



## MATERIAL SAFETY DATA SHEET

|                      |                          |                    |
|----------------------|--------------------------|--------------------|
| <b>Product name</b>  | <b>NAVA Algaecide 50</b> |                    |
| <b>Product id</b>    | 2006-AZ                  |                    |
| <b>Revision date</b> | 06/10/2011               | <b>Revision: 3</b> |
| <b>Supersedes</b>    | 10/12/2006               |                    |

### 1. Identification of the substance & the company

|                                |   |
|--------------------------------|---|
| <b>Trade name</b>              | Algaecide 50  |
| <b>Chemical family</b>         | Quaternary Ammonium Compound  |
| <b>Type of product and use</b> | Algaecide   |
| <b>Supplier</b>                | NAVA Water Products<br>95 MacCorkle Ave. SW,<br>South Charleston, WV 25303,<br>USA<br>Tel: (304) 746-3000 |
| <b>Emergency Telephone</b>     | Chemtrec (800)424-9300<br>Medical 1-800-420-9236  |

### 2. Hazards identification

|                                  |   |
|----------------------------------|---|
| <b>Emergency overview</b>        | <i>Clear, colorless to straw colored liquid<br/>Corrosive to the eyes, skin, gastrointestinal tract, and respiratory system</i>   |
| <b>Potential Health Effects:</b> |   |
| - Eye Contact                    | Causes burns and may result in permanent injury to eyes including blindness   |
| - Skin contact                   | Causes burns. Brief exposures may cause irritation and defatting of the skin.   |
| - Inhalation                     | Mists and vapors can irritate the throat and respiratory tract. High vapor concentrations may cause central nervous system effects. Symptoms may include headaches, dizziness and drowsiness. |
| - Ingestion                      | Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.   |
| <b>NFPA Ratings (Scale 0-4)</b>  | Health = 3, Fire = 2, Reactivity = 0.   |
| <b>HMIS Ratings (Scale 0-4)</b>  | Health = 3, Fire = 2, Reactivity = 0.   |



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### 3. Composition / information on ingredients

| Components                              | CAS No.    | Weight % |
|---|------------|----------|
| Dialkyl methyl benzyl ammonium chloride | 73049-75-9 | 0-0.5    |
| 2-PROPANOL                              | 67-63-0    | 8-12     |
| Alkyl dimethyl benzyl ammonium chloride | 68391-01-5 | 48-52    |

### 4. First-aid measures

**Eye contact** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lens, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**Skin contact** Take off contaminated clothing.  
Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

**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. Call a poison control center or doctor for further treatment advice.

**Ingestion** Call poison control center, or doctor immediately for treatment advise.  
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.

**Note to physician** Probable mucosal damage may contraindicate the use of gastric lavage.



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### 5. Fire - fighting measures

|   |   |
|---|---|
| <b>Fire fighting procedure</b>            | Cool containers with water spray. Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA). |
| <b>Unusual fire and explosion hazards</b> | Vapour may travel considerable distance to source of ignition and flash back. Vapours can form explosive mixtures with air.         |

### 6. Accidental release measures

|                                |   |
|--------------------------------|---|
| <b>Personal precautions</b>    | Isolate spill area and restrict non essential personnel. Wear protective equipment to avoid skin contact, eye contact and breathing vapors. Stop leak if possible without personal risk.<br>Stay upwind. Keep out of low areas where vapors may accumulate. Avoid heat, flames, sparks and other sources of ignition.   |
| <b>Methods for cleaning up</b> | Ventilate closed spaces before entering. All equipment used when handling the product must be grounded. Floor will be slippery. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Prevent entry into waterways, sewers, basements or confined areas. Absorb on sand, earth or vermiculite.<br>Keep in suitable, closed containers for disposal.<br>Use non sparking tools in cleanup operations.<br>Large Spills: Dike far ahead of liquid spill for later disposal. Water spray may reduce vapor but will increase foaming. Water may not prevent ignition in closed spaces. |

### 7. Handling and storage

|                 |   |
|-----------------|---|
| <b>Handling</b> | Avoid contact with skin and eyes. Keep containers tightly closed.   |
| <b>Storage</b>  | Keep away from heat, sparks and open flame.<br>Keep from freezing. Store in a cool, well-ventilated area away from incompatible materials (see "materials to avoid").<br>Prevent electrostatic charge buildup by using common bonding and grounding techniques. |

### 8. Exposure controls / personal protection

**Exposure Limits :**



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### 8. Exposure controls / personal protection

| Components  | ACGIH-TLV Data              | OSHA (PEL) Data |
|---|-----------------------------|-----------------|
| Dialkyl methyl benzyl ammonium chloride<br>73049-75-9 | Not determined              | Not determined  |
| 2-PROPANOL<br>67-63-0                                 | 200 ppm TWA<br>400 ppm STEL | 400 ppm         |
| Alkyl dimethyl benzyl ammonium chloride<br>68391-01-5 | Not determined              | Not determined  |

#### Ventilation requirements

Provide adequate local exhaust ventilation (explosion proof) to maintain worker exposure below exposure limits.

#### Personal protective equipment:

##### - Respiratory protection

NIOSH approved respirator. Respiratory protection may be needed for non-routine or emergency situations.

