



Revision Number: 006.0

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1. PRODUCT AND COMPANY IDENTIFICATION

Product name: LOCTITE TCF 4000 PXF known as POWERSTRATE PXF 0.32 X 0.3E
Product type: Phase Change Thermal Interface Material (PCTIM)
Restriction of Use: None identified
Company address: Henkel Corporation
 14000 Jamboree Road
 Irvine, CA 92606

IDH number: 1887215

Region: United States

Contact information:
 Telephone: 1.888.9.HENKEL (1.888.943.6535)
 MEDICAL EMERGENCY Phone: Poison Control Center
 1-877-671-4608 (toll free) or 1-303-592-1711
 TRANSPORT EMERGENCY Phone: CHEMTREC
 1-800-424-9300 (toll free) or 1-703-527-3887
 Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER: CAUSES SKIN IRRITATION.
 CAUSES SERIOUS EYE IRRITATION.
 MAY CAUSE DROWSINESS OR DIZZINESS.
 MAY DAMAGE FERTILITY OR THE UNBORN CHILD.

| HAZARD CLASS | HAZARD CATEGORY |
|--|-----------------|
| SKIN IRRITATION | 2 |
| EYE IRRITATION | 2A |
| REPRODUCTIVE TOXICITY | 1B |
| SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE | 3 |

PICTOGRAM(S)



Precautionary Statements

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust or fumes. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear eye and face protection. Wear protective gloves. Use personal protective equipment as required.

Response: IF ON SKIN: Wash with plenty of soap and water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical attention. If skin irritation occurs: Get medical attention. If eye irritation persists: Get medical attention. Take off contaminated clothing.

Storage: Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal: Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

| Hazardous Component(s) | CAS Number | Percentage* |
|---|-------------|-------------|
| Spherical aluminum powder | 7429-90-5 | 60 - 100 |
| Hydrocarbon co-oligomer | Proprietary | 5 - 10 |
| Hydrocarbon waxes, petroleum, clay-treated microc | 64742-42-3 | 1 - 5 |

* Exact percentage is a trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

| | |
|----------------------|---|
| Inhalation: | Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. If symptoms develop and persist, get medical attention. |
| Skin contact: | Remove contaminated clothing and footwear. Immediately flush skin with plenty of water (using soap, if available). If symptoms develop and persist, get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse. |
| Eye contact: | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention. |
| Ingestion: | DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If symptoms develop and persist, get medical attention. |
| Symptoms: | See Section 11. |

5. FIRE FIGHTING MEASURES

| | |
|---|--|
| Extinguishing media: | Water spray (fog), foam, dry chemical or carbon dioxide. |
| Special firefighting procedures: | Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear. In case of fire, keep containers cool with water spray. |
| Unusual fire or explosion hazards: | Closed containers may rupture (due to build up of pressure) when exposed to extreme heat. |
| Hazardous combustion products: | Oxides of carbon. Oxides of nitrogen. Oxides of aluminum. Hydrocarbons. Aluminum reacts exothermically with water, acids, and alkalis to produce hydrogen. |

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

| | |
|-----------------------------------|---|
| Environmental precautions: | Do not allow product to enter sewer or waterways. |
| Clean-up methods: | Wear suitable protective clothing, gloves and eye/face protection. If product is spilled in the solid state, pick up and place in an appropriate waste disposal container. If product is spilled in the molten state, allow product to solidify before scraping up and disposing of in an appropriate waste disposal container. |

7. HANDLING AND STORAGE

- Handling:** Use only with adequate ventilation. Avoid contact with eyes, skin and clothing. Do not taste or swallow. Do not breathe gas/fumes/vapor/spray. Keep container closed. Wash thoroughly after handling.
- Storage:** Keep in a cool, well ventilated area away from heat, sparks and open flame. Keep container tightly closed until ready for use.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

| Hazardous Component(s) | ACGIH TLV | OSHA PEL | AIHA WEEL | OTHER |
|---|-------------------------------------|--|-----------|-------|
| Spherical aluminum powder | 1 mg/m3 TWA Respirable fraction. | 15 mg/m3 PEL (as Al) Total dust. 5 mg/m3 PEL (as Al) Respirable dust. | None | None |
| Hydrocarbon co-oligomer | None | None | None | None |
| Hydrocarbon waxes, petroleum, clay-treated microc | None | None | None | None |

