

# BORA-CARE®

**Opportunity knocks on wood.**

GREEN SOLUTION TO WOOD DESTROYING ORGANISMS.



Bora-Care is sprayed directly onto raw wood, concrete and foundation penetrations by pest management professionals. Its patented formula penetrates into the wood, providing long-term residual protection against subterranean, Formosa and drywood termites; wood destroying beetles, carpenter ants and decay fungi.



Bora-Care is used for new construction primary termite pretreatments, whole house treatments and remedial treatments.

- Kills and prevents termites and other wood destroying organisms.
- Eliminates wood as a food source and creates a barrier termites cannot build shelter tubes across.
- Prevents termites from tubing across concrete.
- Delivers long-term residual benefit that protects wood for years.
- Has low mammalian toxicity – its active ingredient is a borate mineral salt.
- Emits no VOCs (volatile organic compounds).
- Has minimal risk of chemical run-off.
- Won the Overall Grand Prize, Best of Show award from Green Builder® magazine at the 2006 National Green Building Show.
- Qualifies builders for LEED® for Homes points as well as points in many other green building programs.
- Has more than 12 years of proven product-specific efficacy testing and more than 25 years of successful field use.
- Is the only borate-based termiticide that is EPA-registered as a primary perimeter termite pretreatment for new construction with its own product-specific field efficacy studies.
- Is HUD-allowed, listed for use by the 2006 International Residential Code and meets the end-cut requirements of building codes and the American Wood Protection Association (AWPA).

Visit [www.nisuscop.com](http://www.nisuscop.com) for the complete line of green products.

100 Nisus Drive ■ Rockford, TN 37853 ■ (800) 264-0870 ■ [www.nisuscop.com](http://www.nisuscop.com)





# BORA-CARE®

## Termiticide, Insecticide and Fungicide Concentrate

### For the Prevention and Control of:

- Subterranean Termites • Formosan Termites • Drywood Termites • Carpenter Ants
- Listed Wood Destroying Beetles • Fungi (Rot) • Algae

For use in and around Residential, Institutional and Commercial Structures including Homes, Apartments, Garages, Museums, Public and Private Institutions, Schools, Hotels, Hospitals, Kennels, Stables, Farm Buildings, Trucks, Trailers, Warehouses and Non-Food Areas of Supermarkets, Restaurants and Food Processing Plants.

#### Active Ingredient:

Disodium Octaborate Tetrahydrate (CAS No. 12280-03-4).. 40%

Other Ingredients..... 60%

Total..... 100%

EPA Reg. No. 64405-1

EPA Est. 64405-TN-1

U.S. Patent Nos. 5,645,828; 7,597,902

## Keep Out of Reach of Children CAUTION

### PRECAUTIONARY STATEMENTS

#### Hazards to Humans & Domestic Animals

**WEAR:** Long-sleeved shirt & long pants, socks, shoes and chemical-resistant gloves (such as Barrier Laminate, Butyl Rubber, Nitrile Rubber, Neoprene Rubber, Polyvinyl Chloride (PVC), Viton or others listed in category C on an EPA -chemical-resistance category selection chart).

#### Environmental Hazards

*(For product in containers less than 5 gallons)*

This pesticide is toxic to fish and wildlife. Do not apply directly to water, to intertidal 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.

*(For product in containers 5 gallons or greater)*

This pesticide is toxic to fish and wildlife. Do not apply directly to water, to intertidal 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. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your state water board or regional office of the EPA.

### DIRECTIONS FOR USE

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

#### Notice

Read and understand the entire label before using. Use only according to label directions. Before buying or using this product, read **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 **Warranty Disclaimer** and **Limitation of Remedies**.

#### Use Restrictions

Do not use in edible product areas of food processing plants or on countertops and other surfaces where food is prepared. Do not use in serving areas where food is exposed. Do not contaminate feed, water or food. Do not enter or allow others to enter or occupy treated areas until spray has been absorbed into the wood. Treated areas must not be occupied during application.

#### Phytotoxicity

This product may be phytotoxic to plants. When treating around the exterior of structures, cover and protect shrubbery and plants that may be potentially exposed to this product, when applied in accordance with the label directions.

### Personal Protective Equipment (PPE)

Some materials that are chemical-resistant to this product are barrier laminate; butyl, nitrile, neoprene and natural rubbers  $\geq$  14 mils; polyethylene; polyvinyl chloride; and viton  $\geq$  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 Bora-Care solutions 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.

### 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.

### I. Mixing Instructions

Bora-Care is a concentrate that **must** be diluted with clean water before use. The use of warm or hot water, if available, and an impeller-type mixer that can be used with an electric drill aids the dilution process.

**A. Hand Sprayers:** Mix in a clean container and stir the solution until completely uniform. Always mix in a separate container then add the solution to a spray tank. Mixing Bora-Care directly in a spray tank can block hoses and nozzles.

**B. Hand Volume Pumping Systems:** Add all of the dilution water to tank, start recirculator and slowly add Bora-Care concentrate. Mix until uniform.

Use 1:1, 2:1 and 3:1 Bora-Care solutions within 24 hours after mixing; 5:1 solutions will remain stable for up to 30 days. Do not leave unused solution under pressure or in tank overnight. Clean and/or flush equipment and lines with water after use.

