SIMPLICITY, VERSATILITY

NIBOR-D®

NOW AVAILABLE IN CONVENIENT SINGLE-USE PACKETS

Single-use packets give you great inventory control, insure accurate measuring and help eliminate potential spills and drift. Nibor-D is great for dusting wall voids and attics, using in a liquid formulation for general pests and using as a drain foam and mop solution in commercial kitchens.

Simply use:

- 1 packet per gallon for a 5% solution
- 2 packets per gallon for a 10% solution
- 3 packets per gallon for a 15% solution

Pest companies around the country are getting control in the toughest commercial accounts because Nibor-D turns food debris left behind due to poor sanitization into a borate bait that helps them achieve and maintain control.



Remember, always read, understand and comply with the label.
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NIBOR-D®

ACTIVE INGREDIENT:
98% DOT

APPLICATION:

Dust into cracks & crevices, wall voids and attics. Use as a liquid 5%, 10% or 15% solution. Add an IGR or disinfectant. Use as a foam in commercial kitchens to foam drains and turn remaining food debris into a bait.

TARGET PESTS:

ANTS · COCKROACHES · FLIES · SMALL FLIES

CREATING A WORLD OF SUSTAINABILITY.

Nisus CORPORATION
100 NISUS DRIVE • ROCKFORD, TN 37853
800.264.0870 • WWW.NISUSCORP.COM

NIBOR-D®

INSECTICIDE

For the control and prevention of general pests such as crickets, cockroaches, silverfish, ants, fleas, lady bugs, drain flies, small flies, cluster flies, darkling beetles and earwigs.

For both interior and exterior use.

Use Nibor-D in apartment buildings, bird and poultry production facilities, buses, carpet cleaning machines, factories, garages, grocery stores, homes, hospitals, hotels, industrial plants, kennels, libraries, manhole covers, markets, military bases, mobile homes, new construction, nursing homes, offices, public and private institutions, restaurants, sewers, schools, ships, theaters, trains, trucks, utilities, warehouses, yachts and zoos.

ACTIVE INGREDIENT:

Disodium Octaborate Tetrahydrate (CAS No. 12280-03-4)..	98%
OTHER INGREDIENT*.....	2%
TOTAL	100%

*Contains 2% H_2O Absorbed Moisture

EPA Reg. No. 64405-8
EPA Est. 64405-TN-1

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Keep Out of Reach of Children

CAUTION

First Aid

If Swallowed	• Immediately call a poison control center or doctor for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If Inhaled	• 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. • Call a poison control center or doctor for further treatment advice.
If in Eyes	• 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. You may also contact 1-800-424-9300 for emergency medical treatment information.	

PRECAUTIONARY STATEMENTS
Hazards to Humans & Domestic Animals

CAUTION: Harmful if swallowed or inhaled. Causes moderate eye irritation. Avoid contact with eyes or clothing. Avoid breathing dust. Thoroughly wash with soap and water after handling. Remove contaminated clothing and wash clothing before reuse.

Environmental Hazards

This pesticide is toxic to fish and wildlife. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

Personal Protective Equipment (PPE)

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.

Applicators, mixers and other handlers must wear long-sleeved shirt, long pants, socks, shoes, chemical-resistant gloves and protective eyewear. When applying this product in confined spaces, provide ventilation or an exhaust system; or use 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 use a canister approved for pesticides (MSHA/NIOSH approval prefix TC-14G) or a NIOSH-approved respirator with any N, R, P or HE prefilter.

User Safety Requirements

Follow manufacturer's instructions for cleaning/ maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet;
- Remove clothing immediately if pesticide gets inside, then wash thoroughly and put on clean clothing;
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

NOTICE

Read and understand the entire label before using.
Use only according to label directions.

