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MATERIAL SAFETY DATA SHEET

BORA-CARE®

Health Emergencies: CHEMTREC® (800) 424-9300

SECTION 1 - PRODUCT AND COMPANY INFORMATION

Manufacturer: Nisus Corporation
100 Nisus Drive
Rockford, TN 37853
(800) 266-0870

Product Trade Name: **BORA-CARE®**
US EPA Registration No. 64405-1
Registration No. 30157 Pest Control Products Act (Canada)
Chemical Family: Glycol borate solution
Formula: Proprietary Mixture CAS No.: N/A

SECTION 2 – INGREDIENTS INFORMATION

40% Disodium Octaborate Tetrahydrate

60% mixed glycols (monoethylene and polyethylene glycols are used in the manufacturing process)

SECTION 3 – HEALTH HAZARD INFORMATION

Hazard Rating: NFPA			
	Health	1	Slight hazard
	Flammability	0	
	Reactivity	0	

Material or Component: Manufactured using Ethylene Glycol CAS No. 107-21-1
TLV 50.00 ppm ACGIH Type CEIL
(Note this is a raw material and there is no free ethylene glycol present.)

EYE CONTACT: Causes moderate eye irritation. Direct contact may cause burning, tearing and redness in sensitive individuals.
SKIN CONTACT: This material is essentially non-irritating. Prolonged or repeated exposure to this material may cause softening of the skin. Persons with preexisting skin disorders may be more susceptible to the effects of this material. Harmful if absorbed through skin.
INGESTION: Ingestion of large amounts may cause nausea, mental sluggishness followed by difficulty in breathing and heart failure, kidney and brain damage, possibly death.
INHALATION: Harmful if inhaled. Breathing high concentrations of vapors may cause nausea, dizziness or drowsiness, and irritation of the nose and throat. Preexisting lung disorders may be aggravated by exposure to this material.

SECTION 4 - EMERGENCY AND FIRST AID PROCEDURES

INHALATION: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.
SKIN CONTACT: Take off contaminated clothing. Immediately rinse skin with plenty of water for 15-20 minutes.
EYE CONTACT: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
INGESTION: SEEK EMERGENCY MEDICAL ATTENTION If the victim is drowsy or unconscious, place on the left side with the head down. Do not give anything by mouth. If victim is conscious and alert, vomiting should be induced for ingestion of more than 1 – 2 tablespoons for an adult, preferably with syrup of ipecac under direction from a physician or poison center. If syrup of ipecac is not available, vomiting can be induced by gently placing two fingers in back of throat. If large amounts are ingested, treat for glycol and borate toxicity. If possible, do not leave victim unattended.

NOTE TO PHYSICIAN: Treat for exposure to glycols. Contains borates. Monitor electrolytes.

SECTION 5 - FIRE AND EXPLOSION DATA

FLASH POINT Above 220°F (Tag Closed Cup)
FLAMMABLE LIMITS: Not known.
EXTINGUISHING MEDIA: CO_2, dry powder or universal type foam.
FIRE AND EXPLOSION HAZARDS: This material will not readily ignite.
FIRE FIGHTING PROCEDURES: Avoid inhaling smoke. The use of a SCBA is recommended for fire fighters. Water spray may be useful in minimizing vapors and cooling containers exposed to heat and flame.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

PRECAUTIONS IN CASE OF RELEASE OR SPILL: Absorb with organic liquid absorbent. Do not let material or washwaters enter sewers or waterways. Where large release has occurred see ecological section.

SECTION 7 - HANDLING AND STORAGE

HANDLING AND STORAGE PRECAUTIONS: Store between 40°F and 90°F. Do not store in direct sunlight. Keep containers tightly closed.
Store in areas not accessible to children and pets.
Do not store with strong oxidizers.
Locked storage is required for EPA registered materials.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

RESPIRATORY PROTECTION: Good ventilation. When applying Bora-Care in confined spaces, provide ventilation or an exhaust system or use of a NIOSH-approved dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C) with a prefilter approved for pesticides (MSHA/NIOSH approval prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval prefix TC-14G) or a NIOSH-approved respirator with any N, R, P or HE prefilter is recommended.
VENTILATION: Exhaust to ventilate.

Bora-Care is easily washed form eyes and skin.

US EPA requires the following personal protective equipment when applying registered materials:

PROTECTIVE GLOVES: Some materials that are chemical-resistant to this product are barrier laminate; butyl, nitrile, neoprene and natural rubbers ≥ 14 mils; polyethylene; polyvinyl chloride; and viton ≥ 14 mils. If you want more options, follow the instructions for category C on an EPA chemical-resistance category selection chart.

