# Boracide ™

INSECTICIDE AND FUNGICIDE

## Material Safety Data Sheet

**Date of Issue: November 2003**

### SECTION I – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product name:** **Boracide**™
**Product use:** Insecticide and Fungicide
**Chemical formula:** $Na_2B_8O_{13} \bullet 4H_2O$
**Chemical name/synonyms**: Disodium octaborate tetrahydrate
**Chemical family:** Inorganic borates
**EPA registration number**: 64405-7
(Refer to Section 15 for TSCA/DSI, Chemical inventory listing)

**MANUFACTURER:** Nisus® Corporation
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(800) 264-0870
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**HEALTH EMERGENCIES:** **Chemtrec® (800) 424-9300**

### SECTION II – HAZARD IDENTIFICATION AND PERSONAL PROTECTIVE EQUIPMENT INFORMATION

**EMERGENCY OVERVIEW:** Boracide 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 Boracide 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 Boracide is poorly absorbed through intact skin.
**INHALATION:** Occasional mild irritation effects to nose and throat may occur from inhalation of Boracide dust at levels greater than 10 mg/m$^3$.
**EYE CONTACT:** Boracide is non-irritating to eyes in normal use.
**SKIN CONTACT:** Boracide does not cause irritation to intact skin.
**INGESTION:** Products containing Boracide are not intended for ingestion. Boracide 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:** Boracide is not a known carcinogen.
**SIGNS AND SYMPTOMS OF EXPOSURE:** Symptoms of accidental over-exposure to Boracide 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 (Boracide) is considered to be a nuisance dust by OSHA, Cal OSHA, and ACGIH. The OSHA/PEL is 15mg/m^3 total dust and 5mg/m^3 respirable dust. The Cal OSHA/PEL and ACGIH/TLV arc 10 mg/m^3. 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 arc swallowed, give two glasses of water to drink trod seek medical attention.

### SECTION IV – ACCIDENTAL RELEASE MEASURES

**General:** Boracide is a water-soluble white powder that may, at high concentrations, cause damage to trees or vegetation by root absorption.
**Land spell:** Vacuum, shovel or sweep up Boracide 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.

Boracide 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

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| **Appearance:** | White, odorless, powder | **Solubility in water:** | 9.7% @ 20°C; 34.3% @ 50°C |
| **Bulk density:** | 320 to 480 kg/m$^3$ | **Melting point:** | 815°C |
| **Vapor pressure**: | Negligible @ 20°C | **pH @ 20°C:** | 8.3 (3.0% solution)<br>7.6 (I0.0% solution) |

### SECTION VI – FIRE FIGHTING MEASURES AND HANDLING INSTRUCTIONS

**FIRE FIGHTING MEASURES**
**General hazard:** None, because Boracide 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:** Boracide 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; $LD_{50}$ in rats is 2,550 mg/kg of body weight.
**Skin/dermal:** Low acute dermal toxicity; $LD_{50}$ 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; $LD_{50}$ in rats is greater than 2.0 mg/L (or $g/m^3$).
**Skin irritation:** Non-irritant.
**Eye irritation:** Draize test in rabbits produced mild eye irritation effects. Years of occupational exposure to Boracide indicates no adverse effects on human eye. Therefore Boracide is not considered to he a human eye irritant in normal industrial use.
**Sensitization:** Boracide is not a skin sensitizer.

## SECTION VIII – ECOLOGICAL INFORMATION

**ECOTOXICITY DATA**
**General:** Boron (B) is the element in disodium octaborate tetrahydrate (Boracide) 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 $EC_{10}$ =24 mg B/L
**Invertebrate toxicity`:** Daphnids, *Daphnia magna straustilt's*
24-hr $EC_{50}$ = 242 mg B/L
Test substance: sodium tetraborate
**Fish toxicity:**
Seawater:
Dab, *Limanada limanda*
96-hr $LD_{50}$ = 74 mg B/L
Freshwater:
Rainbow trout, S. gairdneri (embryo-larval stage)
24-day $LD_{50}$ = 88 mg B/L
32-day $LD_{50}$ = 54 mg B/L
Goldfish, *Carassius auratus* (embryo-larval stage)
7-day $LD_{50}$ = 65 mg B/L
3-day $LD_{50}$ = 71 mg B/L

## SECTION IX – DISPOSAL CONSIDERATONS

**Disposal guidance:** Consult state and local authorities for disposal guidelines.
**RCRA (40 CFR 261):** Boracide 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:** Boracide 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 octaboratc 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 (Boracide) 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 (Boracide) 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 (Boracide) is not regulated by the U.S. Department of Transportation.

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