Before buying or using this product, read the ***Warranty Disclaimer*** and ***Limitation of Remedies*** statements found elsewhere on this label. If terms are unacceptable, return unopened package to seller for full refund of purchase price. Otherwise, use by the buyer or any other user constitutes acceptance of the terms under the ***Warranty Disclaimer*** and ***Limitation of Remedies***.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

GENERAL INSECT CONTROL

Product Information

Nibor-D is a water soluble inorganic borate salt with insecticidal properties that can be applied as a liquid solution, mop solution or dust. Dry foam applications can be used when better adhesion to treated surfaces and minimal runoff is desired. Residual effects of Nibor-D will last longer in areas protected from weather and elements. It is effective as both a preventative and remedial treatment to kill and control general and nuisance pests such as, but not limited to, those listed below:

General Ants (including Argentine, Thief, Little Black, Pavement, Odorous House, Crazy and Ghost Ants), **Boxelder Bugs, Carpenter Ants, Cluster Flies, Centipedes, Crickets** (including House Crickets, Field Crickets and Camel Crickets), **Darkling Beetles, Dust Mites, Earwigs, Flies, Fleas, Hide Beetles, Lady Bugs, Millipedes, Roaches** (including German, Brown-banded, Smokey Brown, Brown, American, Australian and Oriental Roaches), **Small Flies** (including Fruit and Drain flies) and **Silverfish**.

Use Nibor-D in apartment buildings, bird and poultry production facilities, buses, carpet cleaning machines, factories, garages, grocery stores, homes, hospitals, hotels, industrial plants, kennels, libraries, manhole covers, markets, military bases, mobile homes, new construction, nursing homes, offices, public and private institutions, restaurants, sewers, schools, ships, theaters, trains, trucks, utilities, warehouses, yachts and zoos.

Nibor-D may be applied into cracks and crevices on outside areas of structures including cracks and crevices around windows, doorframes and other areas where insect pests may enter or to areas where insects hide, such as behind baseboards, storage shelves and wall studs; between elements of construction, equipment and floors; in attics, attic insulation, block voids, box sills, cracks, crevices, eaves, equipment legs and equipment bases, voids and wall voids; in openings around pipes and sinks and openings leading to voids and hollow spaces in walls; on logs, lumber, moist areas, plywood, railroad ties, soffits and utility poles; under refrigerators; and wood-foam composite structural components. Do not apply Nibor-D liquid solutions in conduits, motor housings, junction boxes, switch boxes or other electrical equipment because of possible shock hazard.

Application for Food Processing and Handling Establishments, including Federally Inspected Poultry and Meat Plants: In food areas, only apply product into cracks, crevices and other inaccessible areas. Avoid introducing any product into the air. Avoid contamination of food and feed stuffs. Do not apply product directly onto a surface where food is prepared, served or stored. Any product left visible on a food surface after treatment should be removed and surface washed.

Food Areas Include: Serving Areas, such as dining rooms, food storage areas, receiving areas, processing areas, including enclosed systems such as oil and syrup plants, mills and dairies; packing areas, including canning, bottling, wrapping and boxing; and edible waste storage areas. In these areas, direct product applications into cracks and crevices, such as along baseboards and between elements of construction. Do not allow product on any surfaces that may be contacted by food. Do not apply when facility is in operation or when food is exposed.

Non-Food Areas Include: Bathrooms, locker rooms, offices, maintenance rooms, mechanical rooms, trash rooms, garages, janitorial closets, storage areas after bottling or canning and floor drains leading to sewer entries. In these areas, apply product as labeled for other non-food areas.

Always test any materials to be treated for color fastness and potential staining. Product may leave a light residue on dark surfaces. This residue may be removed with a warm damp cloth.

Apply Nibor-D only in areas inaccessible to children and pets. Allow product to dry completely before allowing pets or children back on treated surfaces.

Preparation of a 15% Nibor-D Liquid Solution

Measure approximately 80% of the required volume of water to the mixing vessel. While stirring, gradually add Nibor-D powder into water. For liquid sprays or foams, add 1.5 lbs (approximately 7.5 cups) of Nibor-D for each gallon of finished solution required. Or, if mopping, treating carpets, furniture, mold, mildew, or using a carpet cleaning machine, add only 8 ounces (approximately 2.5 cups) of Nibor-D per gallon of water. Add remaining water to the mixing vessel and stir until Nibor-D has completely dissolved. Use this finished solution as soon as possible. Do not store for an extended length of time.

Nibor-D can be used in conjunction with an insect growth regulator (IGR) such as pyriproxyfen, hydroprene or methoprene, a fungicide/mildewcide, an emulsifiable disinfectant or a non-residual knock-down emulsifiable insect adulticide.

Preparation of a Nibor-D Foam Solution

To create a dry consistency foam, add a surfactant/foaming agent and a Nibor-D liquid solution into foaming application equipment. Generally 1-2 ounces of a foaming agent will create dry foam with the desired expansion ratio of 20:1. Refer to the foaming equipment manufacturer's manuals and the surfactant labels for additional instructions.

