

Material Safety Data Sheet: SHIELD Epoxy

Section 1. Identification of the chemical product and of the company

1.1 Product identifier

- Trade name: SHIELD-Epoxy
- Catalog number: SH-Ex

1.2 Relevant identified uses of the substance or mixture and uses advised against

- Application of the substance/mixture: Laboratory chemicals. Biological tissue preservative.
- Restrictions on use: None identified.

1.3 Details of the supplier of the safety data sheet

- Manufacturer/Supplier: LifeCanvas Technologies
- Address: 1035 Cambridge Street, Suite 16C, Cambridge MA, 02141
- Technical services, customer support: support@lifecanvastech.com

1.4 Emergency telephone number

- 617-945-9793
- Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION or ACCIDENT.

Section 2. Hazard(s) identification

Information in accordance with U.S. 29 CFR 1910.1200 (Hazcom 2012) and Canada Hazardous Products Regulations (WHMIS 2015):

- Classification of the substance or mixture: Skin irritation, category 2

Label elements:

- Hazard pictogram(s):



- Signal word: Warning
- Hazard statements: H315 Causes skin irritation.

- Precautionary statements:
 - P264 Wash hands thoroughly after handling.
 - P280 Wear protective gloves, protective clothing and eye protection.
 - P302+P353 IF ON SKIN: Rinse skin with water or shower.
 - P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 - P362+P364 Take off contaminated clothing and wash it before reuse.
- Supplemental information: The physical, chemical and toxicological properties of this substance may have not been fully determined.
Precautionary statements are listed according to the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS) – Annex III. Regulations in individual countries/regions may determine which statements are required on the product label. See product label for specifics.

Hazards not otherwise classified:

- Physical hazards not otherwise classified: No Additional Information.
- Health hazards not otherwise classified: No Additional Information.

Section 3. Composition/information on ingredients

Chemical characterization: Mixtures

- Description: Mixture of the substances listed below with non-hazardous additions.
- Listing of dangerous and non-hazardous components: 1,2,3-propanetriol, homopolymer, 2-oxiranylmethyl ether (118549-88-5).

Section 4. First aid measures

Description of first aid measures

- General information: If irritation or other symptoms occur or persist from any route of exposure, remove the affected individual from the area: see a physician/get medical attention.
- After inhalation: If affected, remove to fresh air. Call a POISON CENTER or doctor/physician if you feel unwell.
- After skin contact: Immediately remove contaminated clothing and shoes. Wash the affected area with plenty of water or shower. Launder clothing before reuse.
- If skin irritation occurs: Get medical advice/attention.
- After eye contact: Immediately flush eyes with plenty of clean water for an extended time. Flush longer if there is any indication of residual chemical in the eye. Ensure adequate flushing of the eyes by separating the eyelids with fingers and roll eyes in a circular motion.
- If eye irritation persists: Get medical advice/attention.
- After swallowing: Do not induce vomiting. Rinse out the mouth with water. Get medical attention immediately.
- Information for doctor: Wear proper personal protective clothing and equipment.

- Most important symptoms and effects, both acute and delayed: Irritation. Pre-existing skin problems may be aggravated by prolonged or repeated contact. See section 11 for more information.
- Indication of any immediate medical attention and special treatment needed: Treat symptomatically.

Section 5. Fire fighting measures

NFPA flammability class: III B

Extinguishing media:

- Suitable extinguishing agents: NFPA Class III B (Combustible liquid): Use water spray, ABC dry chemical, foam or carbon dioxide. Water or foam may cause frothing. Use water to keep fire-exposed containers cool. Water may be used to flush spills away from exposures.
- Unsuitable extinguishing agents: None known.

Special hazards arising from the substance or mixture:

- Unusual fire/explosion hazards: Product is not considered a fire hazard, but will burn if ignited. Closed container may rupture (due to build up in pressure) when exposed to extreme heat.
- Hazardous combustion products: Irritating or toxic substances may be emitted upon burning, combustion or decomposition. See section 10 for additional information.

Special protective equipment and precautions for fire-fighters: Wear self-contained breathing apparatus (SCBA) equipped with a full facepiece and operated in a pressure-demand mode (or other positive pressure mode) and approved protective clothing. Personnel without suitable respiratory protection must leave the area to prevent significant exposure to hazardous gases from combustion, burning or decomposition. In an enclosed or poorly ventilated area, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting operations. See section 9 for additional information.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: See Section 8 for recommendations on the use of personal protective equipment. If spilled in an enclosed area, ventilate. Eliminate ignition sources. Personal protective equipment must be worn.

