



SAFETY DATA SHEET

Thimerosal (2-(Ethylmercuriomercurapto)benzoic acid sodium salt)

According to Regulation (EC) No 1907/2006, Annex II, as amended. Commission Regulation (EU) No 2015/830 of 28 May 2015.

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

1.1. Product identifier

Product name	Thimerosal (2-(Ethylmercuriomercurapto)benzoic acid sodium salt)
Product number	13841854
CAS number	54-64-8
EC number	200-210-4

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

Uses advised against	No specific uses advised against are identified.
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1.3. Details of the supplier of the safety data sheet

Supplier	Molekula Ltd. Lingfield Way, Darlington, DL1 4XX, United Kingdom +44 (0) 3302000333 info@molekula.com
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1.4. Emergency telephone number

+44 (0) 1380 725952

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Not Classified
Health hazards	Acute Tox. 3 - H301 Acute Tox. 1 - H310 Acute Tox. 2 - H330 STOT RE 2 - H373
Environmental hazards	Aquatic Chronic 1 - H410

2.2. Label elements

EC number	200-210-4
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Hazard pictograms



Signal word

Danger

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Hazard statements	<p>H301 Toxic if swallowed.</p> <p>H310+H330 Fatal in contact with skin or if inhaled.</p> <p>H373 May cause damage to organs through prolonged or repeated exposure.</p> <p>H410 Very toxic to aquatic life with long lasting effects.</p>
Precautionary statements	<p>P260 Do not breathe dust.</p> <p>P262 Do not get in eyes, on skin, or on clothing.</p> <p>P264 Wash contaminated skin thoroughly after handling.</p> <p>P270 Do not eat, drink or smoke when using this product.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p> <p>P273 Avoid release to the environment.</p> <p>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>P284 [In case of inadequate ventilation] wear respiratory protection.</p> <p>P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.</p> <p>P302+P352 IF ON SKIN: Wash with plenty of water.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P314 Get medical advice/ attention if you feel unwell.</p> <p>P320 Specific treatment is urgent (see medical advice on this label).</p> <p>P330 Rinse mouth.</p> <p>P361+P364 Take off immediately all contaminated clothing and wash it before reuse.</p> <p>P391 Collect spillage.</p> <p>P403+P233 Store in a well-ventilated place. Keep container tightly closed.</p> <p>P405 Store locked up.</p> <p>P501 Dispose of contents/ container in accordance with national regulations.</p>

2.3. Other hazards

This substance is not classified as PBT or vPvB according to current EU criteria.

SECTION 3: Composition/information on ingredients

3.1. Substances

Product name	Thimerosal (2-(Ethylmercuriomercurapto)benzoic acid sodium salt)
CAS number	54-64-8
EC number	200-210-4
Chemical formula	C ₉ H ₉ HgO ₂ S·Na

SECTION 4: First aid measures

4.1. Description of first aid measures

General information	Get medical attention if any discomfort continues. Show this Safety Data Sheet to the medical personnel.
Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Get medical attention. Place unconscious person on their side in the recovery position and ensure breathing can take place.
Ingestion	Get medical attention immediately. Rinse mouth thoroughly with water. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Never give anything by mouth to an unconscious person. Place unconscious person on their side in the recovery position and ensure breathing can take place. Keep affected person under observation.
Skin contact	It is important to remove the substance from the skin immediately. Remove contamination with soap and water or recognised skin cleansing agent. Get medical attention.

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Eye contact Remove any contact lenses and open eyelids wide apart. Rinse with water. Get medical attention if any discomfort continues.

Protection of first aiders It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

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

General information The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation A single exposure may cause the following adverse effects: Difficulty in breathing. Unconsciousness, possibly death.

Ingestion May cause stomach pain or vomiting. May cause severe internal injury.

Skin contact A single exposure may cause the following adverse effects: Pain. Unconsciousness, possibly death.

Eye contact May be slightly irritating to eyes.

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

Notes for the doctor Treat symptomatically. Keep affected person under observation.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards This product is toxic.

Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Very toxic or corrosive gases or vapours.
Carbon dioxide (CO₂).
Carbon monoxide (CO).
Oxides of sulphur.
Oxides of the following substances:
Sodium.
Mercury/Mercury oxides

5.3. Advice for firefighters

Protective actions during firefighting Avoid breathing fire gases or vapours. Evacuate area. Keep upwind to avoid inhalation of gases, vapours, fumes and smoke. Ventilate closed spaces before entering them. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

Special protective equipment for firefighters Wear chemical protective suit. Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Do not touch or walk into spilled material. Avoid inhalation of dust. Use suitable respiratory protection if ventilation is inadequate. Avoid contact with skin and eyes.

