

NiBor-D™

INSECTICIDE AND FUNGICIDE

Material Safety Data Sheet

Date of Issue: November 1999

SECTION I – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: NiBor-D™
Product use: Insecticide and Fungicide
Chemical formula: Na₂B₈O₁₃·4H₂O
Chemical name/synonyms: Disodium octaborate tetrahydrate
Chemical family: Inorganic borates
CAS registry number: 12280-03-4
EPA registration number: 64405-8
(Refer to Section 15 for TSCA/DSI, Chemical inventory listing)

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HEALTH EMERGENCIES: Chemtrec® (800) 424-9300

SECTION II – HAZARD IDENTIFICATION AND PERSONAL PROTECTIVE EQUIPMENT INFORMATION

EMERGENCY OVERVIEW: NiBor-D is a white, odorless, powdered substance that is not flammable, combustible, or explosive and has low acute oral and dermal toxicity.

POTENTIAL ECOLOGICAL EFFECTS: Large amounts of NiBor-D can be harmful to plants and other species. Therefore, releases to the environment should be minimized.

POTENTIAL HEALTH EFFECTS: Routes of exposure: Inhalation is the most significant route of exposure in occupational and other settings. Dermal exposure is not usually a concern because NiBor-D is poorly absorbed through intact skin.

INHALATION: Occasional mild irritation effects to nose and throat may occur from inhalation of NiBor-D dust at levels greater than 10 mg/m³.

EYE CONTACT: NiBor-D is non-irritating to eyes in normal use.

SKIN CONTACT: NiBor-D does not cause irritation to intact skin.

INGESTION: Products containing NiBor-D are not intended for ingestion. NiBor-D has a low acute toxicity. Small amounts (e.g., a teaspoonful)

swallowed accidentally are not likely to cause effects; swallowing amounts larger than that may cause gastrointestinal symptoms.

CANCER: NiBor-D is not a known carcinogen.

SIGNS AND SYMPTOMS OF EXPOSURE: Symptoms of accidental over-exposure to NiBor-D might include nausea, vomiting, and diarrhea, with delayed effects of skin redness and peeling.

PERSONAL PROTECTION: Eye protection, protective clothing, and waterproof gloves may be necessary under certain high exposure conditions. Otherwise, refer to label for actual regulatory personal protection requirements.

OCCUPATIONAL EXPOSURE LIMITS: Disodium octaborate tetrahydrate (NiBor-D) is considered to be a nuisance dust by OSHA, Cal OSHA, and ACGIH. The OSHA/PEL is 15mg/m³ total dust and 5mg/m³ respirable dust. The Cal OSHA/PEL and ACGIH/TLV are 10 mg/m³. Use local exhaust or engineering controls to prevent exceeding exposure limits if possible.

SECTION III – FIRST AID MEASURES

Inhalation: If symptoms such as nose or throat irritation are observed, remove person to fresh air.

Eye contact: Use eye wash fountain or fresh water to cleanse eye. If irritation persists for more than 30 minutes, seek medical attention.

Skin Contact: No treatment necessary because non-irritating.

Ingestion: Swallowing small quantities (one teaspoon) will cause no harm to healthy adults. If larger amounts are swallowed, give two glasses of water to drink and seek medical attention.

SECTION IV – ACCIDENTAL RELEASE MEASURES

General: NiBor-D is a water-soluble white powder that may, at high concentrations, cause damage to trees or vegetation by root absorption.

Land spill: Vacuum, shovel or sweep up NiBor-D and place in containers for disposal in accordance with applicable local regulations. Avoid contamination of water bodies during cleanup and disposal.

Spillage into water: Where possible, remove any intact containers from the water. Advise local water authority that none of the affected water

should be used for irrigation or for the abstraction of potable water until natural dilution returns the boron value to its normal environmental background level.

NiBor-D is a non-hazardous waste when spilled or disposed of, as defined in the Resource Conservation and Recovery Act (RCRA) regulations (40 CFR 261).

SECTION V – PHYSICAL AND CHEMICAL PROPERTIES

Appearance: White, odorless, powder

Bulk density: 320 to 480 kg/m³

Vapor pressure: Negligible @ 20°C

Solubility in water: 9.7% @ 20°C; 34.3% @ 50°C

Melting point: 815°C

pH @ 20°C: 8.3 (3.0% solution)
7.6 (10.0% solution)

SECTION VI – FIRE FIGHTING MEASURES AND HANDLING INSTRUCTIONS

FIRE FIGHTING MEASURES

General hazard: None, because NiBor-D is not flammable, combustible or explosive. The product is itself a flame retardant. Extinguishing media: Any extinguishing media may be used on nearby trees.

