

MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

1. PRODUCT IDENTIFICATION

CHEMICAL NAME; CLASS: TEMPILSTIK 1500 F (816C)

| | |
|--------------------------------------|--|
| PRODUCT USE: | Document Number: 90385 Temperature Indicating Product |
| SUPPLIER/MANUFACTURER'S NAME: | TEMPIL INC. |
| ADDRESS: | 2901 HAMILTON BLVD. SOUTH PLAINFIELD, NJ 07080 |
| EMERGENCY PHONE: | CHEMTREC: 1-800-424-9300 |
| BUSINESS PHONE: | 1-908-757-8300 |

2. COMPOSITION and INFORMATION ON INGREDIENTS

| CHEMICAL NAME Hazardous | CAS # | % w/w | EXPOSURE LIMITS IN AIR | | | | | |
|---|-----------|---------|------------------------|-------------|------------|-------------|-------------|-------|
| | | | ACGIH | | OSHA | | | OTHER |
| | | | TLV ppm | STEL ppm | PEL ppm | STEL ppm | IDLH ppm | |
| Sodium Sulfate | 7757-82-6 | 60-65 | NE | NE | NE | NE | NE | NE |
| Barium Sulfate | 7727-43-7 | 1-5 | 10 mg/m3 | NE | 10 mg/m3 | NE | NE | NE |
| Other low hazard constituents. The other low hazard constituents are each present in less than 1 percent concentration. | | Balance | NE | NE | NE | NE | NE | NE |

NE = Not Established

C = Ceiling Limit

See Section 16 for Definitions of Terms Used.

NOTE: all WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-1993 format.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: This product is a solid color Blue stik with no odor. There is no immediate health hazard associated with this product. Though this product is not flammable, if involved in a fire and exposed to extremely high temperatures, irritating vapors of toxic gases will be generated. This product is not reactive under normal circumstances of use.

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE: The most significant route of over-exposure for this product is by contact of this product with the skin. Inhalation or eye contact with dried out particulates of this product is also a possible route of exposure.

INHALATION: Inhalation is not anticipated to be a significant route of over-exposure to this product. In the event that inhalation of dried out particulates of this product occurs, the main health effect will be irritation of the nose, resulting in sneezing and nasal congestion.

CONTACT WITH THE SKIN AND EYES: Contact of this product may be irritating to the skin. Due to the presence of Sodium sulfate, the main component of this product, repeated or prolonged exposures to this product may cause allergic skin reaction. Symptoms may include reddening and inflammation of the skin. Contact with dried-out particulates of this product may be slightly irritating to eyes. Irritation will be alleviated when the affected area is flushed with water.

SKIN ABSORPTION: Skin absorption is not a significant route of over-exposure for any component of this product.

INGESTION: Though not a likely route of occupational exposure, ingestion of this product, especially in large quantities, may cause nausea, vomiting and gastric distress.

INJECTION: Though not a likely route of occupational exposure for this product, injection (via punctures of lacerations in the skin) may cause local reddening, tissue swelling and discomfort.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Symptoms associated with over-exposure to this product are as follows:

ACUTE: The most significant hazard associated with this product would be the potential for slight irritation of contaminated skin and eyes. Inhalation of dried-out particulates may also cause irritation of the nose.

CHRONIC: The main component of this product, may cause allergic skin reaction after repeated or prolonged exposures.

TARGET ORGANS: Skin.

| HAZARDOUS MATERIAL INFORMATION SYSTEM | | | |
|---------------------------------------|-------------|-------|------|
| HEALTH | (BLUE) | 2 | |
| FLAMMABILITY | (RED) | 1 | |
| REACTIVITY | (YELLOW) | 0 | |
| PROTECTIVE EQUIPMENT | | | B |
| EYES | RESPIRATORY | HANDS | BODY |
| See Section 8 | | | |
| For routine industrial applications | | | |

4. FIRST-AID MEASURES

SKIN EXPOSURE: If this product contaminates the skin, begin flushing with soap and water. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Contaminated individual must seek medical attention if redness or irritation continues after area has been rinsed.

EYE EXPOSURE: If this product enters the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes.

4. FIRST-AID MEASURES (Continued)

INHALATION: If particulates of dried-out material of this product are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Remove or cover gross contamination to avoid exposure to rescuers.

INGESTION: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION.

Contaminated individual must be taken for medical attention if adverse effects occur. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to physician or other health professional with contaminated individual.