6.2. Environmental precautions

Environmental precautions Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Provide adequate ventilation. Collect spillage with a shovel and broom, or similar and reuse, if possible. Collect and place in suitable waste disposal containers and seal securely. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dangerous for the environment. Do not empty into drains. For waste disposal, see Section 13.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Keep container tightly sealed when not in use. This product is toxic. Immediate first aid is imperative. Avoid discharge to the aquatic environment. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

Advice on general occupational hygiene Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store away from incompatible materials (see Section 10). Store locked up. Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage. Protect from light. Light sensitive

Storage class Toxic storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

STEL

TWA

8.2. Exposure controls

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Protective equipment



Appropriate engineering controls

Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimise worker exposure. Ensure the ventilation system is regularly maintained and tested. In case of insufficient ventilation, wear suitable respiratory equipment. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection

Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.

Hand protection

Wear protective gloves. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.

Other skin and body protection

Wear appropriate clothing to prevent any possibility of skin contact.

Hygiene measures

Wash after use and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product.

Respiratory protection

Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with European Standard EN14387. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.

Environmental exposure controls

Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Powder.
Colour	White.
Odour	Odourless.
Odour threshold	No information available.
pH	pH (diluted solution): 6.7-8.2 10 g/l (20°C/68°F)
Melting point	232-233°C/449.6-451.4°F
Initial boiling point and range	No information available.
Flash point	250°C/482°F
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.

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Upper/lower flammability or explosive limits	No information available.
Vapour pressure	No information available.
Vapour density	No information available.
Relative density	No information available.
Solubility(ies)	Soluble in the following materials: Ethanol. Water
Partition coefficient	log Pow: -1.88
Auto-ignition temperature	No information available.
Decomposition Temperature	No information available.

9.2. Other information

Molecular weight	404.81
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SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	See the other subsections of this section for further details.
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10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Violent reactions possible with: Strong oxidising agents. Strong acids. Strong alkalis. Reducing agents. Aluminium.
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10.4. Conditions to avoid

Conditions to avoid	Avoid handling which leads to dust formation. Incompatible Materials Avoid exposure to high temperatures or direct sunlight.
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10.5. Incompatible materials

Materials to avoid	Strong oxidising agents. Strong alkalis. Strong acids.
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10.6. Hazardous decomposition products

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Hazardous decomposition products	<p>Does not decompose when used and stored as recommended.</p> <p>Thermal decomposition or combustion products may include the following substances:</p> <p>Toxic gases or vapours.</p> <p>Carbon dioxide (CO₂).</p> <p>Carbon monoxide (CO).</p> <p>Oxides of:</p> <p>Sodium.</p> <p>Mercury/Mercury oxides</p> <p>Sulphur.</p>
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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Summary Toxic if swallowed.

ATE oral (mg/kg) 100.0

Acute toxicity - dermal

Summary Fatal in contact with skin.

ATE dermal (mg/kg) 5.0

Acute toxicity - inhalation

Summary Fatal if inhaled.

Acute toxicity inhalation (LC₅₀ dust/mist mg/l) 0.051

Species Rat

ATE inhalation (dusts/mists mg/l) 0.051

Skin corrosion/irritation

Summary Based on available data the classification criteria are not met.

Serious eye damage/irritation

Summary Based on available data the classification criteria are not met.

Respiratory sensitisation

Summary Based on available data the classification criteria are not met.

Skin sensitisation

Summary Based on available data the classification criteria are not met.

Germ cell mutagenicity

Summary Based on available data the classification criteria are not met.

Carcinogenicity

Summary Based on available data the classification criteria are not met.

IARC carcinogenicity

None of the ingredients are listed or exempt.

Reproductive toxicity

Summary Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

Summary Based on available data the classification criteria are not met.

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Specific target organ toxicity - repeated exposure

Summary May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

Summary Not relevant. Solid.

General information

The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation

A single exposure may cause the following adverse effects: Difficulty in breathing. Unconsciousness, possibly death.

Ingestion

May cause stomach pain or vomiting. May cause severe internal injury.

Skin contact

A single exposure may cause the following adverse effects: Pain. Unconsciousness, possibly death.

