

## 1. Identification

### Product identifier

Trade name: Thermo Paste

### Relevant identified uses of the substance or mixture and uses advised against

General use: Heat transfer agent without Silicone

### Details of the supplier of the safety data sheet

Company name: Otto Bock Health Care

Street/POB-No.: 3820 W. Great Lakes Drive

Zip code, city: Salt Lake City, UT 84120

USA

WWW: [www.ottobockus.com](http://www.ottobockus.com)

Telephone: +1 (801) 956-2400

Telefax: +1 (801) 956-2401

Department responsible for information:

Quality Department,

Telephone: +1 (801) 954-2304 (7 AM – 3 PM, Mountain Time),

Email: [USRegulatory@ottobock.com](mailto:USRegulatory@ottobock.com)

Additional information:

Corporate headquarters:

Ottobock SE & Co. KGaA

Max-Näder-Straße 15

Duderstadt

Germany

### Emergency telephone number

**CHEMTREC, Telephone: +1 (800) 424-9300**

**Transport:**

**CONSULTANK Lutz Harder GmbH (Contract QUALI003)**

**Telephone: +49 (0)178-4337434 (from USA: 01149 178 4337434)**

## 2. Hazard identification

### Classification of the substance or mixture

Aquatic toxicity - acute - Category 1 Very toxic to aquatic life.

Aquatic toxicity - chronic - Category 1 Very toxic to aquatic life with long lasting effects.

### Label elements

Symbols:



Signal word:

**Warning**

Hazard statements:

Very toxic to aquatic life with long lasting effects.

### Precautionary statements:

Avoid release to the environment.

Collect spillage.

Dispose of contents/container to hazardous or special waste collection point.

### Other hazards

Special danger of slipping by leaking/spilling product.

## 3. Composition/information on ingredients

### Mixtures

Chemical characterization: Mixture on the basis of Zinc oxide and additives

Relevant ingredients:

CAS No.	Designation	Concentration	Classification
CAS 1314-13-2	Zinc oxide	60 - 100 %	Aquatic toxicity - acute - Category 1 (M-factor = 1). Aquatic toxicity - chronic - Category 1 (M-factor = 1).
CAS 122-39-4	Diphenylamine	0 - 1 %	Acute Toxicity - oral - Category 3. Acute Toxicity - dermal - Category 3. Acute Toxicity - inhalative - Category 3. Specific Target Organ Toxicity (Repeated Exposure) - Category 2. Aquatic toxicity - acute - Category 1. Aquatic toxicity - chronic - Category 1.

The actual concentration or concentration range is withheld as a trade secret.

## 4. First aid measures

In case of inhalation: Move victim to fresh air. Make sure he/she is warm and comfortable. Seek medical attention.

Following skin contact: Take off contaminated clothing and wash it before reuse. After contact with skin, wash immediately with soap and plenty of water.  
In case of skin irritation, consult a physician.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. In case of troubles or persistent symptoms, consult an ophthalmologist.

After swallowing: Rinse mouth with water. Do not induce vomiting.  
Never give an unconscious person anything through the mouth.  
Seek medical attention.

### Most important symptoms/effects, acute and delayed

In case of ingestion: stomachache, vomiting

### Information to physician

Treat symptomatically.

## 5. Fire-fighting measures

### Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:

foam, dry chemical powder, carbon dioxide.

### Specific hazards arising from the chemical

Hazardous vapors may form during fires. In case of fire may be liberated: Carbon monoxide and carbon dioxide.

### Protective equipment and precautions for firefighters

Wear self-contained positive pressure breathing apparatus and full firefighting protective clothing.

Additional information: Do not allow water used to extinguish fire to enter drains, ground or waterways.

## 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Wear appropriate protective equipment.  
Avoid contact with skin and eyes.

Environmental precautions:

Do not allow to penetrate into soil, waterbodies or drains.

### Methods and material for containment and cleaning up

Methods for clean-up: Soak up with absorbent materials such as sand, siliceous earth, acid- or universal binder.  
Store in special closed containers and dispose of according to ordinance. Final cleaning.  
Recommended cleansing agent: Water

Additional information: Special danger of slipping by leaking/spilling product.

## 7. Handling and storage

### Precautions for safe handling

Advices on safe handling: When not in use, keep containers tightly closed.  
Provide adequate ventilation, and local exhaust as needed.  
Avoid contact with skin, eyes, and clothing. Wear appropriate protective equipment.

### Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:

Keep only in the original container in a cool, well-ventilated place away from food.  
Protect from frost.

