

Tgard™ TNC-4

Version 2.0

Issue Date : 04/17/2024 Ref. 130000158266
Revision Date : 04/16/2024

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Tgard™ TNC-4
Product Use : For industrial use only.
Restrictions on use : Do not use product for anything outside of the above specified uses.
Manufacturer/Supplier : Laird Technologies
4707 Detroit Ave Cleveland, OH 44102 USA
Product Information : +1-216-939-2300
Transport Emergency : +1-800-424-9300 (outside the U.S. & Canada +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

Product hazard category
Skin sensitisation Category 1

Label content

Pictogram :



Signal word : Warning

Hazardous warnings : May cause an allergic skin reaction.

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Hazardous prevention measures : Avoid breathing dust.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/ attention.
Wash contaminated clothing before reuse.
Dispose of contents/ container to an approved waste disposal plant.

Other hazards

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 60 - 70 %

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Poly(epichlorohydrin/formaldehyde/phenol)	9003-36-5	1 - 10 %
Bisphenol A-epichlorohydrin resin	25068-38-6	1 - 10 %

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). First Aid responders should pay attention to self-protection and use the recommended protective clothing. Remove from exposure, lie down.

Inhalation : Is not an expected route of exposure under normal conditions. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Keep person calm. If symptoms persist, call a physician. If unconscious, place in recovery position and get medical attention immediately. Keep respiratory tract clear.

Skin contact : Take off contaminated clothing and shoes immediately. Wash off with soap and water. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse. Thoroughly clean shoes before reuse.

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- Eye contact : If easy to do, remove contact lens, if worn. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.
- Ingestion : Rinse mouth. Call a physician immediately. Do NOT induce vomiting. Place unconscious person on the side in the recovery position and ensure open airways. Do not give anything by mouth to an unconscious person.
- Most important symptoms/effects, acute and delayed : May irritate skin.
May irritate eyes.
May cause irritation of the mucous membranes.
For further information see Section 11.
- Protection of first-aiders : No applicable data available.
Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Symptoms may be delayed for several hours.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Dry powder, Sand
- Unsuitable extinguishing media : Water, Carbon dioxide (CO₂), Foam
- Specific hazards : Material will burn. May release toxic and/or hazardous fumes and gases. Dust may form explosive mixture in air. Do not allow run-off from fire fighting to enter drains or water courses. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Keep away from flames and sparks. Avoid high temperature and static charges.
Hydrocarbons carbon dioxide, Carbon monoxide, Metal oxides, Halogenated compounds.
- Special protective equipment for firefighters : Wear full protective clothing and self-contained breathing apparatus.

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Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Remove undamaged containers from fire area if it is safe to do so. Evacuate area. Use water spray to cool unopened containers. Do not allow run-off from fire fighting to enter drains or water courses. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
In the event of fire and/or explosion do not breathe fumes. Evacuate personnel to safe areas.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel) : Keep unnecessary and unprotected personnel from entering. Wear suitable protective equipment. Refer to protective measures listed in sections 7 and 8. Control access to area. Avoid contact with the skin and the eyes. Evacuate personnel to safe areas. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Remove all sources of ignition. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. If the material is involved in a fire, or if dusts are produced, no action shall be taken involving any personal risk or without suitable training. Avoid breathing dust.

Environmental precautions : If the product contaminates rivers and lakes or drains inform respective authorities. Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water.

Spill Cleanup : Sweep up or vacuum up spillage and collect in suitable container for disposal. For disposal instructions see section 13. Large spills should be collected mechanically (remove by pumping) for disposal. Eliminate all ignition sources if safe to do so. Move it to a safe place. Do not touch spilled material. Avoid dust formation. Wet wipe or vacuum up using a high efficiency particulate air (HEPA) vacuum. Use explosion proof equipment. Do not dry sweep dust accumulation.

Accidental Release Measures : Dispose of in accordance with local regulations.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel) : For personal protection see section 8. Handle in accordance with good

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industrial hygiene and safety practice. Provide adequate ventilation. Use personal protective equipment as required. Wash hands thoroughly after handling. Take precautionary measures against static discharges. Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used. Avoid exposure - obtain special instructions before use. Avoid contact during pregnancy and while nursing. Do not handle until all safety precautions have been read and understood. Do not get in eyes, on skin, or on clothing. Do not ingest. Use only with adequate ventilation/personal protection. Do not breathe dust. Wash hands before breaks and immediately after handling the product. Wash hands before eating, drinking, or smoking. Regular cleaning of equipment, work area and clothing. Wash contaminated clothing before re-use. Remove contaminated clothing and protective equipment before entering eating areas. Avoid contact with the skin and the eyes.