EYE PROTECTION: Use safety glasses, goggles or face shield.
OTHER PROTECTIVE EQUIPMENT: Applicators, mixers and other handlers must wear long-sleeved shirt, long pants, socks, shoes, chemical-resistant gloves and protective eyewear. It is recommended that a source of clean water be available in the work area for flushing eyes and washing skin.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear viscous gel
Specific Gravity: 1.38 g/ml
% Volatile: 36% by weight by TGA (as water)
Vapor Pressure: Negligible (<0.1)
Boiling Point: Above 212° F
Odor: None
% Solubility in Water: 100%
pH: 50% aqueous solution 6.9 - 7. 1

SECTION 10 - STABILITY AND REACTIVITY

STABILITY: Stable
CONDITIONS TO AVOID: Exposure to strong oxidizing agents. INCOMPATIBILITY (MATERIALS TO AVOID). This material is incompatible with strong oxidizing agents. This product may corrode aluminum.
HAZARDOUS POLYMERIZATION: Will not occur
HAZARDOUS DECOMPOSITION PRODUCTS: Ethylene oxide, carbon monoxide, carbon dioxide.

SECTION 11 - TOXICOLOGY

Bora-Care is of very low acute mammalian toxicity.

Acute oral LD_{50} - greater than 5000 mg/kg body weight (Sprague-Dawley male and female rats).
Acute dermal LD_{50} - greater than 2000 mg/kg body weight (New Zealand Albino male and female rabbits).
Acute inhalation LC_{50} – 5.06 mg/L for 4 hours (Sprague-Dawley male and female rats).
Intentional misuse by deliberately concentrating and inhaling this material may be harmful or fatal.
None of the major constituents of this material have been identified as carcinogens or probable carcinogens by IARC or OSHA.
The RfD for ethylene glycol is 2.0 mg/kg/day based on kidney toxicity in rats. US EPA has a high confidence in the study on which the RfD was based. The RfD is protective of animal demonstrated chronic and reproductive effects. Preexisting kidney disorders may be aggravated by exposure to this material.
Borates have been shown to have some chronic toxicity in animals fed high doses, similar to that of alcohol, but this has not been found in humans.

SECTION 12 – ECOLOGICAL INFORMATION

General: Boron (B) is the element in disodium octaborate tetrahydrate (the active ingredient in Bora-Care) which is used by convention to report borate product ecological effects. To convert disodium octaborate tetrahydrate into the equivalent boron (B) content, multiply by 0.2096. Bora-Care contains 8.4% B by weight.
Phytotoxicity: Boron is an essential micronutrient for healthy growth of plants; however, it can be harmful to boron sensitive plants (e.g. grass and ornamentals) in high quantities.
Algal Toxicity: Green algae, *Scenedesmus subspicatus*
96-hr EC_{10} = 24 mg B/L
Invertebrate Toxicity: Daphnids, *Daphnia magna straus*
24-hr EC_{50}=242 mg B/L
Test substance: sodium tetraborate
Fish Toxicity:
Seawater:
Dab*, Limanda limanda*
96-hr LC_{50} 74 MG B/LL
Freshwater:
Rainbow trout, *S. gairdnen*i (embryo-larval stage)
24-day LC_{50} = 88 mg B/L
32-day LC_{50}) = 54 mg B/L
Goldfish, *Carassius auratus* (embryo-larval stage)
7-day LC_{50} = 65 mg B/L
3-day LC_{50} = 71 mg B/L

The LC_{50} of ethylene glycol = 9500 to 51,000 mg/l depending on organism, so is of no relevance. See above boron ecological information.

In the event of accidental environmental release, dilute with water.

Bora-Care is rapidly diluted to natural background micronutrient levels of boron, and the organic glycol components are biodegraded by microorganisms with a half-life of between 1 and 10 days (90% in one day using OECD 302B Test).

SECTION 13 – DISPOSAL CONSIDERATION

Make up only the amount of solution to be used that day. Excess solution can be used in treatment or further diluted with water and this diluted solution used to dilute product in future applications.

WASTE DISPOSAL METHOD: Unopened containers may be returned to Nisus corporation for reprocessing. Contact your State Pesticide, Environmental Control Agency or local authorities for proper disposal guidelines. Most sewage facilities will allow discharge to sewage of small volumes. Very large volume can retard sewage processing.

SECTION 14 – TRANSPORTATION INFORMATION

DOT Hazard Classification: Not Regulated

SECTION 15 – REGULATORY INFORMATION

US EPA Registration No. 64405-1
Registration No. 30157 Pest Control Products Act (Canada)
Chemical Family: Glycol borate solution

Hazard Rating: NFPA	Health	1	Slight hazard
	Flammability	0	
	Reactivity	0	

SECTION 16 – OTHER INFORMATION

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind expressed or implied is made with respect to the information contained herein. This information and product are furnished on the condition that the persons receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use thereof.

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