5. FIRE-FIGHTING MEASURES

FLASH POINT, (method): Not flammable.

AUTOIGNITION TEMPERATURE: Not flammable.

FLAMMABLE LIMITS (in air by volume, %):

Lower (LEL): Not applicable.

Upper (UEL): Not applicable.

FIRE EXTINGUISHING MATERIALS:

Water Spray: YES

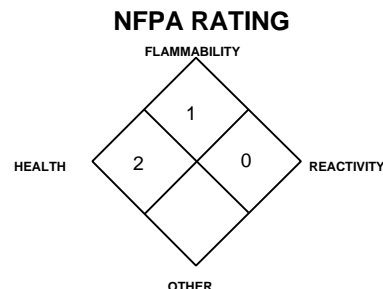
Foam: YES

Halon: YES

Carbon Dioxide: YES

Dry Chemical: YES

Other: Any "ABC" Class.



UNUSUAL FIRE AND EXPLOSION HAZARDS: This material must be substantially pre-heated before ignition occurs. When involved in a fire, this material may decompose and produce toxic gases.

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL FIRE-FIGHTING PROCEDURES: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. If possible, prevent run-off water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a spill, clear the affected area, protect people, and respond with trained personnel.

Minimum Personal Protective Equipment should be gloves and goggles, as well as appropriate body protection. **Level B: which includes the use of Self-Contained Breathing Apparatus, should be worn when oxygen levels are below 19.5% or are unknown.**

Pick-up material carefully and rinse area with soap and water. Place all spill residue in a suitable container and seal. Dispose of in accordance with Federal, State and local hazardous waste disposal regulations (see Section 13, Disposal Considerations).

7. HANDLING and USE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Do not eat or drink while handling chemicals.

STORAGE AND HANDLING PRACTICES: All employees who handle this material should be trained to handle it safely. Avoid breathing particulates of this product generated by dried-out material. Packages of this product must be properly labeled. Store packages in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Store away from incompatible materials (see Section 10, Stability and Reactivity). Inspect all incoming packages before storage, to ensure they are properly labeled and not damaged.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Decontaminate equipment using soapy water before maintenance begins. Collect all rinsates and dispose of according to applicable Federal, State, or local procedures.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Prudent practice is to ensure eyewash/safety shower stations are available near where this product is used.

RESPIRATORY PROTECTION: None needed under normal circumstances of use. Use supplied air respiratory protection if oxygen levels are below 19.5% or during emergency response to a release of this product. If respiratory protection is required, follow the requirements of the Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), or equivalent State standards.

EYE PROTECTION: Safety glasses.

HAND PROTECTION: Wear neoprene gloves for routine industrial use.

BODY PROTECTION: None needed under normal circumstances of use. Use body protection appropriate for task.

9. PHYSICAL and CHEMICAL PROPERTIES

RELATIVE VAPOR DENSITY (air = 1): Not applicable. **EVAPORATION RATE (nBuAc = 1):** Not applicable.
SPECIFIC GRAVITY (water = 1): Not available. **FREEZING/MELTING POINT:** Not available.
SOLUBILITY IN WATER: Slightly soluble. **BOILING POINT:** Not applicable
VAPOR PRESSURE: Not applicable. **ODOR THRESHOLD:** Not applicable
pH: Not applicable.
COEFFICIENT WATER/OIL DISTRIBUTION: Not applicable.

APPEARANCE AND COLOR: Solid (color Blue) stick with no odor.

HOW TO DETECT THIS SUBSTANCE (warning properties): The appearance is a distinct property of this product.

10. STABILITY and REACTIVITY

STABILITY: Stable.

DECOMPOSITION PRODUCTS: Carbon dioxide, carbon monoxide.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product is not compatible with strong oxidizers and strong alkalis.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Avoid uncontrolled exposure to extreme temperatures and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following toxicological data are available for the components of this product:

Sodium Sulfate

None identified

Barium Sulfate

Micronucleous Test-Mouse-Intraperitoneal: 12,500 Micro g/Kg

Intraperitoneal-Rat TDL₀: 200 mg/Kg: Equivocal tumorigenic agent

SUSPECTED CANCER AGENT: The components of this product are not found on the following lists: FEDERAL OSHA Z LIST, NTP, IARC, CAL/OSHA, and therefore are not considered to be, nor suspected to be cancer-causing agents by these agencies.

IRRITANCY OF PRODUCT: This product may be irritating to the eyes, skin, and other contaminated tissue.

