



# SAFETY DATA SHEET

## 1. Identification

**Product identifier** TPCM 5000  
**Other means of identification** None.  
**Recommended use** Thermal interface material.  
**Recommended restrictions** None known.

### Manufacturer/Importer/Supplier/Distributor information

**Supplier** Laird  
**Address** 4707 Detroit Ave  
Ave Cleveland, Ohio 44102  
USA  
**Telephone number** +1-216-939-2300  
**Email** clv-customerservice@lairdtech.com

**Supplier** Laird  
**Address** C3&C4 Building, HongTai Industry Park, NO 87 TaiFeng Road, TEDA  
TianJin, China  
**Telephone number** +86(0)22-66298160

## 2. Hazard(s) identification

**Physical hazards** Not classified.

**Health hazards** Not classified.

**OSHA defined hazards** Not classified.

### Label elements

**Hazard symbol** None.

**Signal word** None.

**Hazard statement** This product is considered as an Article as outlined in OSHA's Hazardous Communication Standard (29 CFR 1910.1200), and thus is not required to have a Safety Data Sheet (SDS). This SDS is prepared and offered for information only. The mixture does not meet the criteria for classification.

### Precautionary statement

**Prevention** Observe good industrial hygiene practices.

**Response** Wash hands after handling.

**Storage** Store away from incompatible materials.

**Disposal** Dispose of waste and residues in accordance with local authority requirements.

**Hazard(s) not otherwise classified (HNOC)** None known.

**Supplemental information** This material is encapsulated in a polymeric binder which eliminates airborne exposure to dust hazard.

## 3. Composition/information on ingredients

### Mixtures

| Chemical name  | CAS number  | %           |
|----------------|-------------|-------------|
| Zinc oxide     | 1314-13-2   | 8 - 20      |
| Trade Secret 1 | Proprietary | Proprietary |
| Trade Secret 2 | Proprietary | Proprietary |

**Composition comments** The ingredients in this product are encapsulated within the polymer matrix, therefore no exposure to these materials is expected during normal use/handling of this product. The exposure limits listed are provided for information purpose only.  
All concentrations are in percent by weight.  
Components not listed are either non-hazardous or are below reportable limits.

## 4. First-aid measures

**Inhalation** Not relevant, due to the form of the product.

**Skin contact** Wash hands with water as a precaution. No adverse effects due to skin contact are expected.

**Eye contact** Flush eyes with water as a precaution. No adverse effects due to eye contact are expected.

**Ingestion** Rinse mouth. No harmful effects expected in amounts likely to be ingested by accident.

**Most important symptoms/effects, acute and delayed** Under normal conditions of intended use, this product is not expected to be a health risk.

**Indication of immediate medical attention and special treatment needed** Treat symptomatically.

**General information** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## 5. Fire-fighting measures

**Suitable extinguishing media** Use fire-extinguishing media appropriate for surrounding materials.

**Unsuitable extinguishing media** No restrictions known.

**Specific hazards arising from the chemical** During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters** Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

**Fire fighting equipment/instructions** In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials.

**General fire hazards** Contains one or more components that will burn if involved in a fire.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up** Stop the flow of material, if this is without risk. Following product recovery, flush area with water. Sweep up or gather material and place in appropriate container for disposal. For waste disposal, see section 13 of the SDS.

**Environmental precautions** Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

**Precautions for safe handling** No special precautions are necessary beyond normal good hygiene practices. See Section 8 of the SDS for additional personal protection advice when handling this product.

**Conditions for safe storage, including any incompatibilities** Store in closed original container in a dry place. Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| Components                 | Type | Value                | Form                 |
|----------------------------|------|----------------------|----------------------|
| Trade Secret 1             | PEL  | 5 mg/m <sup>3</sup>  | Respirable fraction. |
|                            |      | 15 mg/m <sup>3</sup> | Total dust.          |
|                            |      | 1 mg/m <sup>3</sup>  | Respirable dust.     |
| Zinc oxide (CAS 1314-13-2) | PEL  | 5 mg/m <sup>3</sup>  | Respirable fraction. |
|                            |      | 5 mg/m <sup>3</sup>  | Fume.                |
|                            |      | 15 mg/m <sup>3</sup> | Total dust.          |

