

Printing date 07/30/2016

Reviewed on 07/30/2016

## 1 Identification

- **Product name**
- **Trade name:** Bis(2,2,6,6-tetramethyl-3,5-heptanedionato)barium hydrate [Ba(TMHD)<sub>2</sub>]
- **Item number:** 56-8500
- **CAS Number:**  
17594-47-7
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Strem Chemicals, Inc.  
7 Mulliken Way  
NEWBURYPORT, MA 01950  
USA  
info@strem.com
- **Information department:** Technical Department
- **Emergency telephone number:**  
EMERGENCY: CHEMTREC: + 1 (800) 424-9300  
During normal opening times: +1 (978) 499-1600

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



Acute Tox. 4 H302 Harmful if swallowed.

- **Label elements**
- **GHS label elements**  
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



- **Signal word** Warning
- **Hazard-determining components of labeling:**  
Bis(2,2,6,6-tetramethyl-3,5-heptanedionato)barium hydrate [Ba(TMHD)<sub>2</sub>]
- **Hazard statements**  
H302 Harmful if swallowed.
- **Precautionary statements**

P231	Handle under inert gas.
P222	Do not allow contact with air.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)

Printing date 07/30/2016

Reviewed on 07/30/2016

**Trade name: Bis(2,2,6,6-tetramethyl-3,5-heptanedionato)barium hydrate [Ba(TMHD)<sub>2</sub>]**

(Contd. of page 1)

- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**

HEALTH	2	Health = 2
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**  
17594-47-7 Bis(2,2,6,6-tetramethyl-3,5-heptanedionato)barium hydrate  
[Ba(TMHD)<sub>2</sub>]

### 4 First-aid measures

- **Description of first aid measures**
- **General information:**  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately rinse with water.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** Immediately call a doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

US

(Contd. on page 3)

**Safety Data Sheet**  
according to OSHA HCS

Printing date 07/30/2016

Reviewed on 07/30/2016

**Trade name: Bis(2,2,6,6-tetramethyl-3,5-heptanedionato)barium hydrate [Ba(TMHD)<sub>2</sub>]**

(Contd. of page 2)

**6 Accidental release measures**

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:**  
Do not allow product to reach sewage system or any water course.  
Inform respective authorities in case of seepage into water course or sewage system.
- **Methods and material for containment and cleaning up:**  
Dispose contaminated material as waste according to item 13.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

**7 Handling and storage**

- **Handling:**
- **Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

**8 Exposure controls/personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Breathing equipment:** Not required.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

(Contd. on page 4)

**Safety Data Sheet**  
according to OSHA HCS

Printing date 07/30/2016

Reviewed on 07/30/2016

**Trade name: Bis(2,2,6,6-tetramethyl-3,5-heptanedionato)barium hydrate [Ba(TMHD)<sub>2</sub>]**

(Contd. of page 3)

- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Safety glasses

**9 Physical and chemical properties**

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

- **Form:** Powder
- **Color:** White
- **Odor:** Odorless
- **Odor threshold:** Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

- **Melting point/Melting range:** 195-200 °C (383-392 °F)
- **Boiling point/Boiling range:** dec.285 subl.22 °C (dec.545 subl.72 °F)

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not determined.

· **Ignition temperature:**

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Not determined.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

- **Lower:** Not determined.
- **Upper:** Not determined.

· **Vapor pressure:** subl.225° hPa (subl.169° mm Hg)

· **Density:** Not determined.

· **Relative density** Not determined.

· **Vapor density** Not applicable.

· **Evaporation rate** Not applicable.

· **Solubility in / Miscibility with**

· **Water:** Insoluble.

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**

- **Dynamic:** Not applicable.
- **Kinematic:** Not applicable.

· **Solvent content:**

- **Organic solvents:** 0.0 %
- **VOC content:** 0.0 g/l / 0.00 lb/gl

· **Solids content:** 100.0 %

(Contd. on page 5)

**Safety Data Sheet**  
according to OSHA HCS

Printing date 07/30/2016

Reviewed on 07/30/2016

**Trade name: Bis(2,2,6,6-tetramethyl-3,5-heptanedionato)barium hydrate [Ba(TMHD)<sub>2</sub>]**

(Contd. of page 4)

· **Other information** No further relevant information available.