Bora-Care solutions can be mixed with pyrethrins at 0.3% for carpenter ants and other listed insects, or with Mold-Care<sup>®</sup> Moldicide Concentrate (EPA Reg. No. 6836-212-64405) for mold, in accordance with the most restrictive of label limitations and precautions. Do not exceed label dosage rates. This product cannot be mixed with any product containing a label prohibition against such mixing.

For tracking purposes (to make it easier to see where Bora-Care solutions have been applied) an appropriate marker dye or pigment may be added as part of the diluent to the Bora-Care solution. Refer to the dye or pigment product label for the recommended amount to add to the Bora-Care solution. Bora-Care concentrate may also be diluted with approved water-based water repellants or coatings at dilution ratios listed on the repellant/coating label provided the ratios are greater than 1 part water to 1 part Bora-Care.

Use soap and water to clean up tools.

## II. Dilution Ratios by Volume

**Table A**

Target Pests	Mixing Ratios Water plus Bora-Care	Application Notes
Subterranean and Formosan Termites	1:1 or 2:1	For remedial and preventative treatments apply a 1:1 dilution ratio for all treatments by spray, injection, brush or roller. The 2:1 dilution ratio may be used for foaming or, for application into inaccessible wall voids, may be used in a misting machine.
Drywood Termites	1:1, 2:1 or 5:1	For remedial treatment apply the 1:1 or 2:1 by foam or by misting using a misting machine. Use the 5:1 dilution ratio for prevention.
Anobiid and Lyctid Powderpost Beetles	1:1, 2:1 or 5:1	For all remedial treatments use a 1:1 dilution ratio. Logs > 4" require a 1:1 dilution ratio for prevention. Use a 2:1 dilution ratio for treating hardwood floors. Use the 5:1 dilution ratio for prevention.
Old House Borers, Longhorn Beetles and Ambrosia Beetles	1:1 or 5:1	Use the 1:1 dilution ratio for remedial and preventative treatment in wood > 4" thick. Use the 5:1 dilution ratio for prevention in wood less than 4" thick.
Carpenter Ants	1:1, 2:1 or 5:1	Use the 1:1 dilution ratio for all remedial treatments. Use the 2:1 dilution ratio for remedial treatments applied by foam or with a misting machine (or applicator). Use the 5:1 dilution ratio for prevention.
Fungi (Rot) and Algae	1:1, 3:1 or 5:1	For remedial control use a 1:1 dilution ratio on wood members 4" thick or greater. Use a 3:1 dilution ratio for wood less than 4" in thickness. For prevention use a 5:1 dilution ratio.

**Table B**

Materials to Be Treated	Mixing Ratios Water plus Bora-Care	Application Notes
Logs, Large Beams, Timber and Dimensional Lumber > 4"	See target pests in Table A	All spray applications for insects and fungi (rot).
Decking, Fences and Plywood	See target pests in Table A	Use on wood members 2" or less in thickness.
Logs, Large Beams and Dimensional Lumber	See target pests in Table A	Use the 5:1 dilution ratio only for dip treatment for insect prevention. May be used in conjunction with other fungicides for fungi (rot) control.
Cellulosic Drywall and Insulation	1:1, 3:1 or 5:1	Use the 3:1 dilution ratio for active remedial treatment of dry rot. Use the 5:1 dilution ratio for prevention of dry rot. May be used in conjunction with other fungicides.

**Table C**

Parts Water	Part Bora-Care	% Disodium Octaborate Tetrahydrate
1	to 1	23%
2	to 1	16%
3	to 1	13%
5	to 1	9%

## III. General Information

Bora-Care is not intended for application to soil; it is not a soil termiticide. **Do not use to directly treat soil. When active infestations exist, get a professional inspection. Prior to using this product, consult with your state regulatory agency to see if additional qualifications are required to apply this product.**

Bora-Care contains an inorganic borate salt, soluble in water, with insecticidal and fungicidal properties effective

against wood destroying organisms, including the target pests listed below. This product may be used as a remedial treatment of infested wood and as a long-term protective or preventive treatment (before signs of infestations are observed) of wood in existing or new construction. Bora-Care solution is recommended for protection of all interior and exterior wood (including wood-foam composite structural components). Treatment is long lasting provided the treated material is not exposed to rain,

continuous water or in direct contact with the ground. The active ingredient in Bora-Care is an inorganic salt and once in place will not decompose or volatilize out of the wood.

Subterranean Termites: *Reticulitermes*, *Heterotermes*

Formosan Termites: *Coptotermes*

Drywood Termites: *Kaloterms*, *Incisitermes*

Dampwood Termites: *Zootermopsis*, *Neotermes*

Powderpost Beetles: *Lyctidae*, *Bostrichidae*

Anobiid Beetles: *Anobiidae*

Old House Borers, Longhorn Beetles: *Cerambycidae*,  
*Hylotrupes*

Ambrosia Beetles: *Platypodidae*, *Scolytidae*

Carpenter Ants: *Camponotus*

Brown Rot (including dry rot), White Rot, Wood Decay

Bora-Care solutions may be used on all non-food contact surface cellulosic materials including wood, plywood, particleboard, paper, oriented strand board (OSB), cardboard (non-food packaging material), wood composite structural components, concrete, block, brick, metals, PVC plumbing pipes and other non-cellulosic materials found in structures. Apply Bora-Care solutions only to bare wood, plywood, particleboard and other cellulosic materials where an intact water-repellent barrier, such as paint, stain or sealer, is not present.