- Environmental precautions: Do not flush liquid into public sewer, water systems or surface waters.

- Methods and material for containment and cleaning up: Contain by diking with sand, earth or other non-combustible material. Wear proper personal protective clothing and equipment. Absorb spill with an inert material. Place into labeled, closed container; store in safe location to await disposal. Change contaminated clothing and launder before reuse.

Section 7. Handling and storage

Handling:

- Precautions for safe handling: As with any chemical product, use good laboratory/workplace procedures. Do not cut, puncture, or weld on or near the container. Wash thoroughly after handling this product. Always wash up before eating, smoking or using the facilities. Use under well-ventilated conditions. Avoid eye and skin contact. Avoid inhalation of aerosol, mist, spray, fume or vapor. Avoid drinking, tasting, swallowing or ingesting this product. Wash contaminated clothing before reuse. Discard shoes contaminated with this product. Provide eyewash fountains and safety showers in the work area.
- Conditions for safe storage, including any incompatibilities: Store cool and dry, under well-ventilated conditions at 4°C. Keep away from heat, sparks and open flames. Store this material away from incompatible substances (see section 10). Do not store in open, unlabeled or mislabeled containers. Keep container closed when not in use. Do not reuse empty container without commercial cleaning or reconditioning. Empty container contains residual product which may exhibit hazards of product.

Section 8. Exposure controls/personal protection

Control parameters:

- Occupational Exposure limits (OEL): Occupational exposure limits are not established (no exposure limits established for SHIELD Epoxy).

Exposure controls:

- Individual protection measures, such as personal protective equipment (PPE):
 - Eye/face protection: Safety glasses or goggles required.
 - Skin and body protection: Wear chemical resistant (impervious) gloves. Wear chemical resistant protective clothing. Use good laboratory/workplace procedures including personal protective clothing: labcoat, safety glasses and protective gloves.

- Respiratory protection: Respiratory protection is not needed with proper ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Wear an approved respirator (e.g., an organic vapor respirator, a full face air purifying respirator for organic vapors, or a self-contained breathing apparatus) whenever exposure to aerosol, mist, spray, fume or vapor exceed the applicable exposure limit(s) of any chemical substance listed in the SDS. Use respirator in accordance with manufacturer's use limitations and OSHA standard 1910.134 (29CFR).
- Further information: Eyewash fountains and safety showers are recommended in the work area.
- Appropriate engineering controls: Always provide effective general and, when necessary, local exhaust ventilation to draw spray, aerosol, fume, mist and vapor away from workers to prevent routine inhalation. Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the SDS. (Ventilation guidelines/techniques may be found in publications such as Industrial Ventilation: American Conference of Governmental Industrial Hygienists, 1330 Kemper Meadow Drive, Cincinnati, OH, 45240-1634, USA). The usual precautionary measures for handling chemicals should be followed.

Section 9. Physical and chemical properties

Information on basic physical and chemical properties

- Form: Liquid
- Appearance: Colorless to light yellow
- Odor: Mild epoxy
- Odor threshold: Not available
- Solubility in water: Negligible
- Evaporation rate: Not available
- Vapor pressure: Not available
- Vapor density: Not available
- Viscosity: 1200-1400 cps @ 25°C
- Melting point/Freezing point: Not available
- Oxidizing properties: Not oxidizing
- Explosive properties: Not explosive
- Decomposition temperature: Not available
- pH: 7
- Specific Gravity (density): 1.24 g/mL (25°C)
- Partition coefficient (n-octanol/water): Not available
- % Volatile by weight: Not available
- VOC: Not available
- Boiling point °C: Not available
- Boiling point °F: Not available

- Flash point: 218 °C (Cleveland Open Cup)
- Auto-ignition temperature: Not available
- Flammability (solid, gas): Not applicable (liquid)
- Flammability or explosive limits: LFL/LEL Not available, UFL/UEL Not available

Section 10. Stability and reactivity

Reactivity: Exothermic reactions including polymerization may occur in contact with amines.

Chemical stability: This product is stable under recommended storage and handling conditions.

Possibility of hazardous reactions: Hazardous polymerization will not occur.

Conditions to avoid: Excessive heat and ignition sources, contact with strong acids, strong alkalis, oxidizers.

Incompatible materials: Avoid strong acids, bases, and oxidizing agents. Avoid contact with reducing agents.

Hazardous decomposition products: Thermal decomposition may produce smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustions.