**10 Stability and reactivity**

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

**11 Toxicological information**

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

Substance is not listed.

· **NTP (National Toxicology Program)**

Substance is not listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

**12 Ecological information**

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Not known to be hazardous to water.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

US

(Contd. on page 6)

Printing date 07/30/2016

Reviewed on 07/30/2016




**Trade name: Bis(2,2,6,6-tetramethyl-3,5-heptanedionato)barium hydrate [Ba(TMHD)<sub>2</sub>]**

(Contd. of page 5)

**13 Disposal considerations**

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

· <b>UN-Number</b> · <b>DOT, IMDG, IATA</b>	UN1564
· <b>UN proper shipping name</b> · <b>DOT, IATA</b> · <b>IMDG</b>	Barium compounds, n.o.s. BARIUM COMPOUND, N.O.S.
· <b>Transport hazard class(es)</b> · <b>DOT</b>	
	
· <b>Class</b> · <b>Label</b>	6.1 Toxic substances 6.1
· <b>IMDG</b>	
	
· <b>Class</b> · <b>Label</b>	6 6.1
· <b>IATA</b>	
	
· <b>Class</b> · <b>Label</b>	6.1 Toxic substances 6.1
· <b>Packing group</b> · <b>DOT, IMDG, IATA</b>	III
· <b>Environmental hazards:</b> · <b>Marine pollutant:</b>	No
· <b>Special precautions for user</b> · <b>EMS Number:</b> · <b>Stowage Category</b>	Not applicable. F-A,S-A A

(Contd. on page 7)

**Safety Data Sheet**  
according to OSHA HCS

Printing date 07/30/2016

Reviewed on 07/30/2016

**Trade name: Bis(2,2,6,6-tetramethyl-3,5-heptanedionato)barium hydrate [Ba(TMHD)<sub>2</sub>]**

(Contd. of page 6)

- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**      *Not applicable.*
- **Transport/Additional information:**
- **DOT**
- **Quantity limitations**      *On passenger aircraft/rail: 100 kg  
On cargo aircraft only: 200 kg*

---

- **IMDG**
- **Limited quantities (LQ)**      *5kg*
- **Excepted quantities (EQ)**      *Code: E1  
Maximum net quantity per inner packaging: 30 g  
Maximum net quantity per outer packaging: 1000 g*
- **UN "Model Regulation":**      *UN 1564 BARIUM COMPOUNDS, N.O.S., 6.1, III*

**15 Regulatory information**

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

· **Section 355 (extremely hazardous substances):**

*Substance is not listed.*

· **Section 313 (Specific toxic chemical listings):**

*Substance is not listed.*

· **TSCA (Toxic Substances Control Act):**

*Substance is not listed.*

· **Proposition 65**

· **Chemicals known to cause cancer:**

*Substance is not listed.*

· **Chemicals known to cause reproductive toxicity for females:**

*Substance is not listed.*

· **Chemicals known to cause reproductive toxicity for males:**

*Substance is not listed.*

· **Chemicals known to cause developmental toxicity:**

*Substance is not listed.*

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

*Substance is not listed.*

· **TLV (Threshold Limit Value established by ACGIH)**

*Substance is not listed.*

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

*Substance is not listed.*

· **GHS label elements**

*The substance is classified and labeled according to the Globally Harmonized System (GHS).*

(Contd. on page 8)

Printing date 07/30/2016

Reviewed on 07/30/2016

**Trade name: Bis(2,2,6,6-tetramethyl-3,5-heptanedionato)barium hydrate [Ba(TMHD)<sub>2</sub>]**

(Contd. of page 7)

· **Hazard pictograms**



GHS07

· **Signal word** Warning

· **Hazard-determining components of labeling:**

Bis(2,2,6,6-tetramethyl-3,5-heptanedionato)barium hydrate [Ba(TMHD)<sub>2</sub>]

· **Hazard statements**

H302 Harmful if swallowed.

· **Precautionary statements**

P231 Handle under inert gas.

P222 Do not allow contact with air.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**16 Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Technical Department.

· **Contact:** Technical Director

· **Date of preparation / last revision** 07/30/2016 / -

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Acute Tox. 4: Acute toxicity, Hazard Category 4