When spraying overhead interior areas of homes, apartment buildings, etc., cover or protect all surfaces below the areas being sprayed with plastic sheeting or other material and dispose if contamination from dripping occurs. Do not apply in food serving areas while food is exposed. Cover all food contact and preparation surfaces prior to treatment. After treatment, thoroughly clean all food contact surfaces with a water/detergent solution followed with a potable water rinse. Remove all pets; turn off fish aquarium pumps and cover.

In new construction applications for the prevention of subterranean termites, structural wood is defined as: only wood needed for the basic building structure as found in the "dried-in" stage of construction, including wood in direct contact with foundations, interior and exterior wall sill plates, wood studs, wood or cellulosic sheathing, floor joists and sub-flooring.

In structures where a soil treatment/barrier termiticide has been applied and/or termite bait system installed, apply Bora-Care solution as an additional treatment to protect wood from subterranean termites that may have penetrated the chemical gaps occurring within the termiticide-treated soil or have bypassed the bait/monitor systems.

As a remedial treatment, Bora-Care solution will both eliminate and prevent infestations of Formosan, native subterranean termites, wood boring beetles, carpenter ants and decay fungi. It may also be used as a supplement or alternative to fumigation to provide long-term residual control.

Older wood boring beetle larvae and especially pupae (particularly Old House Borers) already present in the wood at the time of treatment may occasionally emerge

sometime after treatment. This is because they are no longer feeding on the wood. This will not occur frequently enough to cause structural damage to any wooden member and reinfestation is prevented.

#### **IV. Remedial Wooden Structure Treatment for the Control of Subterranean, Formosan, Drywood and Dampwood Termites, Carpenter Ants, Old House Borers, Powderpost and Listed Wood Boring Beetles and Fungi (Rot)**

**A. Infested wood:** Spray and/or inject Bora-Care solution into beetle holes, termite and carpenter ant galleries and decay pockets. Apply 1 coat of Bora-Care solution to the point of surface saturation to all infested and -susceptible wood, paying particular attention to infested areas. Apply 2 coats of Bora-Care solution to those wood members with only 1 or 2 exposed sides. For quicker control, apply an additional coat to heavily infested areas. Allow first application to dry by waiting at least 20 minutes between applications. For specific pests to be controlled refer to **Table A** for applicable mixing instructions.

In cases where the infestation is not accessible from the surface, drill small holes into the wood to gain access to the infested area. Inject enough solution to completely flood galleries or voids. Adjacent intact wood may be treated by pressure injecting Bora-Care solution into holes drilled into the wood at 8- to 10-inch intervals. Inject at 40 psi for 4 to 6 seconds per hole.

For treating infested wall voids, refer to Sections IV.E. and F.

**B. Basements and crawl spaces:** Apply 1 coat of diluted Bora-Care solution to the point of surface saturation to all accessible surfaces including sill plates, piers, girders, subfloors, floor joists and any wood exposed to vertical access above ground. On wood where access is limited to 1 or 2 sides of wood members, such as sills and plates on foundation walls, apply 2 coats of Bora-Care solution. Allow first application to dry by waiting at least 20 minutes between applications. One gallon of solution will treat 200 square feet of floor area (subfloor, floor joists, header and sill plates) or 50 linear feet of 8 foot high walls.

**C. Buildings on concrete slabs:** Apply Bora-Care solution into wall voids by foaming or Apply Bora-Care solution into wall voids by foaming (See Section IV.F.) or misting. Locate each stud and drill a small hole through the wall covering to gain access to the infested area. Drill holes every 18-24 inches adjacent to the side of each stud and inject at least 1/3 fluid ounce of Bora-Care solution per hole. Drill at least one hole per stud bay near the floor to treat the base plate in each void. Treat entire wall area as opposed to single stud bays to completely include the infested area within the treatment zone. Cover at least 6 inches of concrete slab surface area out from the penetration site.

**D. Wood flooring:** Treat by spray, brush or roller application. Prior to application, remove any existing finish by complete coarse sanding or stripping. Apply a 2:1 Bora-Care solution at a rate of approximately 1 gallon of

solution per 500 square feet of floor surface. For treating infestations of subterranean or Formosan termites, 2 coats may be required, waiting at least 1 hour between applications. Allow floor to completely dry (typically 48 to 72 hours). Moisture content must be 16% or less before applying final finish. Bora-Care solution applications may raise the grain of the wood and an additional **light** sanding may be necessary before applying a new finish. The Bora-Care solution is compatible with most floor coatings; always test a small section of treated floor with the new finish and check for appropriate adhesion prior to coating the entire floor.

**Note:** If surface is tacky or residue is evident after 72 hours of drying time, wash affected area with clean water and a mop, cloth or sponge, rinsing frequently. Allow surface to dry prior to final **light** sanding and application of finish coat.