## 8. Exposure controls/personal protection

### Control parameters

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
1314-13-2	Zinc oxide	USA: ACGIH: STEL	10 mg/m <sup>3</sup> (respirable fraction)
		USA: ACGIH: TWA	2 mg/m <sup>3</sup> (respirable fraction)
		USA: IDLH: TWA	500 mg/m <sup>3</sup>
		USA: NIOSH: Ceiling	15 mg/m <sup>3</sup> (Dusts)
		USA: NIOSH: STEL	10 mg/m <sup>3</sup> (Smoke)
		USA: NIOSH: TWA	5 mg/m <sup>3</sup> (Dusts)
		USA: NIOSH: TWA	5 mg/m <sup>3</sup> (Smoke)
		USA: OSHA: TWA	15 mg/m <sup>3</sup> (total dust)
		USA: OSHA: TWA	5 mg/m <sup>3</sup> (respirable fraction or Smoke)
122-39-4	Diphenylamine	USA: ACGIH: TWA	10 mg/m <sup>3</sup>
		USA: NIOSH: TWA	10 mg/m <sup>3</sup>

Additional information: Zinc oxide is embedded in the product and not available as respirable dusts.

### Appropriate engineering controls

Provide adequate ventilation, and local exhaust as needed.

### Personal protection equipment (PPE)

Respiratory protection: Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded. The filter class must be suitable for the maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product.

Hand protection: Protective gloves according to OSHA Standard - 29 CFR: 1910.138. Glove material recommended: Butyl caoutchouc (butyl rubber). Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection: Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.

Body protection: Wear suitable protective clothing.

General hygiene considerations:

Avoid contact with skin and eyes. Wash hands before breaks and after work.

Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse.

When using do not eat, drink or smoke.

### Environmental exposure controls

Refer to 6.: Section "Environmental precautions".

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

Physical state at 68 °F and 101.3 kPa

solid

Form: pasty

Color:

white

Odor:	No data available
Odor threshold:	No data available
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	> 482 °F
Flammability:	No data available
Explosion limits:	No data available
Flash point/flash point range:	446 °F (c.c.)
Evaporation rate:	No data available
Auto-ignition temperature:	> 797 °F
Decomposition temperature:	No data available
pH:	Not applicable
Viscosity:	No data available
Water solubility:	insoluble
Partition coefficient: n-octanol/water:	No data available
Vapor pressure:	No data available
Density:	No data available
Vapor density:	No data available
Particle characteristics:	No data available

### Additional information

Additional information:	Relative density at 68 °F: 2,04
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## 10. Stability and reactivity

Reactivity:	No data available
Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions:	No dangerous reactions with proper and specified storage and handling
Conditions to avoid:	Keep away from heat sources, sparks and open flames. Protect from frost.
Incompatible materials:	No data available
Hazardous decomposition products:	Carbon monoxide and carbon dioxide

## 11. Toxicological information

### Information on toxicological effects

Toxicological effects: The statements are derived from the properties of the single components. No toxicological data is available for the product as such.

Acute toxicity (oral): Based on available data, the classification criteria are not met.  
ATEmix calculated: > 2,000 mg/kg

Acute toxicity (dermal): Based on available data, the classification criteria are not met.  
ATEmix calculated: > 2,000 mg/kg

Acute toxicity (inhalative): Based on available data, the classification criteria are not met.  
ATEmix calculated (Dusts): > 5 mg/L

Skin corrosion/irritation: Lack of data.

Serious eye damage/irritation: Lack of data.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Lack of data.

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive toxicity: Lack of data.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): Lack of data.

Specific target organ toxicity (repeated exposure): Lack of data.

Aspiration hazard: Lack of data.

### Symptoms

In case of ingestion: stomachache, vomiting

### General remarks

Carcinogenicity:  
NTP: Not listed, IARC: Not listed, OSHA REGULATED: Not listed

## 12. Ecological information

### Ecotoxicity

Aquatic toxicity: Very toxic to aquatic life with long lasting effects.

### Persistence and degradability

Further details: No data available

### Bioaccumulative potential

Partition coefficient: n-octanol/water:  
No data available

### Mobility in soil

Substance is heavier than water and sinks.

### Other adverse effects

General information: Do not allow to penetrate into soil, waterbodies or drains.

## 13. Disposal considerations

### Waste treatment methods

#### Product

Recommendation: Dispose of waste according to applicable legislation.

#### Package

Recommendation: Dispose of waste according to applicable legislation.

