SAFETY DATA SHEET

NIBOR-D®

INSECTICIDE

Health Emergencies: INFOTRAC® (800) 535-5053

1. PRODUCT AND COMPANY INFORMATION

Product Identity: Nibor-D®

Recommended use of the chemical and restrictions on use: Termiticide, Insecticide, and Fungicide Concentrate Powder. Read and understand the entire label before using. Use only according to label directions. It is a violation of Federal law to use this product in a manner inconsistent to label directions.

Manufacturer: Nisus Corporation
100 Nisus Drive
Rockford, TN 37853

Telephone: Phone: (800) 264-0870
Fax: (865) 577-5825

Emergency Phone: 800-535-5053 (INFOTRAC)

SDS Date of Preparation: 01/12/16

2. HAZARDS IDENTIFICATION

GHS Classification:

Health
Reproductive Toxicity Category 2

GHS Label Elements:



Signal Word: Warning!

Statements of Hazard
H303: May be harmful if swallowed.
H361: Suspected of damaging fertility or the unborn child.

Precautionary Statements
P202: Do not handle until all safety precautions have been read and understood.
P308+P313: If exposed or concerned: Get medical advice/attention.
P501: Dispose of contents/container in accordance with local regulation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No.	Amount
Disodium Octaborate Tetrahydrate	12280-03-4	>99%

The exact formulation is being withheld as a trade secret.

4. FIRST AID MEASURES

Description of necessary first aid measures
Protection of first-aiders: No special protective clothing is required.
Inhalation: If symptoms such as nose or throat irritation are observed, move 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.
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.

Most important symptoms and effects both acute and delayed: Symptoms of accidental over-exposure to high doses of inorganic borate salts have been associated with ingestion or absorption through large areas of severely damaged skin. These may include nausea, vomiting, and diarrhea, with delayed effects of skin redness and peeling (see Section 11).

Indication of any immediate medical attention and special treatment needed: Note to physicians: Supportive care only is required for adult ingestion of less than a few grams of the product. For ingestion of larger amounts, maintain fluid and electrolyte balance and maintain adequate kidney function. Gastric lavage is only recommended for heavily exposed, symptomatic patients in whom emesis has not emptied the stomach. Hemodialysis should be reserved for patients with massive acute absorption, especially for patients with compromised renal function. Boron analyses of urine or blood are only useful for verifying exposure and are not useful for evaluating severity of poisoning or as a guide in treatment.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media: Use extinguishing media that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media: None
Special hazards arising from the chemical: None. The product is not flammable, combustible or explosive.
Special protective equipment and precautions for fire fighters: Not applicable. The product is itself a flame retardant.

6. ACCIDENTAL RELEASE MEASURES

Precaution, protective equipment and emergency procedures

For non-emergency personnel:
Eye goggles and gloves are not required for normal industrial exposures, but eye protection according to ANSI Z.87.1 or other national standard. Respirators should be considered if environment is excessively dusty.
For emergency responders:
Eye goggles and gloves are not required for normal industrial exposures, but eye protection according to ANSI Z.87.1 or other national standard. Respirators should be considered if environment is excessively dusty.
Environmental precautions: The product is a water-soluble white powder that may cause damage to trees or vegetation by root absorption. Avoid contamination of water bodies during clean up and disposal. 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 or meets local water quality standards.
Methods and Materials for Containment and Cleaning Up:
Appropriate containment: Avoid spillage into water and cover drains.
Land spill: Vacuum, shovel or sweep up and place in containers for disposal in accordance with applicable local regulations.
Spillage into water: Where possible, remove any intact containers from the water.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Good housekeeping procedures should be followed to minimize dust generation and accumulation. Avoid spills. Do not eat, drink or smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

Nonrefillable container. Do not reuse containers. Product residues in empty containers can be hazardous. Follow all SDS precautions when handling empty containers.

Conditions for Safe Storage, Including Any Incompatibilities: No special handling precautions are required, but dry, indoor storage is recommended. To maintain package integrity and to minimize caking of the product, bags should be handled on a first-in first-out basis.

Storage temperature: Ambient
Storage pressure: Atmospheric
Special sensitivity: Moisture (Caking)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limit values: In the absence of a national OEL, Rio Tinto Borax recommends and applies internally an Occupational Exposure Limit (OEL) of 1 mg B/m^3. To convert product into equivalent boron (B) content, multiply by 0.21.

Occupational Exposure Limits:

OSHA/PEL (total dust)	15 mg/m^3	Particulate Not Otherwise Classified or Nuisance Dust
OSHA/PEL (respirable dust)	5 mg/m^3	Particulate Not Otherwise Classified or Nuisance Dust
Cal OSHA/PEL	5 mg/m^3	Particulate Not Otherwise Classified or Nuisance Dust

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: White, crystalline solid **Odor:** Odorless
Odor Threshold: Odorless
pH @ 20°C: 8.3 (3.0% solution); 7.6 (10.0% solution)
Melting point: 815°C
Initial boiling point and boiling range: Not applicable.