Section 11. Toxicological information

Information on likely routes of exposure:

- General: Caution must be exercised through the prudent use of protective equipment and handling procedures to minimize exposure.
- Eyes: Causes serious eye irritation.
- Skin: May cause allergic skin reaction. Causes skin irritation.
- Inhalation: High airborne concentrations of vapors resulting from heating, misting or spraying may cause irritation of the respiratory tract and mucous membranes.
- Ingestion: Ingestion may cause irritation.
- Symptoms/effects, acute and delayed: Irritation.

Acute toxicity information: Oral LD50 rat 2700 mg/kg.

Skin corrosion/irritation: Causes skin irritation (Category 2).

Germ Cell Mutagenicity: Positive (Ames test), Negative (Micronucleus test/mouse bone-marrow cell).

Carcinogenicity: Not classified.

Reproductive toxicity: Not classified.

Specific target organ toxicity (STOT) - single exposure: Not classified.

Specific target organ toxicity (STOT) - repeated exposure: Not classified.

Aspiration hazard: Not classified (based on available data, the classification criteria are not met).

Other toxicity information: No additional information available.

Section 12. Ecological information

Ecotoxicity: No ecological testing has been conducted on this product.

Persistence and degradability: No specific information available.

Bioaccumulative potential: No specific information available.

Mobility in soil: No specific information available.

Other adverse effects: No additional information available.

Section 13. Disposal considerations

Dispose of container in accordance with national and local regulations. If possible, clean up and recycle. Ensure the use of properly authorized waste management companies, where appropriate.

Incinerate in small portions with an incinerator or entrust to an authorized waste management company.

See Section 8 for recommendations on the use of personal protective equipment.

Section 14. Transport information

The information below is provided to assist in documentation. It may supplement the information on the package. The packing in your possession may carry a different version of the label depending on the date of manufacture. Depending on inner packaging quantities and packaging instructions, it may be subject to specific regulatory exceptions.

UN number: N/A

UN proper shipping name: Not regulated – See bill of lading for details

Transport hazard classes:

- U.S. DOT hazard class: N/A
- Canada TRG hazard class: N/A
- Europe ADR/RID hazard class: N/A
- IMDG Code (ocean) hazard class: N/A
- ICAO/IATA (air) hazard class: N/A
- A N/A listing for the hazard class indicates the product is not regulated for transport by that regulation.

Packing group: N/A

Environmental hazards:

- Marine pollutant: Not applicable.
- Hazardous substances (USA): Not applicable.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBS code: Not applicable.

Special precautions for user: Not applicable.

Section 15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture:

- **U.S. federal and state regulations/legislation:** This SDS has been prepared in accordance with the hazard criteria of the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
- **U.S. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Reportable Quantity (RQ):** Not applicable.
- **U.S. Superfund Amendments and Reauthorization Act (SARA) – SARA Section 313:** This product contains no known toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and 40 CFR 372.
- **U.S. TSCA Section 12(b) Export Notification:** The ingredients in this product is approved by EPA under a Low Volume Exemption (LVE).
- **California Proposition 65:**
 - Warning: The following ingredients present in the product are known to the state of California to cause Cancer: None known to be present or none in reportable amounts for occupational exposure as per OSHA's approval of the California Hazard Communication Standard, Federal Register, page 31159 ff, 6 June 1997.
 - Warning: The following ingredients present in the product are known to the state of California to cause birth defects, or other reproductive hazards: None known to be present or none in reportable amounts for occupational exposure as per OSHA's approval of the California Hazard Communication Standard, Federal Register, page 31159 ff, 6 June 1997.
- **Canada regulations/legislation:** This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations and the SDS contains all the information required by the Hazardous Products Regulations. Notes: Canadian DSL: One or more components of this products are not on the Canadian Domestic Substances List (DSL) or the Non-Domestic Substances List (NDSL).
- **Mexico regulations/legislation:** This SDS contains all the information required by NOM-018-STPS-2000 Workplace Hazardous Chemical Substances Communication and Identification Standard. Notes: No additional information.

Chemical inventories

- Australian Inventory of Chemical Substances (AICS): No
- Canadian Domestic Substances List (DSL): No
- Canadian Non-Domestic Substances List (NDSL): No
- European EC Inventory (EINECS ELINCS, NLP): Yes
- Japan Existing and New Chemical Substances (ENCS): Yes
- Japan Industrial Safety and Health Law (ISHL): Yes
- Korean Existing and Evaluated Chemical Substances (KECL): Yes



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- New Zealand Inventory of Chemicals (NZIoC): No
- Philippines Inventory of Chemicals and Chemical Substances (PICCS): No
- Taiwan Inventory of Existing Chemicals: Yes
- U.S. Toxic Substances Control Act (TSCA): Pending

Section 16. Other information

References: Not available.

Other Special Considerations: Not available.

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