**E. Inaccessible wall voids, wall studs and wood members:** Apply by foaming (See Section IV.F.) or misting into voids and channels of damaged or suspected infested wood and/or through small holes drilled into walls and baseboard areas. Space holes no more than 24" apart along each member to be treated and at least 1 hole must be drilled between each wall stud when treating base plates. Use sufficient amount of solution to cover all areas to the point of surface saturation.

**Note:** Existing insulation may interfere with distribution of the Bora-Care solution. If necessary, move or displace insulation during or prior to treatment.

**F. Foam application:** Apply Bora-Care solution to bare wood surfaces and void areas as a foam by mixing 2 parts water with 1 part Bora-Care (2:1) and adding 3 to 8 ounces of foaming agent per gallon of mixed solution. Foam will take approximately 1 hour to return to liquid state and soak into bare wood. Apply foamed Bora-Care solution to void spaces at a 1:20 to 1:30 foam ratio (1 gallon of mixed solution expanded with foaming agent to produce 20 to 30 gallons of foam). Apply enough foam to fill void and contact all wood surfaces in the void space.

**G. Foam insulation:** Apply by injecting a 1:1 Bora-Care solution into the infested area and/or by low pressure surface spraying at a rate of 1 gallon per 300 to 400 square feet. Bora-Care solution may also be mixed with approved topically-applied insulation products. To protect insulation from infestation, pre-mix the appropriate amount of Bora-Care solution with foaming materials during or prior to installation that will achieve a 0.5-1.5% by weight retention.

**Note:** Some types of foam insulation, such as polyisocyanurate and extruded polystyrene, have closed cell structures that do not allow significant penetration from surface application. Inject and surface spray these types of insulation.

**H. For remedial treatments:** Apply a supplemental treatment of Bora-Care solution to concrete, block or brick on the interior of crawlspace and basement foundations to prevent shelter tubing by subterranean termites. Apply a 1:1 Bora-Care solution at the rate of 1 gallon to 400 square

feet of surface area. In crawlspaces, apply solution 2 feet (24 inches) up from the ground on interior wall surfaces. In unfinished basements with bare concrete slabs, apply the 1:1 Bora-Care solution 2 feet up from the concrete slab on interior foundation walls. In addition to the wall treatment, extend application up to 6 inches away from foundation walls onto the horizontal surface of the bare concrete slab. Treat bath trap areas in concrete slab construction, after obtaining access to the area, by evenly applying 8 ounces of the 1:1 Bora-Care solution into the traps out at least 1 foot (12 inches) in all directions from the edge of the trap area. Treat other termite access areas (such as plumbing penetrations, expansion joints and abutting slabs) by applying the 1:1 Bora-Care solution into the penetration, out at least 1 foot in all directions from the edge of the penetration area. Also treat protruding utilities and adjacent wood to a height of 2 feet.

## **V. Preventative Treatment of Wooden Structures for Formosan, Drywood and Dampwood Termites, Carpenter Ants, Old House Borers, Powderpost and other Wood Boring Beetles, and Fungi (Rot)**

**Note:** Bora-Care is not intended for application to soil.

Bora-Care solution provides only limited and temporary protection of wood in contact with the ground (see specific instructions) and is not a substitute for products registered for protection of wood in contact with the ground. Bora-Care solution may be applied as a treatment to protect wood from Formosan, drywood and dampwood termites, carpenter ants, old house borers, powderpost and listed wood boring beetles and wood decay fungi.

Apply when access to wooden structural components is optimized such as at the "dried-in" stage when sheathing and roofing are in place, yet before installation of insulation, wiring, plumbing and other mechanical components.

For framed wood surfaces above ground, apply to the point of surface saturation 1 coat of a 1:1 Bora-Care solution for subterranean termites and Formosan termites as described in Section VI. For treatment of new log structures see Section IX. Treat remainder of structural wood with a 5:1 Bora-Care solution. Concentrate application in areas susceptible to attack, to include all sills, plates, floor joists, piers, girders and subfloors. Treat structural wood in all plumbing, electrical and ductwork areas where they penetrate walls and/or floors. Treat all structural wood base plates and studs on interior and exterior walls, especially those surrounding any high moisture areas such as bathrooms, kitchens and laundry rooms. For buildings built on concrete slabs, treat all structural wood in contact with the concrete slab, all interior and exterior wall studs and wall sheathing material. In attics, treat all structural wood including ceiling joists, trusses, top plates, rafters and roof decking. Treat all structural wood sill plates and structural wood contacting garages and porches.

In areas where access is limited to 1 or 2 sides of a wood member, including exterior wall base plates and any

married studs, apply 2 coats of Bora-Care solution to the exposed surfaces. Allow first application to dry by waiting at least 20 minutes between applications.

Treat all exterior wood including siding, facias, soffits, eaves, roofing, porches, decks and railings.

## **VI. Preventative Treatments and Pretreatments for Subterranean Termites (Crawl Space, Basement and Slab)**

**Note:** This treatment serves as a primary treatment for the control of subterranean termites. This product must be applied with a 1:1 Bora-Care solution.