10. STABILITY AND REACTIVITY

Reactivity: None known.
Chemical stability: Under normal ambient temperatures (-40°C to +40°C), the product is stable.
Possibility of hazardous reactions: Reaction with strong reducing agents such as metal hydrides or alkali metals will generate hydrogen gas which could create an explosive hazard.
Conditions to avoid: Avoid contact with strong reducing agents by storing according to good industrial practice.
Incompatible materials: Strong reducing agents.
Hazardous decomposition products: None.

11. TOXICOLOGICAL INFORMATION

Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact):

(a) Acute toxicity
Acute Oral Toxicity Study – OECD Guidelines 401
Low acute oral toxicity. LD_{50} in male rats is 2,550 mg/kg.
Classification: Acute Toxicity (Oral) Category 5 (Hazard statement: H303: May be harmful if swallowed)

Acute Dermal Toxicity Study – similar to OECD Guideline 402
Low acute dermal toxicity; LD_{50} in rabbits is > 2,000 mg/kg.

Acute Inhalation Toxicity Study – OECD Guideline 403
Low acute inhalation toxicity. LC_{50} in rats is > 2.0 mg/l (or g/m^3).

(b)Skin corrosion / irritation:
No skin irritation in rabbits. Mean Primary Irritation Score: 0.5. Based on the available data for the hydrated forms of sodium tetraborate, the classification criteria are not met.

(c) Serious eye damage / irritation:
Eye Irritation Study – similar to OECD Guideline 405
Results: Not irritating to eyes. Induced slight iritis, conjunctivae redness and chemosis, reversible after 4-7 days with a return to near normal by 7 days after exposure.
Classification: Based on mean scores of ≤ 1, and the effects were fully reversible within 7 days, the classification criteria are not met.

(d) Respiratory or skin sensitization:
Buehler Test – OECD Guideline 406
Not a skin sensitizer. No respiratory sensitization studies have been conducted. There are no data to suggest that boric acid or sodium borates are respiratory sensitizers. Based on the available data, the classification criteria are not met.

(e) Germ cell mutagenicity:
Not mutagenic (based on boric acid). Based on the available data, the classification criteria are not met.

(f) Carcinogenicity:
Method: OECD 451 equivalent.
No evidence of carcinogenicity (based on boric acid). Based on the available data, the classification criteria are not met.

(g) Reproductive toxicity:
Method: Three-generation feeding study, similar to OECD 416 Two-Generation Study
NOAEL in rats for effects on fertility in males is 100 mg boric acid/kg bw equivalent to 17.5 mg B/kg bw.

Prenatal Developmental Toxicity Study of Boric Acid - OECD Guideline 414
Routes of Exposure: Oral feeding study
NOAEL in rats for developmental effects on the fetus including fetal weight loss and minor skeletal variations is 55 mg boric acid/kg.
Reproductive Toxicity Category 2 (Hazard statement: H361: Suspected of damaging fertility or the unborn child.)

12. ECOLOGICAL INFORMATION

Ecotoxicity (aquatic and terrestrial, where available):
Note that the data values are expressed as boron equivalents. To convert to this product divide the boron equivalent by 0.21.

Freshwater—Chronic Studies

Taxonomic Group	Number of Taxa Tested	Range of Endpoint Values (geometric NOEC/EC_{10})
Algal	4	10 mg B/L (*Chlorella pyrenoidosa*) to 50 mg B/L (*Anacystis nidulans*)
Higher plants	3	4.0 mg B/L (*Phragmites australis*) to 60 mg B/L (*Lemna minor*)
Invertebrate and protozoan	7	5.7 mg B/L (*Daphnia magna*) to 32 mg B/L (*Chironomus riparius*)
Fish	6	2.9 mg B/L (*Micropterus salmoides*) to 17 mg B/L (*Carassius auratus*)
Amphibian	2	29 mg B/L (*Rana pipiens*) to 41 mg B/L (*Bufo fowleri*)

Based on the acute data for freshwater species, this substance is not classified as hazardous to the environment.

Marine and Estuary—Chronic Studies

Taxonomic Group	Number of Taxa Tested	Range of Endpoint Values (geometric NOEC/EC_{10})
Algal	19	5 mg B/L (*Emiliana huxleyi*) to >100 mg B/L (*Agmenellum quadruplicatum, Anacystis marina, Thallassiorsira pseudonana*)

Marine and Estuary—Acute Studies

Taxonomic Group	Number of Taxa Tested	Range of Endpoint Values (geometric EC/LC_{50})
Invertebrate	3	45 mg B/L (*Litopenaeus vannamei*) to 83 mg B/L (*Americamysis bahia*)
Fish	2	74 mg B/L (*Limanda limanda*) to 600 mg B/L (*Oncorhynchus tschawytscha*)

No data are available for algal species.