##### - Hand protection

Impervious gloves (rubber or neoprene)

##### - Eye protection

Chemical safety goggles Use a face shield if splashing is possible.

##### - Skin and body protection

Body covering clothes and boots

#### Hygiene measures

Safety shower and eye bath should be provided. Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking.

### 9. Physical and chemical properties

#### Appearance

Clear, colourless to straw colored liquid with benzaldehyde (organic) odor

#### Flash point

120°F (48.8°C) Pensky Martin Closed Cup

#### Flammable/Explosion limits

Not available

#### Evaporation rate (ether=1)

Not determined

#### Viscosity

75 Cst cps (25°C)

#### Solubility:

#### Specific gravity

0.95 (8 lbs/gal)

#### pH

6-9 for 10% Aqueous Solution



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### 10. Stability and reactivity

|   |   |
|---|---|
| <b>Stability</b>                        | Stable under normal conditions            |
| <b>Materials to avoid</b>               | Strong oxidizing agents. Reducing agents, |
| <b>Conditions to avoid</b>              | Keep away from heat.                      |
| <b>Hazardous decomposition products</b> | CO <sub>2</sub> , CO and HCl              |
| <b>Hazardous polymerization</b>         | Will not occur                            |

### 11. Toxicological information

|                              |  |
|------------------------------|--|
| <b>Acute toxicity:</b>       |  |
| - Rat oral LD50              | 760 mg/kg  |
| - Rat dermal LD50            | >1700 mg/kg  |
| - Eye irritation (rabbit)    | Corrosive  |
| - Dermal irritation (rabbit) | Corrosive  |
| <b>Carcinogenicity</b>       | Not classified by IARC<br>Not included in NTP 11th Report on Carcinogens |

### 12. Ecological information

|                           |                                 |
|---------------------------|---------------------------------|
| <b>Aquatic toxicity :</b> | Very toxic to aquatic organisms |
| <b>Biodegradation</b>     | Biodegradable                   |

### 13. Disposal considerations

|                       |   |
|-----------------------|---|
| <b>Waste disposal</b> | This substance, when discarded or disposed of, is a characteristic hazardous waste according to Federal regulation (40 CFR 261) and is assigned the EPA Hazardous Waster Number of D001. The discarding or disposal of this material must be done at a properly permitted facility in accordance with the regulations of 40 CFR 262, 263 264 and 268. Additionally, the discarding or disposal of this material may be further regulated by state, regional, or local regulations. Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. |
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### 14. Transportation information

|                  |  |
|------------------|--|
| <b>UN No.</b>    | 1903   |
| <b>DOT</b>       | Proper shipping name: Disinfectant Liquid Corrosive N.O.S. (Quaternary Ammonium Compound)<br>Class: 8 - Corrosives<br>Label: CORROSIVE (8)<br>Packing Group: III |
| <b>IMO</b>       | Proper shipping name: Disinfectant Liquid Corrosive N.O.S. (Quaternary Ammonium Compound)<br>Class: 8 - Corrosives<br>Label: CORROSIVE (8)<br>Packing Group: III |
| <b>ICAO/IATA</b> | Proper shipping name: Disinfectant Liquid Corrosive N.O.S. (Quaternary Ammonium Compound)<br>Class: 8<br>Hazard Label (s): Corrosive<br>Packing group: III       |

### 15. Regulatory information

|  |  |
|--|--|
| <b>USA</b>   | This product is subject to registration under FIFRA                        |
| <b>- SARA 313</b>  | Chemical Listed: Isopropanol   |
| <b>- SARA (311, 312)</b>                                       | This product is categorized as an immediate health hazard, and fire hazard |
| <b>- Massachusetts Right-to-Know Hazardous Substances list</b> | Listed   |
| <b>- New Jersey Right-to-Know Hazardous Substances list</b>    | Listed   |
| <b>- Pennsylvania Right-to-Know Hazardous Substances list</b>  | Listed   |



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|----------------------------|---|
| <b>Canada</b>              | Not all ingredients are listed in DSL                                 |
| <b>-WHMIS hazard class</b> | B3 combustible liquids<br>E corrosive material<br>D2B toxic materials |
| <b>EU</b>                  | Reported in EINECS  |
| <b>Japan</b>               | One or more ingredients are not listed on the ENCS inventory          |
| <b>China inventory</b>     | Listed  |

### 16. Other information

**This data sheet contains changes from the previous version in section(s)**

2, 3, 8, 9, 11, 12, 14, 15

The information in this Material Safety Data Sheet should be provided to all who will use, handle, store, transport, or otherwise be exposed to this product. This information has been prepared for the guidance of plant engineering, operations and management and for persons working with or handling this product. Additionally, if this Material Safety Data Sheet is more than three years old, you should contact NAVA Water products at the phone number listed below to make certain that this sheet is current.

Information is supplied upon the condition that the persons receiving same will make their own determination as to its safety and suitability for their purposes prior to use.

In no event will NAVA Water Products be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information.

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Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, NAVA Water Products makes no representations as to the completeness or accuracy thereof.

**Prepared for**

NAVA Water Products  
95 MacCorkle Ave. SW,  
South Charleston, WV 25303 , USA  
Tel: (304) 746-3000



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**End of safety data sheet**