- Engineering controls:** Local exhaust ventilation is recommended when general ventilation is not sufficient to control airborne contamination below occupational exposure limits.
- Respiratory protection:** Use NIOSH approved respirator if there is potential to exceed exposure limit(s).
- Eye/face protection:** Safety goggles or safety glasses with side shields.
- Skin protection:** Use impermeable gloves and protective clothing as necessary to prevent skin contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical state:** Solid
- Color:** Metallic, Gray
- Odor:** None
- Odor threshold:** Not available.
- pH:** Not available.
- Vapor pressure:** Not available.
- Boiling point/range:** Not available.
- Melting point/ range:** 51 °C (123.8 °F) (coating compound)
482 °C (899.6 °F) (aluminum substrate)
- Melting point/ range:** 482 °C (899.6 °F) (aluminum substrate)
- Specific gravity:** 2.04
- Vapor density:** Not available.
- Flash point:** > 200 °C (> 392°F) Cleveland closed cup
- Flammable/Explosive limits - lower:** Not available.
- Flammable/Explosive limits - upper:** Not available.
- Autoignition temperature:** Not available.
- Evaporation rate:** Not available.
- Solubility in water:** Insoluble
- Partition coefficient (n-octanol/water):** Not available.
- VOC content:** 0 %; 0 g/l (calculated)
- Viscosity:** Not available.
- Decomposition temperature:** Not available.

10. STABILITY AND REACTIVITY

| | |
|--|---|
| Stability: | Stable under normal conditions of storage and use. |
| Hazardous reactions: | Will not occur. |
| Hazardous decomposition products: | Oxides of carbon. Oxides of nitrogen. Hydrocarbons. Metal oxide fumes. |
| Incompatible materials: | Strong oxidizing agents. Fluorine. Chlorine fluoride. Acids. Alkalis. Halogenated compounds. Water. |
| Reactivity: | Not available. |
| Conditions to avoid: | Exposure to moisture. Heat, flames, sparks and other sources of ignition. Store away from incompatible materials. |

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects/Symptoms

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|----------------------|---|
| Inhalation: | Harmful: danger of serious damage to health by prolonged exposure through inhalation. Inhalation of high vapor concentrations may produce respiratory irritation, and may cause central nervous system (CNS) depression. Dizziness. Headache. |
| Skin contact: | Causes skin irritation. |
| Eye contact: | Causes serious eye irritation. |
| Ingestion: | Not expected to be harmful by ingestion. |

| Hazardous Component(s) | LD50s and LC50s | Immediate and Delayed Health Effects |
|---|-----------------|--|
| Spherical aluminum powder | None | Central nervous system, Irritant, Lung |
| Hydrocarbon co-oligomer | None | No Target Organs |
| Hydrocarbon waxes, petroleum, clay-treated microc | None | No Records |

| Hazardous Component(s) | NTP Carcinogen | IARC Carcinogen | OSHA Carcinogen (Specifically Regulated) |
|---|----------------|-----------------|--|
| Spherical aluminum powder | No | No | No |
| Hydrocarbon co-oligomer | No | No | No |
| Hydrocarbon waxes, petroleum, clay-treated microc | No | No | No |

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.
Hazardous waste number: Not a RCRA hazardous waste.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

Water Transportation (IMO/IMDG)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12 (b) Export Notification: None above reporting de minimis
CERCLA/SARA Section 302 EHS: None above reporting de minimis
CERCLA/SARA Section 311/312: Immediate Health, Delayed Health
CERCLA/SARA Section 313: This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Spherical aluminum powder (CAS# 7429-90-5).
California Proposition 65: No California Proposition 65 listed chemicals are known to be present.
Export Restrictions: This product is controlled for export by the United States Department of Commerce. The Export Classification Control Number (ECCN) is 1C992.I.

Canada Regulatory Information

CEPA DSL/NDSL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: New Safety Data Sheet format.

Prepared by: Michele Oltra, Regulatory Affairs Specialist
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