Handling (Physical Aspects) : Keep away from heat and sources of ignition. No smoking.

Dust explosion class : No applicable data available.

Storage : Keep in cool, dry place in original containers. Store away from incompatible materials (see Section 10). Store locked up. Store in a well-ventilated area away from heat and sunlight. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep tightly closed. Store in accordance with the particular national regulations.
 Keep away from oxidizing agents, strongly acid or alkaline materials and amines.
 Store at room temperature.

Storage period : No applicable data available.

Storage temperature : No applicable data available.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : Use a local and/or general ventilation system. Local exhaust ventilation should be employed to minimize airborne contamination. Use only with adequate ventilation. Any process that has the potential to generate dust should be performed using engineering controls, such as isolation, enclosures, local exhaust ventilation, wetting with appropriate solvent, or dust collection systems, to control airborne fibers and dusts below applicable limits. Use explosion-proof electrical, ventilating and lighting equipment.

Personal protective equipment
 Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment. When

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workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Suitable respiratory equipment: Respirator with a full face mask

Recommended Filter type: particulate prefilter

Consult the OSHA respiratory protection information located at 29CFR 1910.134.

Hand protection : Material: Chemical-resistant gloves

Hand protection : Material: butyl-rubber

Hand protection : Material: Nitrile rubber

Hand protection : Additional protection: Protective gloves should be worn when the potential exists for prolonged or repeated skin contact.

Hand protection : Additional protection: Request information on glove permeation properties from the glove supplier.

Hand protection : Additional protection: Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

Eye protection : Wear safety glasses with side shields. Ensure that eyewash stations and safety showers are close to the workstation location. If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles.

Skin and body protection : Wear suitable protective clothing.
 Wear impervious, thermal barrier/insulated clothing such as gloves, apron, boots, or whole bodysuit to prevent ANY contact with liquid or vaporizing material.

Protective measures : Wear suitable protective equipment.

Exposure Guidelines
 Exposure Limit Values

Poly(epichlorohydrin/formaldehyde/phenol)

No applicable data available.

Bisphenol A-epichlorohydrin resin

No applicable data available.

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state : solid
Form : sheets
Color : black

Odor : odourless

Odor threshold : Not applicable

pH : Not applicable

Melting point/freezing point : Not applicable

Boiling point/boiling range : Not applicable

Flash point : Not applicable

Evaporation rate : Not applicable

Flammability (solid, gas) : No applicable data available.

Upper explosion limit : Not applicable

Lower explosion limit : Not applicable

Vapor pressure : negligible

Vapor density : negligible

Density : 1.86 g/cm³

Specific gravity (Relative density) : No applicable data available.

Bulk density : 1.86 kg/m³

Water solubility : negligible

Solubility(ies) : No applicable data available.

Partition coefficient: n- : Not applicable

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octanol/water

Auto-ignition temperature : Not applicable
Decomposition temperature : Not applicable
Viscosity, kinematic : Not applicable
Viscosity, dynamic : No applicable data available.
Volatile organic content (VOC) : < 18.6 g/l

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Stable at normal ambient temperature and pressure.
Chemical stability : Stable at normal ambient temperature and pressure.
Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use.
Conditions to avoid : Decomposes on heating. Avoid prolonged exposure at or above the recommended processing temperatures.
Incompatible materials : Strong oxidizing agents Strong acids, Strong bases, reactive metals
Hazardous decomposition products : Carbon oxides, Metal oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Poly(epichlorohydrin/formaldehyde/phenol)

Inhalation : no data available
Dermal LD50 : > 2,000 mg/kg , Rat
Oral LD50 : > 5,000 mg/kg , Rat
Skin irritation : Slight or no skin irritation, Rabbit
Minimal effects that do not meet the threshold for classification.
Eye irritation : No eye irritation, Rabbit
Skin sensitization : Probability or evidence of high skin sensitisation rate in humans,

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Mouse

- Repeated dose toxicity : Ingestion
Rat
- 90 d
NOAEL: 250 mg/kg Method: OECD Test Guideline 408
No toxicological effects warranting significant target organ toxicity classification were seen below the recommended guidance values for classification.
- Carcinogenicity : no data available
- Mutagenicity : Animal testing did not show any mutagenic effects.
Experiments showed mutagenic effects in cultured bacterial cells.
Tests on mammalian cell cultures showed mutagenic effects.
Information given is based on data obtained from similar substances.
- Reproductive toxicity : No toxicity to reproduction
Animal testing showed no reproductive toxicity.
Information given is based on data obtained from similar substances.
- Teratogenicity : Animal testing showed no developmental toxicity.
Information given is based on data obtained from similar substances.

