : Liquid. |
| Color | : Colourless to light yellow |
| Odor | : No data available on odour |
| Odor threshold | : No data available |
| pH | : No data available |
| Melting point | : -18 °C |
| Freezing point | : No data available |
| Boiling point | : 220 °C |
| Flash point | : 104 °C |
| Relative evaporation rate (butyl acetate=1) | : No data available |
| Flammability (solid, gas) | : No data available |
| Explosion limits | : No data available |
| Explosive properties | : No data available |
| Oxidizing properties | : No data available |
| Vapor pressure | : No data available |
| Relative density | : 1.023 |
| Relative vapor density at 20 °C | : No data available |
| Specific gravity / density | : 1023 kg/m ³ |
| Molecular mass | : 114.15 g/mol |
| Solubility | : Soluble in water. Soluble in ethanol. Ethanol: soluble |
| Log Pow | : 0.60 (Estimated value) |
| Log Kow | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Viscosity | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |

9.2. Other information

Other properties : Clear. Slightly volatile.

SECTION 10: Stability and reactivity

10.1. Reactivity

Upon combustion CO and CO₂ are formed (carbon monoxide - carbon dioxide). Reacts with (strong) oxidizers and with (strong) acids/bases.

10.2. Chemical stability

No data available. Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Gamma Hexalactone

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

| Gamma Hexalactone (695-06-7) | |
|------------------------------|--------------------------------|
| LD50 oral rat | > 5000 mg/kg body weight (Rat) |
| LD50 dermal rat | > 5000 mg/kg body weight (Rat) |

| | |
|---|---|
| Skin corrosion/irritation | : Not classified |
| Serious eye damage/irritation | : Not classified |
| Respiratory or skin sensitization | : 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 | : Based on available data, the classification criteria are not met. |
| Symptoms/injuries after inhalation | : No effects known. |
| Symptoms/injuries after skin contact | : Slight irritation. |
| Symptoms/injuries after eye contact | : Irritation of the eye tissue. |
| Symptoms/injuries after ingestion | : No effects known. |
| Chronic symptoms | : No effects known. |

SECTION 12: Ecological information

12.1. Toxicity

| | |
|-----------------|---|
| Ecology - air | : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009). |
| Ecology - water | : Ground water pollutant. No data available on ecotoxicity. |

12.2. Persistence and degradability

| Gamma Hexalactone (695-06-7) | |
|-------------------------------|---|
| Persistence and degradability | Biodegradability in water: no data available. Biodegradability in soil: no data available. Not established. |

12.3. Bioaccumulative potential

| Gamma Hexalactone (695-06-7) | |
|------------------------------|---|
| Log Pow | 0.60 (Estimated value) |
| Bioaccumulative potential | Low potential for bioaccumulation (Log Kow < 4). Not established. |

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

| | |
|-------------------|-------------------------------------|
| Other information | : Avoid release to the environment. |
|-------------------|-------------------------------------|

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|--------------------------------|--|
| Waste disposal recommendations | : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle/reuse. Specific preliminary treatment. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery. Avoid discharge of large amounts into the sewer. Use appropriate containment to avoid environmental contamination. Dispose in a safe manner in accordance with local/national regulations. |
| Additional information | : LWCA (the Netherlands): KGA category 03. Hazardous waste according to Directive 2008/98/EC. |
| Ecology - waste materials | : Avoid release to the environment. |

Gamma Hexalactone

Safety Data Sheet

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SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT
Not regulated for transport

Additional information

Other information : No supplementary information available.

ADR

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Gamma Hexalactone (695-06-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

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

Eye Irrit. 2 H319

Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Xi; R36

Full text of R-phrases: see section 16

National regulations

No additional information available

15.3. US State regulations

No additional information available

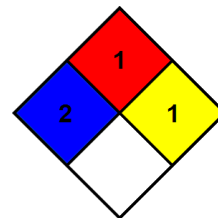
SECTION 16: Other information

Other information : None.

NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard : 1 - Must be preheated before ignition can occur.

NFPA reactivity : 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.



SDS US (GHS HazCom 2012)

Gamma Hexalactone

Safety Data Sheet

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Disclaimer:

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