**US. OSHA Table Z-3 (29 CFR 1910.1000)**

| Components                 | Type | Value                | Form                 |
|----------------------------|------|----------------------|----------------------|
| Trade Secret 1             | TWA  | 5 mg/m <sup>3</sup>  | Respirable fraction. |
|                            |      | 15 mg/m <sup>3</sup> | Total dust.          |
|                            |      | 50 mppcf             | Total dust.          |
|                            |      | 15 mppcf             | Respirable fraction. |
| Zinc oxide (CAS 1314-13-2) | TWA  | 5 mg/m <sup>3</sup>  | Respirable fraction. |
|                            |      | 15 mg/m <sup>3</sup> | Total dust.          |
|                            |      | 50 mppcf             | Total dust.          |
|                            |      | 15 mppcf             | Respirable fraction. |

**US. ACGIH Threshold Limit Values**

| Components                 | Type | Value                    | Form                 |
|----------------------------|------|--------------------------|----------------------|
| Trade Secret 1             | TWA  | 1 mg/m <sup>3</sup>      | Respirable fraction. |
| Trade Secret 2             | TWA  | 0.0001 mg/m <sup>3</sup> | Inhalable fraction.  |
| Zinc oxide (CAS 1314-13-2) | STEL | 10 mg/m <sup>3</sup>     | Respirable fraction. |
|                            | TWA  | 2 mg/m <sup>3</sup>      | Respirable fraction. |

**US. NIOSH: Pocket Guide to Chemical Hazards**

| Components                 | Type    | Value                | Form                               |
|----------------------------|---------|----------------------|------------------------------------|
| Trade Secret 1             | TWA     | 5 mg/m <sup>3</sup>  | Respirable.                        |
|                            |         | 5 mg/m <sup>3</sup>  | Welding fume or pyrophoric powder. |
|                            |         | 10 mg/m <sup>3</sup> | Total                              |
| Zinc oxide (CAS 1314-13-2) | Ceiling | 15 mg/m <sup>3</sup> | Dust.                              |
|                            | STEL    | 10 mg/m <sup>3</sup> | Fume.                              |
|                            | TWA     | 5 mg/m <sup>3</sup>  | Dust.                              |
|                            |         | 5 mg/m <sup>3</sup>  | Fume.                              |

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Exposure guidelines****US ACGIH Threshold Limit Values: Skin designation**

Trade Secret 2 (CAS Proprietary)

Danger of cutaneous absorption

**Appropriate engineering controls** In an industrial work environment no special precautions or control measures are required. Used as intended, this product is not expected to generate potentially hazardous quantities of dust or fumes.

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

**Eye/face protection** If contact is likely, safety glasses with side shields are recommended.

**Skin protection****Hand protection**

For prolonged or repeated skin contact use suitable protective gloves. Suitable gloves can be recommended by the glove supplier.

**Skin protection****Other**

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

**Respiratory protection**

In case of insufficient ventilation, wear suitable respiratory equipment. If respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134.

**Thermal hazards**

Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations**

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

### Appearance

|                |             |
|----------------|-------------|
| Physical state | Solid.      |
| Form           | Solid sheet |
| Color          | Gray.       |

**Odor** Mild.

**Odor threshold** Property has not been measured.

**pH** Not applicable, product is insoluble.

**Melting point/freezing point** Not applicable.

**Initial boiling point and boiling range** Not applicable.

**Flash point** Not applicable.

**Evaporation rate** Not applicable, material is a solid.

**Flammability (solid, gas)** Non flammable.

### Upper/lower flammability or explosive limits

**Explosive limit - lower (%)** Not applicable.

**Explosive limit - upper (%)** Not applicable.

**Vapor pressure** Not applicable, material is a solid.

**Vapor density** Not applicable, material is a solid.

**Relative density** 2.56

**Relative density temperature** 77 °F (25 °C)

### Solubility(ies)

**Solubility (water)** Insoluble.

**Partition coefficient (n-octanol/water)** Not applicable, product is a mixture.

**Auto-ignition temperature** Not applicable.

**Decomposition temperature** Not applicable.

**Viscosity** Not applicable.

### Other information

**Explosive properties** Not explosive.

**Oxidizing properties** Not oxidizing.

## 10. Stability and reactivity

**Reactivity** The product is stable and non-reactive under normal conditions of use, storage and transport.

**Chemical stability** Material is stable under normal conditions.

**Possibility of hazardous reactions** No dangerous reaction known under conditions of normal use.

**Conditions to avoid** Contact with incompatible materials.

**Incompatible materials** Strong oxidizing agents.

**Hazardous decomposition products** Thermal decomposition or combustion may produce: Fumes of metal oxides. Carbon oxides.

## 11. Toxicological information

### Information on likely routes of exposure

**Inhalation** Due to the physical form of the product, the ingredients are not expected to present a hazard by inhalation.