In new construction applications for the prevention of subterranean termites, structural wood is defined as only wood needed for the basic building structure as found in the “dried-in” stage of construction, including wood in direct contact with foundations, interior and exterior wall sill plates, wood studs, wood or cellulosic sheathing, floor joists and sub-flooring.

Apply when access to wooden structural components is optimized and when no further framing modifications will be made, such as after final framing inspection. If treatment is carried out prior to framing inspection, a second visit is required to ensure full treatment is still intact.

In areas where access is limited to 1 or 2 sides of a wood member, including exterior wall base plates and any married studs, apply 2 coats of Bora-Care solution to the exposed surfaces. Allow first application to dry by waiting at least 20 minutes between applications. s

**A. Buildings on Crawl Spaces and Basements:** Apply 1 coat of a 1:1 Bora-Care solution in a 2-foot-wide uninterrupted band to the point of surface saturation to all structural wood surfaces in crawl spaces and basements, to include all sills, plates, floor joists, piers, girders and subfloors as well as structural wood exposed to direct vertical access from the soil. To prevent termite shelter tubes on crawlspace walls, apply a 1:1 Bora-Care solution to crawlspace concrete or block walls in a 2-foot band up from the ground on interior wall surfaces. Apply at the rate of 1 gallon to 400 square feet of surface area. Treat a 2-foot band around construction materials and structural wood adjacent to plumbing, electrical conduit and ducts where they penetrate subfloors, if they provide a direct vertical access from the soil. Treat all structural wood, including wall studs and sills, in finished-out basements where structural wood framing is immediately adjacent to the exterior foundation walls. Spray the concrete slab surface a minimum of 2 up to a maximum of 8 inches. To prevent termite shelter tubes on basement walls, spray all interior concrete or block foundation walls with a 2-foot band up from the concrete slab area. Apply the 1:1 Bora-Care solution at the rate of 1 gallon per 400 square feet of concrete foundation wall area.

**On structural wood where access is limited to 1 or 2 sides of wood members such as sills plates and headers on foundation walls, married studs or wrapped sheathing, apply 2 coats of Bora-Care**

**solution.** Allow first application to dry by waiting at least 20 minutes between applications. If accessible, treat the exterior of structural wood sill areas around the entire perimeter of the structure with a 2-foot-wide band of a 1:1 Bora-Care solution beginning with the sill area and extending upwards onto the sheathing material. On multiple story structures, treat only the first story above the masonry foundation level. Coated or painted structural wood may be treated by pressure injecting Bora-Care solution into holes drilled into the wood at 8- to 10-inch intervals. Inject at 40 psi for 4 to 6 seconds per hole.

**B. Buildings on concrete slabs:** Apply 1 coat of a 1:1 Bora-Care solution to all wood, metal and/or non-cellulosic base plates and the bottom 2 feet of all wood, metal and/or non-cellulosic studs on all exterior and interior walls in contact with the concrete slab. Treat at the rate of 1 gallon of solution to 200 linear feet of stud walls. Treat all wood in plumbing walls, bath traps and any wood adjacent to plumbing, electrical conduit and duct penetrations to provide a minimum 2-foot-wide barrier of treatment between the bottom of the penetration site and the balance of the structure. **In areas where access is limited to 1 or 2 sides of a structural wood member, such as sills and plates on foundation walls, married studs or wrapped sheathing, apply 2 coats of Bora-Care solution to the exposed surfaces.** Allow first application to dry by waiting at least 20 minutes between applications. When spraying base plates, also treat the concrete slab a minimum of 2 inches to a maximum of 8 inches out from plates. Treat the concrete slab where any visible cracks may be occurring, extending treatment 8 to 12 inches out on each side of the concrete slab crack. Treat all penetrations (such as plumbing, expansion joints and abutting concrete slabs) by spraying the 1:1 Bora-Care solution 2 feet high and extending application to cover at least 6 inches of concrete slab out from penetration site. Concrete, cinder block or non-cellulosic exterior walls must be treated with a 1:1 Bora-Care solution 2 feet on the interior side of wall surface up from the concrete slab. This treatment must be applied as a continuous 2-foot barrier to all interior surfaces of all exterior walls. Treat at the rate of 1 gallon of a 1:1 Bora-Care solution to 400 square feet of surface area. Do not use for new construction treatments if the total linear footage of the cellulosic base plates is less than 60% of the total linear footage of all base plates in the structure to include exterior and interior walls. In new construction with 60% or more lineal footage of base plates, but without continuous wood on every exterior wall, the Bora-Care treatment must be installed to all other exterior structural construction materials, including brick or block, to a height of 2 feet and extended out onto the slab a minimum of 2 to a maximum of 8 inches.

**C. Foam insulation:** Treat with low-pressure surface spraying or injecting a 1:1 Bora-Care solution to the infested area at the rate of one 1 gallon per 300 to 400 square feet.

**Note:** Some types of foam insulation, such as polyisocyanurate and extruded polystyrene, have closed cell structures that do not allow significant penetration from



surface application. Inject and surface spray these types of insulation.