SENSITIZATION TO THE PRODUCT: The main component of this product, may cause sensitization upon repeated or prolonged exposures.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this product and its components on the human reproductive system.

Mutagenicity: This product is not reported to produce mutagenic effects in humans.

Embryotoxicity: This product is not reported to produce embryotoxic effects in humans.

Teratogenicity: This product is not reported to cause teratogenic effects in humans.

Reproductive Toxicity: This product is not reported to cause reproductive effects in humans. There is some evidence that soluble tungsten compounds, such as lithium tungstate, can cause adverse reproductive effects in test animals exposed to relatively high doses.

A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generation lines. An embryotoxin is a chemical which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Acute or over-exposure to Sodium sulfate and Barium Sulfate may aggravate skin conditions. Acute over-exposure via inhalation may increase mucus flow in the nose and respiratory system airways. This condition disappears after exposure stops. Chronic overexposure via inhalation may aggravate pre-existing lung condition.

BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, Biological Exposure Indices (BEIs) are not applicable for any component of this product.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and reduce or eliminate exposure.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION

ENVIRONMENTAL STABILITY: Currently, there are no adverse environmental effects which have been reported for this product.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: No adverse effect is anticipated to occur to plant-life. Refer to Section 11 (Toxicological Information) for additionally toxicological data pertinent to animals exposed to the components of this product.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No evidence is currently available on this product's effects on aquatic life.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product if unaltered by use may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

EPA WASTE NUMBER: Not applicable to wastes consisting only of this product.

14. TRANSPORTATION INFORMATION

THIS MATERIAL IS NOT HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Not applicable.
HAZARD CLASS NUMBER and DESCRIPTION: Not applicable.
UN IDENTIFICATION NUMBER: Not applicable.
PACKING GROUP: Not applicable.
DOT LABEL(S) REQUIRED: Not applicable.

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (1996): Not applicable.

MARINE POLLUTANT: The components of this product are not classified by the DOT as Marine Pollutants (as defined by 49 CFR 172.101, Appendix B).

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: THIS MATERIAL IS NOT CONSIDERED AS DANGEROUS GOODS.

15. REGULATORY INFORMATION

SARA REPORTING REQUIREMENTS: This product is subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act., as follows:

| COMPONENT | SARA 302 | SARA 304 | SARA 313 |
|----------------|----------|----------|----------|
| Sodium Sulfate | No | NO | YES |
| Barium Sulfate | NO | NO | YES |

SARA THRESHOLD PLANNING QUANTITY: Not applicable.

TSCA INVENTORY STATUS: The components of this product are listed on the TSCA Inventory.

CERCLA REPORTABLE QUANTITY (RQ): Not applicable.

OTHER U.S. FEDERAL REGULATIONS: Not applicable.

STATE REGULATORY INFORMATION: The components of this product are covered under specific State regulations, as denoted below:

Alaska-Designated Toxic and Hazardous Substances: No.
California-Permissible Exposure Limits for Chemical Contaminants: No.
Florida-Substance List: No.
Illinois-Toxic Substance List: No.
Kansas-Section 302/313 List: No

Massachusetts-Substance List: No.
Minnesota-List of Hazardous Substances: No.
Missouri-Employer Information/Toxic Substance List: No.
New Jersey-Right to Know Hazardous Substance List: No
North Dakota-List of Hazardous Chemicals, Reportable Quantities: No.

Pennsylvania-Hazardous Substance List: No.
Rhode Island-Hazardous Substance List: No.
Texas-Hazardous Substance List: No.
West Virginia - Hazardous Substance List: No.
Wisconsin-Toxic and Hazardous Substances: No.

CALIFORNIA PROPOSITION 65: The components of this product are not on the California Proposition 65 lists.

16. OTHER INFORMATION

LABELING (Precautionary Statements):

WARNING! MAY CAUSE ALLERGIC SKIN REACTION. MAY BE HARMFUL IF INGESTED. CONTACT WITH SKIN MAY CAUSE IRRITATION. Do not taste or swallow. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Wear gloves and safety goggles when using this product. FIRST-AID: In case of contact, immediately flush skin or eyes with large amounts of water. If inhaled, move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. IN CASE OF FIRE: Use fog, foam, dry chemical or CO₂. IN CASE OF SPILL: Pick-up material and rinse area with soap and water. Refer to MSDS for additional information.

PREPARED BY:

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This Material Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of Tempil's knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this product is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.