Bisphenol A-epichlorohydrin resin

- Inhalation : An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration.
- Dermal LD50 : > 2,000 mg/kg , Rat
- Oral LD50 : > 2,000 mg/kg , Rat
- Skin irritation : Severe skin irritation, Rabbit
- Eye irritation : Irritation to eyes, reversing within 7 days, Rabbit
- Skin sensitization : May cause sensitisation by skin contact., Mouse
- Repeated dose toxicity : Ingestion
Rat
- 90 d
NOAEL: > 1,000 mg/kg Method: OECD Test Guideline 408
No toxicologically significant effects were found.

Skin contact

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Mouse

- 90 d

NOAEL: 100 mg/kg Method: OECD Test Guideline 411

No toxicologically significant effects were found.

- Carcinogenicity : Animal testing did not show any carcinogenic effects.
- Mutagenicity : Animal testing did not show any mutagenic effects.
Did not cause genetic damage in cultured bacterial cells.
Genetic damage in cultured mammalian cells was observed in some laboratory tests but not in others.
- Reproductive toxicity : No toxicity to reproduction
Animal testing showed no reproductive toxicity.
No effects on or via lactation
- Teratogenicity : Animal testing showed no developmental toxicity.

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

Material	IARC	NTP	OSHA
Quartz (non-inhalable)	1	X	

SECTION 12. ECOLOGICAL INFORMATION**Aquatic Toxicity**

Poly(epichlorohydrin/formaldehyde/phenol)

- 96 h LC50 : Leuciscus idus (Golden orfe) 5.7 mg/l OECD Test Guideline 203
- 72 h EC50 : Raphidocelis subcapitata (freshwater green alga) > 1.8 mg/l OECD Test Guideline 201
- 48 h EC50 : Daphnia magna (Water flea) 1.6 mg/l OECD Test Guideline 202
- 21 d : NOEC Daphnia magna (Water flea) 0.3 mg/l OECD Test Guideline 211
Information given is based on data obtained from similar substances.

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Bisphenol A-epichlorohydrin resin

96 h LC50	:	Oncorhynchus mykiss (rainbow trout) 1.2 mg/l
72 h ErC50	:	Scenedesmus capricornutum (fresh water algae) > 11 mg/l
72 h NOEC	:	Scenedesmus capricornutum (fresh water algae) 4.2 mg/l
48 h EC50	:	Daphnia magna (Water flea) 1.1 mg/l OECD Test Guideline 202
21 d	:	NOEC Daphnia magna (Water flea) 0.3 mg/l OECD Test Guideline 211

Environmental Fate

Poly(epichlorohydrin/formaldehyde/phenol)

Biodegradability : Not biodegradable Directive 67/548/EEC Annex V, C.4.E.
 Not readily biodegradable.

Bioaccumulation : Does not bioaccumulate.

Bisphenol A-epichlorohydrin resin

Bioaccumulation : The substance has the potential to bioaccumulate.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product : Dispose of in accordance with local regulations. This material and its container must be disposed of in a safe way. Dispose of contents/container to an approved waste disposal plant in accordance with local, regional and national legislations. The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Contaminated packaging : Since empty containers 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.

SECTION 14. TRANSPORT INFORMATION

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Not classified as dangerous in the meaning of transport regulations.

SECTION 15. REGULATORY INFORMATION

- TSCA : In compliance with TSCA-active Inventory requirements for commercial purposes.
- SARA 311/312 Hazard classification : Respiratory or skin sensitisation
- SARA 313 Regulated Chemical(s) : The following components are subject to reporting levels established by SARA Title III, Section 313: Aluminum oxide
- California Prop. 65 : WARNING: This product can expose you to substances including Quartz (non-inhalable), which is/are known to the State of California to cause cancer, and 4-Methylpentan-2-one, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

SECTION 16. OTHER INFORMATION

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.