## **VII. Preventative Treatment for Drywood Termites and Powderpost Beetles**

Apply 1 coat of a 5:1 Bora-Care solution to the point of surface saturation to all structural wood surfaces using a brush, spray or mist. Apply 2 coats of Bora-Care solution to those surfaces where access is limited to 1 or 2 sides of structural wood members. Allow first application to dry by waiting at least 20 minutes between applications.

## **VIII. Treatment of Exterior Wood Surfaces Less Than Two Inches Thick such as Decks, Sheds and Fences**

Apply only to bare wood or to wood surfaces where an intact water repellent or finish is not present. Remove paint or finish prior to application. Apply 1 coat of Bora-Care solution to the point of surface saturation to all wood surfaces. Apply 2 coats of Bora-Care solution to heavily infested areas and to those surfaces where access is limited to 1 or 2 sides of wood members. Allow first application to dry by waiting at least 20 minutes between applications. Do not apply in rain or snow. Do not expose treated exterior wood surfaces to rain or snow for at least 48 hours after treatment. If inclement weather is expected, protect exterior treated surfaces with a plastic tarp.

For wood in contact with the ground or soil, see Section XI.

**A. Finishing and Maintaining Treated Surfaces:** For longer performance, exterior wood surfaces that have been treated with Bora-Care solution will require a topcoating with a water-resistant finish such as paint or exterior stain. Apply the finish or topcoat within 6 weeks of treatment. It is important to allow Bora-Care-treated wood to completely dry (at least 48 hours) before applying any protective topcoat. Coat a small section of treated wood with the finish to be used and check for compatibility prior to complete application.

## **IX. Treatment of Log Structures, Timbers, Beams, Pilings and Exterior Wood Members Two or More Inches Thick**

Apply only to bare wood or to wood surfaces where an intact water repellent or other finish is not present. Remove paint or finish prior to application. Prior to treatment clean interior, unfinished surfaces that have accumulated dirt or cooking oils with a strong detergent. Apply a 1:1 Bora-Care solution to the point of surface saturation to all interior and exterior wood surfaces. Apply 2 coats of Bora-Care solution to log ends, notches, corners and sill logs. Wait at least 1 hour before reapplication.

Actual number of coats necessary to meet minimum requirements will depend upon actual wood size, surface porosity and number of sides accessible for treatment. Refer to application chart for the minimum amount of Bora-Care solution needed to treat various sized logs or beams. Typically, 2 coats of solution are required to treat round logs 10" or greater in diameter and rectangular logs larger than 6" x 12". Wait at least 1 hour before reapplication. Do not apply in rain or snow. Do not expose

treated exterior wood surfaces to rain or snow for at least 48 hours after treatment. If inclement weather is expected, protect exterior treated surfaces with a plastic tarp.

**A. Finishing and Maintaining Treated Surfaces:** For long-term protection, exterior wood surfaces that have been treated with Bora-Care solution will require a topcoating with a water-resistant finish, paint or exterior stain. Apply the finish or topcoat within 6 weeks of treatment. It is important to allow Bora-Care-treated wood to completely dry (at least 48 hours) before applying any protective topcoat. Coat a small section of treated wood with the finish to be used and check for compatibility prior to complete application.

## **X. Dip Treating Logs and Lumber**

Prepare a 5:1 Bora-Care dip treating solution. This will result in a stable solution containing 9% active ingredient. Sticker bundled wood to ensure the solution covers all wood surfaces. Submerge logs and/or lumber in the solution for at least 1 minute or until all entrapped air has escaped. Protect treated wood from rain or snow for at least 24 hours after treatment.

## **XI. Treatment of Wood In Contact With the Ground**

A Bora-Care solution treatment to wood in contact with the ground or soil has a limited lifespan and will require periodic reapplication. Protection may be extended with the use of a 40% disodium octaborate tetrahydrate (or borate) gel product.

## **XII. Prevention and Remedial Control of Algae for Cellulosic Building Components**

Apply Bora-Care solution for the prevention and remedial control of algae to cellulosic building components (drywall, insulation) in new construction and existing structures and where an intact water repellent barrier such as paint, stain or sealer is not present. Apply Bora-Care solution at the rate of 1 gallon of solution per 400 square feet of surface area. Apply only to the back paper side of drywall and to cellulose insulation. In areas where drywall has been installed and insulation is enclosed, apply Bora-Care solution using a misting machine (or applicator) applying sufficient solution to cover surfaces at the rate of 1 gallon per 400 square feet. Refer to **Tables A and B** for mixing ratios for preventative and remedial algae treatments.

The Bora-Care solution can also be applied to exterior stone and concrete walkways and walls for the prevention and control of algae growth. Apply a 5:1 Bora-Care solution at the rate of 1 gallon of solution per 400 square feet of walkway or wall surface area. Do not spray abutting grass or plantings.

## **XIII. General Pest Control Applications**

The application of Bora-Care solution to the surface of wood in new construction or to wood surfaces inside wall void areas in existing structures helps to prevent the establishment of cockroach, ant (except Fire, Harvester and Pharaoh ants), silverfish, earwig, boxelder bug, millipede and cricket infestations that come in direct contact with these treated areas. Apply 1 gallon of

Bora-Care solution per 400 square feet of surface area or refer to **Tables A and B** when applying as a surface application.

