

# SAFETY DATA SHEET

## 1. Identification

**Product identifier** Ormet 200 Series (270, 272, 274)

**CAS #** Mixture

### Manufacturer / Importer / Supplier / Distributor information

**Company name** Ormet Circuits, Inc.  
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## 2. Hazard(s) identification

**Physical hazards** Not applicable.  
**Health hazards** Skin corrosion/irritation Category 2  
Serious eye damage/eye irritation Category 2A  
Sensitization, skin Category 1  
**OSHA hazard(s)** Not classified.

**Label elements**  
**Hazard symbol**



**Signal word** Warning  
**Hazard statement** Causes skin irritation. Causes serious eye irritation. May cause an allergic skin reaction. Toxic to aquatic life with long lasting effects.

### Precautionary statement

**Prevention** Wear protective gloves and eye/face protection.

Wash thoroughly after handling. Avoid release to the environment.

**Response** IF IN EYES: Rinse bare eyes with water for several minutes. If eye irritation persists: Get medical advice/attention. IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Collect spillage.

**Storage** Store away from incompatible materials.

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

## 3. Composition/information on ingredients

Mixture

### Hazardous Components

Chemical name	CAS number	%
Copper	7440-50-8	10-60
Tin	7440-31-5	10-50
Bismuth	7440-69-9	0-10
N,N,N',N' tetrakis(2-hydroxyethyl)ethylene diamine	140-07-8	1-5
Glycol Ether (mixture)	112-34-5 and 055934-93-5	1-5
Fatty acid (mixture)	90990-09-3 and 677-01-3	1-5

**Composition comments:** All concentrations are in percent by weight.

## 4. First-aid measures

<b>Inhalation</b>	Low probability due to paste form. Move to fresh air. If breathing is difficult, give oxygen. Get medical attention if any discomfort continues.
<b>Skin contact</b>	Wash skin thoroughly with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.
<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops or persists.
<b>Ingestion</b>	Rinse mouth thoroughly. Large quantities: Get medical attention if symptoms occur.
<b>Most important symptoms/effects, acute and delayed</b>	Irritation of eyes and mucous membranes. Skin irritation. Dermatitis. May cause redness and pain.
<b>General information</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Use fire-extinguishing media appropriate for surrounding materials.
<b>Unsuitable extinguishing media</b>	None known.
<b>Specific hazards arising from the chemical</b>	By heating and fire, harmful vapors/gases may be formed.
<b>Special protective equipment and precautions for firefighters</b>	As with any fire, wear self-contained breathing apparatus and full protective clothing.

## 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Avoid inhalation of vapors and contact with skin and eyes. Use Personal Protective Equipment recommended in Section 8.
<b>Methods and materials for containment and cleaning up</b>	Scoop up paste material and deposit in appropriate containers. Clean surface thoroughly to remove residual contamination.
<b>Environmental precautions</b>	Avoid discharge into drains, water courses or onto the ground. Notify local authorities, if required.

## 7. Handling and storage

<b>Precautions for safe handling</b>	Provide adequate ventilation. Avoid inhalation of vapors. Avoid contact with eyes, skin, and clothing. Use Personal Protective Equipment recommended in section 8 of the MSDS. Observe good industrial hygiene practices.
<b>Conditions for safe storage, including any incompatibilities</b>	Keep containers tightly closed. Keep away from heat, sparks and open flame.

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. ACGIH Threshold Limit Values

Components	Type	Value
Copper (CAS 7440-50-8)	TWA	2 mg/m <sup>3</sup>
Silver (CAS 7440-22-4)	TWA	0.1 mg/m <sup>3</sup>
Tin (CAS 7440-31-5)	TWA	2 mg/m <sup>3</sup>
Triethanolamine (CAS 102-71-6)	TWA	5 mg/m <sup>3</sup>
Glycol ether (CAS 112-34-5)	TWA	10/m <sup>3</sup>
Glycol ether (CAS 055934-93-5)	TWA	10mg/m <sup>3</sup>

<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Appropriate engineering controls</b>	Provide adequate ventilation.