Wash and rinse all equipment after each use.

Dust Application Instructions

No powder should be visible after application. Remove or brush any powder visible after application into cracks and crevices.

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General and Nuisance Pests, including Lady Bugs: Apply Nibor-D as a dust into the cracks, crevices and void areas of exterior walls and around windows, doors eaves and soffits. Caulking should be applied after application to seal any available crack.

Refuse Containers: Apply to container at the rate of 12-20 ounces per 250 square feet of area.

Floor Drains: Apply 1-2 ounces of dust into the drain opening followed by at least one quart of mop rinse water to control and prevent fly, including small fly, populations.

Sewers and Manhole Cavities: Apply as a dust at a rate not to exceed 12 oz. per 250 square feet using a blower or air pressure equipment.

New Construction: When treating large areas such as wall voids or soffit and subcabinet voids in new and existing construction, dust liberally using dusting application equipment. Apply dust at 12-20 ounces per 250 square feet.

Attic Insulation: Nibor-D can be applied to all insulation materials including cellulose, fiberglass and natural fiber. Make sure the areas around attic soffits and pipe protrusions are properly treated. Do not over-apply or reapply into previously treated attics unless the treated insulation has been removed or additional insulation is installed.

Rolled Insulation: Apply before or after installation at the rate of 1 oz / 8 ft^2 of insulated area.

Blown Insulation: Apply to existing insulation at the rate of 2 oz / 8 ft^2 of insulated area. If new insulation is to be installed over any type of existing insulation, apply at the rate of 1 oz / 8 ft^2 to the existing insulation and then again to the new blown-in insulation. Add to blown-in insulation applicators at a maximum rate of 1-2 oz / 8 ft^2 of insulation.

Liquid and Foam Application Instructions

Refuse Containers: Apply liquid or foam solution at a gallon per 200-250 square feet.

Floor Drains: Pour up to one quart of finished solution into each floor drain to prevent and control fly populations. This solution can also be applied as foam into drains.

Mop Solution: This is to be used as a supplemental treatment in conjunction with other pest management practices and may be reapplied as necessary. Apply only to floors by mopping. Allow the mop solution to penetrate into cracks and crevices in the tile or flooring and into crevice areas under equipment to affect possible hidden food sources and harborage areas that may contain small fly larva, including fruit fly and drain fly species and other insect pests. Remove or brush any powder visible after application into cracks and crevices.

Avoid introducing the material into the air or onto any exposed surfaces other than the floor area. Avoid contaminating food or food processing surfaces. Do not apply when foods are exposed or facility is in operation. Do not contaminate feed and foodstuffs.

Carpets and Furniture: A Nibor-D carpet treatment will contaminate the food source of flea larvae and dust mites and will kill them. This application will remove organic food sources and cast skins and force Nibor-D into the carpet fibers to provide a residual to prevent future infestations.

First, clean and thoroughly vacuum all areas to be treated, including surfaces under furniture and beds, and in areas where animals sleep or rest. Remove cushions and vacuum crevices of furniture. Discard vacuum bag after use. Apply solution with an even fan spray at the rate of 1 gallon to every 300-400 ft^2 of carpet surface area. If carpet pile is dense, use a brush or carpet rake in conjunction with the application, to ensure penetration into the carpet pile. Treat crevices and undersides of couches, chairs and pet bedding. Allow furniture to dry before replacing cushions, bedding, pillows, etc. Do not saturate.

When wood floors, tile floors, cracks, crevices and baseboards are treated, wipe excess solution off exposed surfaces with dry cloth or cleaning pad. Concrete and dirt floors can be treated with a light application. Avoid walking on treated surfaces until dry.

Extraction or Steam Carpet Cleaning Machines: Add carpet cleaning detergent to the Nibor-D finished solution if desired. Add the mixed solution into the dispensing tank of the carpet cleaning machine. Apply 1 gallon of mixed solution to every 150-200 ft^2 of carpet area. Thoroughly clean carpet cleaning machine dispensing tank and run water through machine to flush after use.

To Control Mildew and Fungus (except in California): Apply to kill and control mildew and fungus in conjunction with conventional moisture control practices such as repairing leaking structural components or leaking pipes, lowering interior humidity levels and, where possible, providing adequate ventilation. Apply as a spot treatment to affected surfaces, including baseboards and wall areas.