Flammability classification (29 CFR 1910.1200): Nonflammable solid.

General: NiBor-D is a stable product.

Hazardous decomposition: None.

HANDLING INSTRUCTIONS

General: No special handling precautions are required, but dry indoor storage is recommended. Good housekeeping procedures should be followed to minimize dust generation and accumulation.

Storage Conditions: Ambient air temperatures and a low moisture environment.

Incompatible materials and conditions to avoid: Reaction with strong reducing agents, such as metal hydrides or alkali metals, will generate hydrogen gas, which could create an explosive hazard.

SECTION VII – TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Ingestion: Low acute oral toxicity; LD₅₀ in rats is 2,550 mg/kg of body weight.

Skin/dermal: Low acute dermal toxicity; LD₅₀ in rabbits is greater than 2,000 mg/kg of body weight. NiBor-D is poorly absorbed through intact skin.

Inhalation: Low acute inhalation toxicity; LD₅₀ in rats is greater than 2.0 mg/L (or g/m³).

Skin irritation: Non-irritant.

Eye irritation: Draize test in rabbits produced mild eye irritation effects. Years of occupational exposure to NiBor-D indicates no adverse effects on human eye. Therefore NiBor-D is not considered to be a human eye irritant in normal industrial use.

Sensitization: NiBor-D is not a skin sensitizer.

SECTION VIII – ECOLOGICAL INFORMATION

ECOTOXICITY DATA

General: Boron (B) is the element in disodium octaborate tetrahydrate (NiBor-D) 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.

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 EC₁₀ = 24 mg B/L

Invertebrate toxicity: Daphnids, *Daphnia magna straus*

24-hr EC₅₀ = 242 mg B/L

Test substance: sodium tetraborate

Fish toxicity:

Seawater:

Dab, Limanada limanda

96-hr LD₅₀ = 74 mg B/L

Freshwater:

Rainbow trout, *S. gairdneri* (embryo-larval stage)

24-day LD₅₀ = 88 mg B/L

32-day LD₅₀ = 54 mg B/L

Goldfish, *Carassius auratus* (embryo-larval stage)

7-day LD₅₀ = 65 mg B/L

3-day LD₅₀ = 71 mg B/L

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SECTION IX – DISPOSAL CONSIDERATIONS

Disposal guidance: Consult state and local authorities for disposal guidelines.

RCRA (40 CFR 261): NiBor-D is not listed under any sections of the Federal Resource Conservation and Recovery Act (RCRA).

SECTION X – REGULATORY INFORMATION

OSHA/Cal OSHA: This MSDS document meets the requirements of both OSHA (29 CFR 1910.1200) and Cal OSHA (Title 8 CCR 5194 (g)) hazard communication standards. Refer to Section 8 for regulatory exposure limits. **FIFRA:** NiBor-D is registered with the EPA (EPA Reg. No. 64405-8), in accordance with Section 3 of FIFRA, as a pesticide product.

U.S. EPA TSCA Inventory 12008-41-2

RCRA: Disodium octaborate tetrahydrate is not listed as a hazardous waste under any sections of the Resource Conservation and Recovery Act (RCRA) or regulations (40 CFR 261 *et seq.*).

California Proposition 65: Disodium octaborate tetrahydrate (NiBor-D) is not listed on the Proposition 65 list of carcinogens or reproductive toxicants.

Superfund: CERCLA/SARA. Disodium octaborate tetrahydrate is not listed. **Safe Drinking Water Act (SDWA):** Disodium octaborate tetrahydrate is not regulated under the SDWA, 42 USC 300g-1, 40 CFR 141 *et seq.* Consult state and local regulations for possible water quality advisories regarding boron compounds.

Clean Water Act (CWA) (Federal Water Pollution Control Act): 33 USC 1251 *et seq.*

- Disodium octaborate tetrahydrate (NiBor-D) is not itself a discharge covered by any water quality criteria of Section 304 of the CWA, 33 USC 1314.
- It is not on the Section 307 List of Priority Pollutants, 33 USC 1317, 40 CFR 129.
- It is not on the Section 311 List of Hazardous Substances, 33 USC 1321, 40 CFR 116.

Transportation Information: DOT hazardous classification - Disodium Octaborate Tetrahydrate (NiBor-D) is not regulated by the U.S. Department of Transportation.

For further information contact: NISUS Corporation Technical and Sales Support: 1-800-264-0870.



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