**Individual protection measures, such as personal protective equipment**

<b>Eye/face protection</b>	Good general ventilation should be sufficient to control airborne levels. A NIOSH approved dust/mist respirator is recommended when TLV levels are exceeded.
<b>Skin protection</b>	Avoid unnecessary skin contact with this material. Use appropriate chemical protective gloves when handling.
<b>Respiratory protection</b>	Wear respiratory suitable filter.
<b>General hygiene considerations</b>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**9. Physical and chemical properties**

<b>Appearance</b>	Paste
<b>Physical state</b>	Liquid.
<b>Form</b>	Paste.
<b>Color</b>	Brown.
<b>Odor</b>	Mild.
<b>Melting point/freezing point</b>	Not available.
<b>Initial boiling point and boiling range</b>	Not available.
<b>Flash point</b>	> 302 °F (> 150 °C) Closed Cup
<b>Relative density</b>	4.5 (g/cc, 25 °C)
<b>Solubility (water)</b>	Not miscible or difficult to mix
<b>Viscosity</b>	25000 cP (25 °C)

**10. Stability and reactivity**

<b>Reactivity</b>	The product is non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Stable at normal conditions
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Excessive heat.
<b>Incompatible materials</b>	Oxidizing agents. Strong acids. Strong bases.
<b>Hazardous decomposition products</b>	Carbon oxides. Metal oxides.

**11. Toxicological information****Information on likely routes of exposure**

<b>Ingestion</b>	Ingestion may cause irritation and malaise.
<b>Inhalation</b>	In high concentrations, vapors may irritate throat and respiratory system and cause coughing.
<b>Skin contact</b>	Causes skin irritation.
<b>Eye contact</b>	Causes serious eye irritation.
<b>Symptoms related to the physical, chemical and toxicological characteristics</b>	Irritation of eyes and mucous membranes. Dermatitis. Skin irritation. May cause redness and pain.

**Information on toxicological effects**

<b>Acute toxicity</b>	Ingestion may cause irritation and malaise. Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain.
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Components	Species	Test Results
Silver (CAS 7440-22-4)		
<i>Dermal</i> LD50	Rat	> 2000 mg/kg
<i>Oral</i> LD50	Rat	> 5000 mg/kg

Triethanolamine (CAS 102-71-6)		
<i>Dermal</i> LD50	Rabbit	> 20000 mg/kg
<i>Oral</i> LD50	Rabbit	2200 mg/kg

<b>Skin corrosion/irritation</b>	Causes skin irritation.
<b>Serious eye damage/eye irritation</b>	Causes serious eye irritation.
<b>Respiratory sensitization</b>	No data available.
<b>Skin sensitization</b>	May cause an allergic skin reaction.
<b>Germ cell mutagenicity</b>	No data available.
<b>Carcinogenicity</b>	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
<b>Reproductive toxicity</b>	No data available.
<b>Chronic effects</b>	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

## 12. Ecological information

<b>Ecotoxicity</b>	Toxic to aquatic life with long lasting effects.
<b>Persistence and degradability</b>	Not available.
<b>Bioaccumulative potential</b>	Not available.
<b>Mobility in soil</b>	Not available.
<b>Other adverse effects</b>	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## 13. Disposal considerations

<b>Disposal instructions</b>	Dispose in accordance with all applicable regulations. Do not allow this material to drain into sewers/water supplies.
<b>Hazardous waste code</b>	Not regulated.
<b>Waste from residues / unused products</b>	Dispose of in accordance with local regulations.
<b>Contaminated packaging</b>	Since emptied containers retain product residue, follow label warnings even after container is emptied.

## 14. Transport information

<b>DOT</b>	Not regulated
<b>IATA</b>	Not regulated
<b>IMDG</b>	Not regulated
<b>Special precautions for user</b>	Read safety instructions, MSDS and emergency procedures before handling.
<b>UN Transport #</b>	EUH401
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not applicable

## 15. Regulatory information

<b>US federal regulations</b>	<b>No reportable quantities</b>
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## 16. Other information, including date of preparation or last version

**Issue date** 04-23-2014

**Revision date** -

**Version #** 01

**Further information** The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

**References**  
ACGIH  
EPA: Acquire database  
US. IARC Monographs on Occupational Exposures to Chemical Agents  
HSDB® - Hazardous Substances Data Bank  
IARC Monographs. Overall Evaluation of Carcinogenicity  
National Toxicology Program (NTP) Report on Carcinogens  
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices

**Disclaimer** This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.