Flies, Darkling Beetles and Hide Beetles (adults and larvae) Control in Bird and Poultry Facilities

First, remove birds. Use equipment designed for this type of application. Apply to structural sidewalls, posts, framing, top plates, into cracks and crevices, around insulation and on other structural components that might harbor beetles. Re-apply application annually, after each grow-out or if facility is washed, sanitized and disinfected.

Dust applications: If birds are in contact with floor or litter: Apply dry product with a spreader directly to the floor or old litter surface at the rate of 1-2 lbs/100 ft^2 of floor area. Apply a band treatment along bird feeder lines. Reapply annually if needed or after each grow-out. If birds are caged and not in contact with the floor or litter: Apply dry product at the rate of 1½-2 lbs/100 ft^2 of surface area. For fly control, apply the dust to the surface of manure piles at the rate of 1½-2 lbs/100 ft^2 of surface area.

Supplemental Liquid applications: Add product at the rate of 1 lb/gallon of water. Apply solution on structural sidewalls, posts, framing, top plates, into cracks and crevices, around insulation and on other structural components that might harbor beetles at the rate of 4 gallons/100 ft^2 of surface area. For fly control, apply a liquid application to the surface of manure piles at the rate of 1½ lbs of product/gallon of water /150 ft^2 of surface area.

Wood Treatment
Product Information

Nibor-D is a water soluble, inorganic borate salt with insecticidal and fungicidal properties that may be used on wood and applied as a liquid solution or powder. Nibor-D may be used as a preventative treatment (before signs of infestation) and for remedial treatment of infested wood. This product may also be used for pre-treatment of wood before or during the construction process.

Nibor-D kills, prevents and controls wood destroying insects and fungi such as, but not limited to, the following organisms:

Subterranean Termites (*Reticulitermes*, *Heterotermes*, *Coptotermes* (Formosan)), **Drywood Termites** (*Kalotermes*, *Incisitermes*), **Dampwood Termites** (*Zootermopsis*),

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Powderpost Beetles (*Lyctinae*, *Bostrichidae*), **Deathwatch and Furniture Beetles** (*Anobiidae*), **Old House Borers, Longhorned Beetles** (*Cerambycidae*), **Carpenter Ants** (*Camponotus*), **Bark and Timber Beetles** (*Scolytidae*), and **Decay Fungi** including white rot, brown rot (i.e., *Poria*) and wet rots.

Nibor-D is recommended for wood and cellulose materials in accordance with the specific treatment methods described herein and is effective for all interior and exterior wood (and wood-foam composite structural components) that will be protected from excessive rain and not in direct contact with the soil. Types of treatable materials include, but are not limited to, decks, fences, steps, sheds, barns and other outbuildings, ties, wool insulation, stumps, utility poles, timber, lumber, logs and plywood. Some etching of treated wood may occur from organisms before they die. Do not apply Nibor-D to wood or cellulose material that has been painted, varnished or sealed. For best results, apply Nibor-D to bare wood. Use soap and water to clean application equipment.

Note: Spraying water on some wood species can mobilize natural wood extractives, raise the grain and leave behind calcium or other deposits. Prior to treating large areas, treat a small area with Nibor-D solution to ensure that you are satisfied with the final aesthetics.

Preparation of Treatment Solutions (In Situ Treatment)

10% Liquid Solution: To prepare solution, add approximately 80% of the required volume of water to the mixing vessel. While stirring, gradually add 1.0 pound of Nibor-D for each gallon of treating solution required. Add remaining water to the solution and stir until the entire product has dissolved.

15% Liquid Solution: Prepare solution as above, but gradually add 1.5 lbs of Nibor-D for each gallon of treatment solution needed. Use this solution as soon as possible and do not store for an extended length of time.

15% Foam: Prepare a 15% liquid solution as described above and also add a surfactant-foaming agent. Generally 1-2 ounces of a foaming agent, added to the 15% liquid solution, produces a dry foam with the desired expansion ratio of approximately 20 to 1 (20 gallons of foam per 1 gallon of liquid solution). The Nibor-D foam should be of a "dry" consistency that adheres to wood surfaces so that run-off is minimized. A "wet" foam may damage wallboard or other building components. Refer to the individual foam equipment manufacturer's manual and the surfactant's label for specific instructions.

