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**1. PRODUCT AND COMPANY IDENTIFICATION**

**Product name:** LOCTITE TCF 2000AF known as LOCTITE 2000 AF-0.003-11.512  
**Product type:** Phase Change Thermal Interface Material (PCTIM)  
**Restriction of Use:** None identified  
**Company address:** Henkel Corporation  
 One Henkel Way  
 Rocky Hill, Connecticut 06067

**IDH number:** 2198263

**Region:** United States

**Contact information:**  
 Telephone: +1 (860) 571-5100  
 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**

**WARNING:** CAUSES SKIN IRRITATION.  
 CAUSES SERIOUS EYE IRRITATION.  
 MAY CAUSE DROWSINESS OR DIZZINESS.

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

**PICTOGRAM(S)**



**Precautionary Statements**

**Prevention:** 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.

**Response:** IF ON SKIN: Wash with plenty of 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. Call a poison control center or physician if you feel unwell. 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*
Aluminum	7429-90-5	60 - 100
Paraffin w axes and Hydrocarbon waxes	8002-74-2	10 - 30
Graphite	7782-42-5	1 - 5

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

### 4. FIRST AID MEASURES

<b>Inhalation:</b>	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. If symptoms develop and persist, get medical attention.
<b>Skin contact:</b>	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.
<b>Eye contact:</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
<b>Ingestion:</b>	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.
<b>Symptoms:</b>	See Section 11.

### 5. FIRE FIGHTING MEASURES

<b>Extinguishing media:</b>	Water spray (fog), foam, dry chemical or carbon dioxide.
<b>Special firefighting procedures:</b>	Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.
<b>Unusual fire or explosion hazards:</b>	None
<b>Hazardous combustion products:</b>	Oxides of carbon. Metal oxide fumes.

### 6. ACCIDENTAL RELEASE MEASURES

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

<b>Environmental precautions:</b>	Do not allow product to enter sewer or waterways.
<b>Clean-up methods:</b>	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 inhale vapors and fumes. Keep container closed. Wash thoroughly after handling.

**Storage:** For safe storage, store between 5 °C (41°F) and 35 °C (95°F). 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
Aluminum	1 mg/m <sup>3</sup> TWA Respirable fraction.	5 mg/m <sup>3</sup> PEL (as Al) Respirable dust. 15 mg/m <sup>3</sup> PEL (as Al) Total dust.	None	None
Paraffin waxes and Hydrocarbon waxes	2 mg/m <sup>3</sup> TWA Fume.	None	None	None
Graphite	2 mg/m <sup>3</sup> TWA Respirable fraction.	5 mg/m <sup>3</sup> PEL Respirable fraction. 15 mg/m <sup>3</sup> PEL Total dust. 15 MPPCF TWA	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

<b>Physical state:</b>	Solid (coated aluminum foil substrate)
<b>Color:</b>	Black
<b>Odor:</b>	None
<b>Odor threshold:</b>	Not available.
<b>pH:</b>	Not available.
<b>Vapor pressure:</b>	Not available.
<b>Boiling point/range:</b>	Not available.
<b>Melting point/ range:</b>	51 °C (123.8 °F) (coating compound)
<b>Melting point/ range:</b>	482 °C (899.6 °F) (aluminum substrate)
<b>Specific gravity:</b>	2.7 (coating compound)
<b>Vapor density:</b>	Not available.
<b>Flash point:</b>	221 °C (429.8 °F) Cleveland open cup; (coating compound)
<b>Flammable/Explosive limits - lower:</b>	Not available.
<b>Flammable/Explosive limits - upper:</b>	Not available.
<b>Autoignition temperature:</b>	Not available.
<b>Evaporation rate:</b>	Not available.
<b>Solubility in water:</b>	Insoluble
<b>Partition coefficient (n-octanol/water):</b>	Not available.
<b>VOC content:</b>	0 %
<b>Viscosity:</b>	Not available.
<b>Decomposition temperature:</b>	Not available.

## 10. STABILITY AND REACTIVITY

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

## 11. TOXICOLOGICAL INFORMATION

**Relevant routes of exposure:** Skin, Inhalation, Eyes

**Potential Health Effects/Symptoms**

<b>Inhalation:</b>	May cause respiratory tract irritation. May cause central nervous system effects. Drowsiness. Dizziness. Headache.
<b>Skin contact:</b>	Causes skin irritation.
<b>Eye contact:</b>	Causes serious eye irritation.
<b>Ingestion:</b>	Not expected to be harmful by ingestion.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Aluminum	None	Central nervous system, Irritant, Lung
Paraffin w axes and Hydrocarbon waxes	None	Irritant
Graphite	None	Lung

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Aluminum	No	No	No
Paraffin w axes and Hydrocarbon waxes	No	No	No
Graphite	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). Aluminum (CAS# 7429-90-5).  
**California Proposition 65:** No California Proposition 65 listed chemicals are known to be present.

#### Canada Regulatory Information

**CEPA DSL/NDL 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: 3-5, 8, 10, 11, 15

**Prepared by:** Debbie Friday, Regulatory Affairs Specialist  
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