Sediment

Taxonomic Group	Number of Taxa Tested	Range of Endpoint Values (geometric EC/LC_{50})
Invertebrate	1	82.4 mg B/kg sediment dw (*Chironomus riparius*)

Results: Although limited, the data suggest that sediment organisms are within range of toxicity of aquatic organisms. In addition, the substance will not partition to the sediment, so a sediment/water partitioning approach is justified

Sewage Treatment Plants (STP)

Taxonomic Group	Number of Taxa Tested	Range of Endpoint Values (geometric NOEC/EC10)
Activated sludge	N/A	>17.5 mg B/L to 100 mg B/L
Microbes	3	10 mg B/L (*Opercularia bimarginata*) to 20 mg B/L (*Paramecium caudatum*)

Terrestrial—Chronic Studies

Taxonomic Group	Number of Taxa Tested	Range of Endpoint Values (geometric NOEC/EC10)
Plant	28	7.2 mg B/kg dw (*Zea mays*) to 56 mg B/kg dw (*Allium cepa*)
Invertebrates	9	15.4 mg B/kg dw (*Folsomia candida*) to 87 mg B/kg dw (*Caenorhabditis elegans*)
Soil micro	7	12 mg B/kg dw (nitrogen mineralization and nitrification test) to 420 mg B/kg dw (soil nitrogen transformation test)

Based on the complete data set, the HC5 value of the species sensitivity distribution is 10.8 mg B/kg dw.

Phytotoxicity: Boron is an essential micronutrient for healthy growth of plants. It can be harmful to boron sensitive plants in higher quantities. Care should be taken to minimise the amount of borate product released to the environment.
Persistence and Degradability: Biodegradation is not an applicable endpoint since the product is an inorganic substance.
Bioaccummulative potential: This product will undergo hydrolysis in water to form undissociated boric acid. Boric acid will not biomagnify through the foodchain.
Mobility in soil: The product is soluble in water and is leachable through normal soil. Adsorption to soils or sediments is insignificant.
Other adverse effects: None

13. DISPOSAL CONSIDERATION

Disposal methods:
Product packaging should be recycled where possible. Local authorities should be consulted about any specific local requirements Such product should, if possible, be used for an appropriate application.

14. TRANSPORTATION INFORMATION

Transport Classification for Road (ADR) / Rail (RID); Inland waterways (ADN); Sea (IMDG); Air (ICAO/IATA): Not Regulated

15. REGULATORY INFORMATION

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

U.S. EPA RCRA: This product 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*).

EPA FIFRA: This product is a pesticide registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals.

Following is the hazard information as required on the pesticide label:

Superfund: CERCLA/SARA. This product is not listed under CERCLA (Comprehensive Environmental Response Compensation and Liability Act) or its 1986 amendments, SARA (Superfund Amendments and Reauthorization Act), including substances listed under Section 313 of SARA, Toxic Chemicals, 42 USC 11023, 40 CFR 372.65, Section 302 of SARA, Extremely Hazardous Substances, 42 USC 11002, 40 CFR 355, or the CERCLA Hazardous Substances list, 42 USC 9604, 40 CFR 302.

Safe Drinking Water Act (SDWA): This product 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*.
a) This product is not itself a discharge covered by any water quality criteria of Section 304 of the CWA, 33 USC 1314.

b) It is not on the Section 307 List of Priority Pollutants, 33 USC 1317, 40 CFR 129.

FIFRA Labeling:

Nibor-D
EPA Reg. No. 64405-8
Keep Out of Reach of Children
CAUTION
PRECAUTIONARY STATEMENTS
Hazards to Humans & Domestic Animals

CAUTION:
Causes moderate eye irritation. Harmful if swallowed. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

CERCLA: Report all spills in accordance with local, state, and federal regulations.

SARA Hazard Category (311/312): Acute Health, Chronic Health

SARA 313: This product contains no chemicals subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372).

EPA TSCA Inventory: This product is regulated under FIFRA, thus exempt.

IARC: The International Agency for Research on Cancer (IARC) (a unit of the World Health Organization) does not list or categorize this product as a carcinogen.

OSHA carcinogen: This product is not listed.

California Proposition 65: This product is not listed on the Proposition 65 list of carcinogens or reproductive toxicants.

16. OTHER INFORMATION

NFPA Rating: Health = 0 Flammability = 0 Reactivity = 0
HMIS Rating: Health = 1* Flammability = 0 Reactivity = 0
*Chronic Effects

SDS Revision History: 04/28/15: New SDS
01/12/16: Revised

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