## 14. Transport information

### UN number

DOT: UN3077

IMDG, IATA-DGR: UN 3077

### UN proper shipping name

DOT, IMDG, IATA-DGR: UN 3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (zinc oxide)

### Transport hazard class(es)

DOT: 9

IMDG: Class 9, Subrisk -

IATA-DGR: Class 9



### Packing group

DOT, IMDG, IATA-DGR: III

### Environmental hazards

Marine pollutant: yes

### Transport in bulk according to IMO instruments

No data available

### Special precautions for user

#### USA: Department of Transportation (DOT)

Labels: 9

Symbols: G

Special Provisions: 8, 146, 335, 384, 441, A112, B54, B120, IB8, IP3, N20, N91, T1, TP33

Packaging – Exceptions: 155

Packaging – Non-bulk: 213

Packaging – Bulk: 240

Quantity limitations – Passenger aircraft / rail:

No limit

Quantity limitations – Cargo only: No limit

Vessel stowage – Location: A

### Sea transport (IMDG)

EmS: F-A, S-F  
Special Provisions: 274 335 375 966 967 969  
Limited quantities: 5 kg  
Excepted quantities: E1  
Package - Instructions: P002, LP02  
Package - Provisions: PP12  
IBC - Instructions: IBC08  
IBC - Provisions: B3  
Tank instructions - IMO: -  
Tank instructions - UN: T1, BK2, BK2, BK3  
Tank instructions - Provisions: TP33  
Stowage and handling: Category A. SW23  
Properties and observations: -  
Marine pollutant: yes  
Segregation group: none

### Air transport (IATA)

Proper shipping name: UN 3077,  
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(zinc oxide)  
Hazard label: Miscellaneous & Environmentally hazardous  
Excepted Quantity Code: E1  
Passenger and Cargo Aircraft: Ltd.Qty.: Pack.Instr. Y956 - Max. Net Qty/Pkg. 30 kg G  
Passenger and Cargo Aircraft: Pack.Instr. 956 - Max. Net Qty/Pkg. 400 kg  
Cargo Aircraft only: Pack.Instr. 956 - Max. Net Qty/Pkg. 400 kg  
Special Provisions: A97 A158 A179 A197 A215  
Emergency Response Guide-Code (ERG): 9L

### Further information

Protect from frost.

## 15. Regulatory information

### National regulations - U.S. Federal Regulations

Zinc oxide: TSCA Inventory: listed  
NIOSH Recommendations:  
Occupational Health Guideline: 0675\*  
Diphenylamine: TSCA Inventory: listed  
Clean Air Act:  
CAA SOCM Chemical: yes  
Other Environmental Laws:  
RCRA Hazardous Wastes: listed  
RCRA Groundwater Monitoring: listed  
SARA Title III, Section 313, Toxic Release: NPFAS; De Minimis <=0.1 %;  
Thresholds 25000/10000 lbs  
NIOSH Recommendations:  
Occupational Health Guideline: 0240

### National regulations - U.S. State Regulations

No data available



## Further regulations, limitations and legal requirements

No data available

## 16. Other information

Text for labeling: Contains 60 - 100 % Zinc oxide, 0 - 1 % Diphenylamine.

Revision date: 1/1/2026

Date of first version: 8/17/2016

Reason of change: Changes in section 14: IATA-DGR 2026

Hazard rating systems: NFPA Hazard Rating:



Health: 1 (Slight)

Fire: 1 (Slight)

Reactivity: 0 (Minimal)

HMIS Version III Rating:

Health: 1 (Slight)

Flammability: 1 (Slight)

Physical Hazard: 0 (Minimal)

Personal Protection: X = Consult your supervisor

HEALTH	1
FLAMMABILITY	1
PHYSICAL HAZARD	0
	X

### Abbreviations and acronyms:

Acute Toxicity: Acute toxicity

Aquatic toxicity - acute: Hazardous to the aquatic environment - acute

Aquatic toxicity - chronic: Hazardous to the aquatic environment - chronic

AS/NZS: Australian Standards/New Zealand Standards

ATEmix: Acute Toxicity Estimate of mixture

CAS: Chemical Abstracts Service

CFR: Code of Federal Regulations

CLP: Classification, Labelling and Packaging

DMEL: Derived minimal effect level

DNEL: Derived no-effect level

DOT: Department of Transportation's Safety Regulations (USA)

EC: European Community

EmS: Emergency Response Procedures for Ships Carrying Dangerous Goods

EN: European Standard

EQ: Excepted quantities

IATA: International Air Transport Association

IATA-DGR: International Air Transport Association – Dangerous Goods Regulations

IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk

IMDG Code: International Maritime Dangerous Goods Code

IMO: International Maritime Organization

MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships

M-factor: Multiplication factor

OEL: Occupational Exposure Limit Value

OSHA: Occupational Safety and Health Administration

PBT: Persistent, bioaccumulative and toxic

PNEC: Predicted no-effect concentration

STOT RE: Specific target organ toxicity - repeated exposure

TLV: Threshold Limit Value

TRGS: Technical Rules for Hazardous Substances

UN: United Nations

vPvB: Very persistent and very bioaccumulative

WEL: Workplace Exposure Limit

## Department issuing data sheet

Contact person: see section 1: Department responsible for information

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.