#### **XIV. Bora-Care Total Wood Preservative**

Bora-Care is a wood preservative for protection and treatment of wood against brown rot, white rot, fungi (rot) and wood destroying insects including beetles, termites and carpenter ants. Treatment is permanent provided the treated material is not exposed to rain, moisture or ground contact.

**A. General Information:** Bora-Care is a concentrated mixture of sodium borate with additives that facilitate rapid penetration of wood, regardless of moisture content. It is designed for preventative and/or remedial treatment of wood in both new and existing structures against fungi (rot) and wood boring insects including:

Subterranean Termites (*Reticulitermes*, *Heterotermes*,  
*Coptotermes*)

Dampwood Termites (*Zootermopsis*)

Drywood Termites (*Kaloterme*s, *Incisitermes*)

Powderpost Beetles (*Lyctidae*, *Bostrichidae*)

Anobiid Beetles (*Anobiidae*)

Old House Borers, Longhorn Beetles (*Cerambycidae*)

Carpenter Ants (*Camponotus*)

**B. Surface Preparation:** Apply only to bare wood or to wood surfaces where an intact water repellent or other finish is not present. Remove any previous finishes or water repellents before application the Bora-Care solution. Surfaces must be free of dirt and other contaminates. Prior to treatment, clean with a strong detergent all interior, unfinished surfaces that are to be treated and that have accumulated dirt or cooking oils. If finished appearance is a concern, prior to application of Bora-Care solution, remove any mold or mildew with an appropriate wood cleaner followed by thorough surface rinsing.

**C. Application Instructions:** Do not apply in rain or snow. Do not expose exterior wood surfaces to rain or snow for at least 48 hours after treatment. If inclement weather is expected, protect exterior treated surfaces with a plastic tarp.

##### **1. Treatment of Dimensional Lumber, Plywood and Exterior Wood Surfaces (Decks, Sheds, Siding, etc.):**

To all wood surfaces apply to the point of surface saturation 1 coat of: a 1:1 Bora-Care solution for remedial control of wood-infesting insects; a 2:1 Bora-Care solution foam or mist; a 3:1 Bora-Care solution for remedial control of fungi (rot); or a 5:1 Bora-Care solution for insect and fungi (rot) prevention. Apply 2 coats of Bora-Care solution to heavily infested areas and to those surfaces where access is limited to 1 or 2 sides of wood members. Allow first application to dry by waiting at least 20 minutes between applications.

##### **2. Treatment of Logs, Timbers and Large Beams:**

Apply to the point of runoff by spray or brush a 1:1 Bora-Care solution to all interior and exterior wood surfaces. Refer to application chart for minimum amount of Bora-Care solution to treat various sized logs or beams. Typically, 2 coats of solution will be required to

treat round logs 10" or greater in diameter and rectangular logs larger than 6" x 12". Wait at least 1 hour between applications. Also apply 2 coats of Bora-Care solution to log ends, notches, corners and sill logs. Actual number of coats necessary to meet the minimum requirements will depend upon actual wood size, surface porosity and number of sides accessible for treatment.

**3. Dip Treating Logs and Lumber:** Prepare a 5:1 Bora-Care dip treating solution. This will result in a stable solution containing 9% active ingredient. Sticker bundled wood to ensure the solution covers all wood surfaces. Submerge logs and/or lumber in the solution for at least 1 minute or until all entrapped air has escaped.

##### **D. Finishing and Maintaining Exterior-Treated Surfaces:**

For long-term protection, exterior wood surfaces that have been treated with Bora-Care solution require a topcoating with a water-resistant finish such as paint or exterior stain. Apply the finish or topcoat within 6 weeks of treatment. It is important to allow Bora-Care-treated wood to completely dry (at least 48 hours) before applying any protective topcoat. Coat a small section of treated wood with the finish to be used and check for compatibility prior to complete application. Interior surfaces do not require topcoating except in situations involving repeated moisture contact or high humidity (shower stalls, bath houses, saunas, etc.).

**E. Retention Rates:** One gallon of Bora-Care concentrate (2 gallons of Bora-Care solution as applied) will treat 800 board feet of wood to a minimum retention level of 0.084 pounds per cubic foot boric acid equivalent (BAE). Since the active ingredient penetrates throughout the wood being treated, calculate the amount of Bora-Care solution needed on the volume of wood being treated, not just the surface area. Use the following formulas to calculate the required amount of Bora-Care solution:

##### **For Dimensional Lumber**

**(2 x 4, 2 x 6, 2 x 12, etc.)**

Material thickness (inches) x material width (inches)  
x material length (feet) divided by 12 = Board Feet

##### **For Log Homes**

Log height (inches) x log thickness (inches)  
x perimeter (feet)

x number of courses divided by 12 = Board Feet

(For round logs use the average diameter for both height and thickness measurements)

##### **For Siding and Paneling**

One gallon of Bora-Care concentrate (2 gallons of solution) will treat 800 sq. ft. of 1" thick wood by spraying only one side. If siding or paneling is 1/2" thick, 1 gallon of Bora-Care concentrate (2 gallons solution) treats 1,600 sq. ft.