Wash and rinse all equipment after each use.

Product Application Instructions

Liquid Application: Use a liquid solution to control wood destroying organisms, and to kill active infestations of termites, powderpost beetles and wood decay fungi. On wood with drier than normal moisture content, apply by brush or spray two applications of a 10% solution to wood surfaces. On wood with normal moisture content, apply by brush or spray one application of a 15% solution to wood surfaces. Application may also be made by drilling and then injecting the solution under pressure into sound wood or into the insect galleries of infested wood.

For remedial control of wood attacking organisms or for the protection of wood against future infestations, either two applications of a 10% liquid solution or one application of a 15% liquid solution are required.

Apply Nibor-D solutions by brush or spray at the rate of 5 gallons of liquid solution per 1000 square feet of wood surface area. Thoroughly wet wood surface area. Application may also be made by drilling and then injecting the liquid solution under pressure into sound wood or until run-off is observed coming from entry/exit holes of infested wood.

Foam Application: Nibor-D may be applied as foam to wood surfaces or injected into wall voids or insect galleries. In wall voids, inject enough dry foam to contact wood surfaces of studs in the wall or the entire desired target area. Apply foam, where possible, to abutting wood surfaces and between wood joints. Apply the foam so that all accessible wood surfaces are covered with foam. Foam can also be injected into insect galleries until run-off is observed.

Dust Application: Apply Nibor-D as a dust to kill and control wood destroying organisms such as termites and carpenter ants by drilling and injecting the powder into galleries, by dusting generously on wood surfaces, or by injecting or dusting into wall voids such as between studs, block voids, box sills, eaves, attics, soffits, etc. Apply to these areas at the rate of 0.5 ounce (12-14 grams) per square foot. Dust can be injected or dusted into utility poles at a rate of 0.25 pound per cubic foot of area to be treated.

Wood Treatment during Construction for Prevention of Wood Destroying Organisms: Spray, foam or dust applications of Nibor-D may be made to wood after framing and roofing are in place and before insulation and drywall are installed. Apply Nibor-D liquid solutions to all accessible surfaces of bare wood at a rate of approximately 5 gallons per 1000 square feet of wood surface area. Do not spray electrical components or other non-wood components. Treat end-cuts of wood by application methods listed above, or by dipping end-cuts for 1-5 minutes in a Nibor-D 10% liquid solution. Apply powder at the rate of 0.5 ounce (12-14 grams) per square foot to wall stud areas, box sills, roof eaves, attics and soffits.

Protect newly treated wood from excessive rain or moisture.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

Pesticide Storage: Store in a dry place. Do not store where children or animals may gain access. **Pesticide Disposal:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. **Container Management:** Non-refillable container; do not reuse or refill this container. Completely empty container by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment; then offer for recycling, if available; or dispose of in a sanitary landfill; or, if allowed by state and local authorities, by incineration.

Warranty Disclaimer

Manufacturer warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. To the extent not prohibited by applicable law, **MANUFACTURER MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.**

Inherent Risks of Use

The directions for use of this product are believed to be adequate and must be carefully followed. It is impossible to eliminate all risks associated with use of this product. Lack of performance or other unintended consequences may result because of such factors as use of the product contrary to label instructions, abnormal conditions, the presence of other materials, climatic

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conditions or the manner of use/application, all of which are beyond the control of the Manufacturer. The buyer/user assumes all such risks.

Limitation of Remedies

To the extent not prohibited by applicable law, the exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability or other legal theories) shall be limited to, at Manufacturer's election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used.

To the extent not prohibited by applicable law: a) Manufacturer shall not be liable for losses or damages resulting from handling or use of this product unless Manufacturer is promptly notified of such loss or damage in writing; and b) **IN NO CASE SHALL MANUFACTURER BE LIABLE FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES OR LOSSES, INCLUDING WITHOUT LIMIT, HEALTH RELATED DAMAGES OR INJURIES.**

The terms of this ***Warranty Disclaimer*** and ***Limitation of Remedies*** cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Manufacturer or the seller is authorized to vary or exceed the terms of this ***Warranty Disclaimer*** or ***Limitation of Remedies*** in any manner.

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Nisus Corporation • 100 Nisus Drive • Rockford, TN USA 37853
(800) 264-0870

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Made in the U.S.A.

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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