Eye contact

May be slightly irritating to eyes.

Route of exposure

Ingestion Inhalation Skin and/or eye contact

Target organs

No specific target organs known.

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity

Summary Based on available data the classification criteria are not met.

Chronic aquatic toxicity

Summary Very toxic to aquatic life with long lasting effects.

M factor (Chronic) 10

12.2. Persistence and degradability

Persistence and degradability The degradability of the product is not known.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient log Pow: -1.88

12.4. Mobility in soil

Mobility No data available.

12.5. Results of PBT and vPvB assessment

12.6. Other adverse effects

Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information

The generation of waste should be minimised or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

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Disposal methods	Do not empty into drains. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labelled with their contents. Incineration or landfill should only be considered when recycling is not feasible.
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SECTION 14: Transport information

General	For limited quantity packaging/limited load information, consult the relevant modal documentation using the data shown in this section.
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14.1. UN number

UN No. (ADR/RID)	2025
UN No. (IMDG)	2025
UN No. (ICAO)	2025
UN No. (ADN)	2025

14.2. UN proper shipping name

Proper shipping name (ADR/RID)	MERCURY COMPOUND, SOLID, N.O.S. (Thimerosal (2-(Ethylmercuriomercurapto)benzoic acid sodium salt))
Proper shipping name (IMDG)	MERCURY COMPOUND, SOLID, N.O.S. (Thimerosal (2-(Ethylmercuriomercurapto)benzoic acid sodium salt))
Proper shipping name (ICAO)	MERCURY COMPOUND, SOLID, N.O.S. (Thimerosal (2-(Ethylmercuriomercurapto)benzoic acid sodium salt))
Proper shipping name (ADN)	MERCURY COMPOUND, SOLID, N.O.S. (Thimerosal (2-(Ethylmercuriomercurapto)benzoic acid sodium salt))

14.3. Transport hazard class(es)

ADR/RID class	6.1
ADR/RID classification code	T5
ADR/RID label	6.1
IMDG class	6.1
ICAO class/division	6.1
ADN class	6.1

Transport labels



14.4. Packing group

ADR/RID packing group	I
IMDG packing group	I
ICAO packing group	I
ADN packing group	I

14.5. Environmental hazards

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Environmentally hazardous substance/marine pollutant



14.6. Special precautions for user

Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

EmS F-A, S-A

ADR transport category 1

Emergency Action Code 2X

Hazard Identification Number 66
(ADR/RID)

Tunnel restriction code (C/E)

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

Transport in bulk according to Not applicable.

Annex II of MARPOL 73/78
and the IBC Code

SECTION 15: Regulatory information

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

National regulations	Health and Safety at Work etc. Act 1974 (as amended). The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"]. EH40/2005 Workplace exposure limits.
EU legislation	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

Inventories

EU - EINECS/ELINCS

None of the ingredients are listed or exempt.

US - TSCA

Present.

SECTION 16: Other information

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Abbreviations and acronyms used in the safety data sheet	ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
	ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
	RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
	IATA: International Air Transport Association.
	ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air.
	IMDG: International Maritime Dangerous Goods.
	CAS: Chemical Abstracts Service.
	ATE: Acute Toxicity Estimate.
	LC ₅₀ : Lethal Concentration to 50 % of a test population.
	LD ₅₀ : Lethal Dose to 50% of a test population (Median Lethal Dose).
	EC ₅₀ : 50% of maximal Effective Concentration.
	PBT: Persistent, Bioaccumulative and Toxic substance.
	vPvB: Very Persistent and Very Bioaccumulative.
Classification abbreviations and acronyms	Acute Tox. = Acute toxicity
	STOT RE = Specific target organ toxicity-repeated exposure
	Aquatic Chronic = Hazardous to the aquatic environment (chronic)
Classification procedures according to Regulation (EC) 1272/2008	Acute Tox. 1 - H310: Acute Tox. 2 - H330: Acute Tox. 3 - H301: STOT RE 2 - H373: : Expert judgement. Aquatic Chronic 1 - H410: : Expert judgement.
Training advice	Only trained personnel should use this material.
Revision date	10/01/2022
Revision	1
SDS number	590
Hazard statements in full	H301 Toxic if swallowed.
	H310 Fatal in contact with skin.
	H330 Fatal if inhaled.
	H373 May cause damage to organs through prolonged or repeated exposure.
	H410 Very toxic to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.