## XV. Application Rates

**Table A – Dimensional Lumber**

Lumber Size (Inches)	1 Gallon of Diluted Bora-Care Will Treat Up To	Minimum Amount of Diluted Bora-Care To Treat 1000 Lineal Feet
1 x 4	1,200 Lineal Feet	0.8 Gal.
1 x 12	400	2.6
2 x 4	600	1.6
2 x 6	400	2.6
2 x 8	308	3.2
2 x 10	240	4.2
2 x 12	200	5.0
4 x 4	300	3.4
4 x 6	200	5.0
4 x 8	150	6.8
4 x 12	100	10.0
6 x 6	133	7.6
6 x 8	100	10.0
6 x 10	80	12.6
6 x 12	68	15.0

**Table B – Panels, Siding and Plywood**  
(1:1 or 2:1 mixing ratio)

Thickness (Inches)	1 Gallon of Diluted Bora-Care Will Treat Up To	Minimum Amount of Diluted Bora-Care To Treat 1000 Square Feet
1/4	1,600 sq. ft.	0.6 Gal.
3/8	1,067	1.0
1/2	800	1.2
3/4	533	1.8
1	400	2.6

**Table C – Round Logs**  
(only the 1:1 mixing ratio)

Diameter (Inches)	1 Gallon of Diluted Bora-Care Will Treat Up To	Minimum Amount of Diluted Bora-Care To Treat 1000 Lineal Feet
6	167 Lineal Feet	6.0 Gal.
8	96	10.4
10	61	16.4
12	43	23.4

**Note:** The numbers listed above are based on an application rate of one gallon of Bora-Care solution to 400 board feet of wood.

## XVI. Bora-Care Solution to Control Annosus Root Disease (*Heterobasidion annosum* (Fr.) Bref.) to Treat the Top of Freshly Cut Stumps

Dilute Bora-Care to a 5% solution by thoroughly mixing 1 gallon of Bora-Care with 9 gallons of water. Using a mechanical harvester, backpack sprayer or hand-held sprayer, apply solution to the point of wetness to the surfaces of freshly cut stumps immediately after or within 3 days of felling. One gallon of solution will treat 200 square feet of stump surface area (approximately 200 to 1,000 stumps, depending on stump size). Marker dye may be added to the solution as a visual aid.

### Storage and Disposal

(For product packaged in rigid, nonrefillable containers less than or equal to 5 gallons)

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

**Pesticide Storage:** Store in original container in a preferably locked storage area inaccessible to children and pets. Do not freeze. **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:** Nonrefillable container; do not reuse or refill this container. Triple rinse (or equivalent) container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times, then offer for recycling, if available; or reconditioning, if appropriate; or puncture and dispose of in a sanitary landfill; or by incineration.

### Storage and Disposal

(For product packaged in rigid, nonrefillable containers greater than 5 gallons)

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

**Pesticide Storage:** Store in a cool, dry (preferably locked) storage area inaccessible to children and pets. Do not freeze. **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:** Nonrefillable container; do not reuse or refill this container. Triple rinse (or equivalent) container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times, then offer for recycling, if available; or reconditioning, if appropriate; or puncture and dispose of in a sanitary landfill; or by incineration.

## Storage and Disposal

*(For product packaged in rigid, refillable containers)*

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

**Pesticide Storage:** Store in original container in a preferably locked storage area inaccessible to children and pets. Do not freeze. **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:** Refillable container; refill this container only with Bora-Care. Do not reuse this container for any other purpose. Cleaning the container before refilling is the responsibility of the refiller; cleaning before final disposal is the responsibility of the person disposing of the container. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water, then vigorously agitate or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure 2 more times, then offer for recycling, if available; or reconditioning, if appropriate; or puncture and dispose of in a sanitary landfill; or by incineration..

## XVII. 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 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.

It is not intended that this product be used to practice any applicable patent, whether mentioned or not, without procurement of a license, if necessary, from the owner, following investigation by the user.



Nisus Corporation  
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Issued Date: 8/24/1989  
Revised Date: 05-01-11

## 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®**  
EPA Registration No. 64405-1  
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<sub>2</sub>, 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 from 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<sub>50</sub> - greater than 5000 mg/kg body weight (Sprague-Dawley male and female rats).

Acute dermal LD<sub>50</sub> - greater than 2000 mg/kg body weight (New Zealand Albino male and female rabbits).

Acute inhalation LC<sub>50</sub> - 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<sub>10</sub> = 24 mg B/L

**Invertebrate Toxicity:** Daphnids, *Daphnia magna straus*

24-hr EC<sub>50</sub> = 242 mg B/L

Test substance: sodium tetraborate

**Fish Toxicity:**

Seawater:

Dab, *Limanda limanda*

96-hr LC<sub>50</sub> = 74 MG B/LL

Freshwater:

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

24-day LC<sub>50</sub> = 88 mg B/L

32-day LC<sub>50</sub> = 54 mg B/L

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

7-day LC<sub>50</sub> = 65 mg B/L

3-day LC<sub>50</sub> = 71 mg B/L

The LC<sub>50</sub> 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

EPA Registration No. 64405-1

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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