**Skin contact** No adverse effects due to skin contact are expected.

**Eye contact** No adverse effects due to eye contact are expected.

**Ingestion** No harmful effects expected in amounts likely to be ingested by accident.

**Symptoms related to the physical, chemical and toxicological characteristics** Under normal conditions of intended use, this product is not expected to be a health risk.

## Information on toxicological effects

|  |  |
|--|--|
| <b>Acute toxicity</b>  | Not expected to be acutely toxic.  |
| <b>Skin corrosion/irritation</b>   | No adverse effects due to skin contact are expected.   |
| <b>Serious eye damage/eye irritation</b>                                 | No adverse effects due to eye contact are expected.  |
| <b>Respiratory or skin sensitization</b>                                 |  |
| <b>ACGIH sensitization</b>   |  |
| Natural rubber latex, as inhalable allergenic proteins (CAS Proprietary) | Dermal sensitization<br>Respiratory sensitization  |
| <b>Respiratory sensitization</b>   | Not a respiratory sensitizer.  |
| <b>Skin sensitization</b>  | This product is not expected to cause skin sensitization.  |
| <b>Germ cell mutagenicity</b>  | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |
| <b>Carcinogenicity</b>   | Not classifiable as to carcinogenicity to humans.  |
| <b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>            | Not listed.  |
| <b>NTP Report on Carcinogens</b>   | Not listed.  |
| <b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)</b>    | Not listed.  |
| <b>Reproductive toxicity</b>   | This product is not expected to cause reproductive or developmental effects.                                     |
| <b>Specific target organ toxicity - single exposure</b>                  | Not classified.  |
| <b>Specific target organ toxicity - repeated exposure</b>                | Not classified.  |
| <b>Aspiration hazard</b>   | Not relevant, due to the form of the product.  |
| <b>Chronic effects</b>   | Chronic effects are not expected when this product is used as intended.  |

## 12. Ecological information

**Ecotoxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

| Components                 | Species                         | Test Results         |
|----------------------------|---------------------------------|----------------------|
| Zinc oxide (CAS 1314-13-2) |                                 |                      |
| <b>Aquatic</b>             |                                 |                      |
| Crustacea                  | LC50 Water flea (Daphnia magna) | 0.098 mg/l, 48 Hours |

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential** The product has not been tested.

**Mobility in soil** The product is insoluble in water.

**Other adverse effects** None known.

## 13. Disposal considerations

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products** Dispose in accordance with local regulations. Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport information

### DOT

Not regulated as dangerous goods.

### IATA

Not regulated as dangerous goods.

### IMDG

Not regulated as dangerous goods.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.

## 15. Regulatory information

**US federal regulations** This product is an article pursuant to 29 CFR 1910.1200 and, as such, is not subject to the OSHA Hazard Communication Standard.

### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

### CERCLA Hazardous Substance List (40 CFR 302.4)

Zinc oxide (CAS 1314-13-2) Listed.

### SARA 304 Emergency release notification

Not regulated.

### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

**Toxic Substances Control Act (TSCA)** All components of the mixture on the TSCA 8(b) inventory are designated "active".

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

#### SARA 302 Extremely hazardous substance

Not listed.

**SARA 311/312 Hazardous chemical** No

#### SARA 313 (TRI reporting)

| Chemical name  | CAS number  | % by wt.    |
|----------------|-------------|-------------|
| Trade Secret 1 | Proprietary | Proprietary |
| Zinc oxide     | 1314-13-2   | 8 - 20      |

### Other federal regulations

#### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

#### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

### US state regulations

#### US. Massachusetts RTK - Substance List

Trade Secret 1 (CAS Proprietary)

Zinc oxide (CAS 1314-13-2)

#### US. New Jersey Worker and Community Right-to-Know Act

Trade Secret 1 (CAS Proprietary)

Zinc oxide (CAS 1314-13-2)

#### US. Pennsylvania Worker and Community Right-to-Know Law

Trade Secret 1 (CAS Proprietary)

Zinc oxide (CAS 1314-13-2)

#### US. Rhode Island RTK

Trade Secret 1 (CAS Proprietary)

Zinc oxide (CAS 1314-13-2)

## California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Trade Secret 1 (CAS Proprietary)

### International Inventories

| Country(s) or region        | Inventory name   | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| China                       | Inventory of Existing Chemical Substances in China (IECSC) | Yes                    |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory              | Yes                    |

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

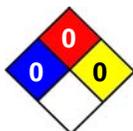
**Issue date** 28-February-2022

**Revision date** -

**Version #** 01

**HMIS® ratings**  
Health: 0  
Flammability: 0  
Physical hazard: 0

**NFPA ratings**



**References** EPA: AQUIRE database

**Disclaimer** Laird cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.