

Osmose MATERIAL SAFETY DATA SHEET

MATERIAL SAFETY DATA SHEET: **NW 100**

SECTION I

| | |
|---------------------------------|---------------------------------------|
| MSDS NUMBER: | 178-OSM |
| MSDS CODE: | OSM |
| SYNONYMS: | N/A |
| MANUFACTURED BY: | Osmose, Inc. |
| DIVISION: | WPD |
| EPA REGISTRATION NUMBER: | 3008-83 |
| VENDOR: | N/A |
| EMERGENCY PHONE: | CHEMTREC: 1(800) 424-9300 |
| OTHER CALLS: | 1(800) 686-6676 |
| ADDRESS: | 980 Ellicott Street, Buffalo NY 14209 |
| MSDS PREPARED BY: | Teri Muchow |
| DATE PREPARED: | December 12, 2001 |
| DATE LAST REVISED: | April 10, 2002 |

ADDITIONAL INFORMATION

CHEMTREC'S EMERGENCY TELEPHONE NUMBER IS TO BE USED ONLY IN THE EVENT OF CHEMICAL EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT INVOLVING CHEMICALS.

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

| TRADE NAME: NW 100 | CAS | OSHA PEL | ACGIH TLV | OTHER | % |
|--|-------------|------------------------------|------------------------------|---------------|-------------|
| INGREDIENT NAME | | | | | |
| Monoethanolamine | 141-43-5 | 3 ppm TWA 6 mg/m3 TWA | 3 ppm TWA 6 ppm STEL | N/A | 24.7 – 26.3 |
| Copper complex expressed as Copper Oxides | Proprietary | Fume as Cu, 0.1 mg/m3 TWA | Fume as Cu, 0.2 mg/m3 TWA | N/A | 8.9 – 9.5 |
| Boric Acid | 10043-35-3 | N/A | N/A | N/A | 5 – 5.6 |
| Alkyl Dimethyl benzyl ammonium chloride | 68391-01-5 | N/A | N/A | N/A | 4.3 – 4.9 |
| Sodium Nitrite | 7632-00-0 | N/A | N/A | RQ – 100 lbs. | < 0.5% |

SECTION III - CHEMICAL CHARACTERISTICS

| BOILING POINT | MELTING POINT | FREEZING POINT | SPECIFIC GRAVITY (H ₂ O = 1) | PERCENT VOLATILE BY VOLUME | THEORETICAL VOC CONTENT (PERCENT OF WEIGHT) |
|--|------------------------|----------------------------------|---|----------------------------------|--|
| ~100°C (~212F) | N/A | ~-15°C (5°F) | 1.1 to 1.25 | ~ 62% | Not Available |
| WEIGHT PER GALLON 10.25 lbs/gal | pH: 8.5 – 11 @ 25°C | VAPOR PRESSURE 3.9 kPa @ 68°F | VAPOR DENSITY 0.6 (air = 1) | DENSITY See specific gravity. | EVAPORATION RATE BASIS (N-BUAC) = 1 Not Available |
| SOLUBILITY IN WATER: Complete | | REACTIVITY IN WATER: N/A | | VISCOSITY: 11.52 cP at 22°C | |
| APPEARANCE AND ODOR: Dark blue liquid with a mild amine-like odor. | | | | | |

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

| FLASH POINT | METHOD | FLAMMABLE LIMITS IN AIR (%) | AUTOIGNITION TEMPERATURE |
|---------------------|-----------------------------------|-----------------------------|---|
| > 201°F | Closed Cup | Not available | Not available |
| NFPA CODES | HEALTH | 3 | HMIS CODES: |
| | FLAMMABILITY | 0 | HEALTH |
| | REACTIVITY | 0 | FLAMMABILITY |
| | OTHER | N/A | REACTIVITY |
| | | | PROTECTION |
| EXTINGUISHER MEDIA: | Use methods for surrounding fire. | | *goggles/face shield, gloves, protective clothing |

SPECIAL FIRE FIGHTING PROCEDURES: Not a fire hazard. Firefighters should wear full protective clothing, including self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Combustion products include toxic hydrogen chloride fumes, oxygen, boric oxide, oxides of carbon and nitrogen.

Osmose MATERIAL SAFETY DATA SHEET

SECTION V - REACTIVITY DATA

IS THIS CHEMICAL STABLE UNDER NORMAL CONDITIONS OF HANDLING/STORAGE (Y/N)? Y

CONDITIONS TO AVOID (REGARDING STABILITY): Avoid extreme heat and contact with incompatible materials.

INCOMPATIBILITY (MATERIALS TO AVOID): Strong acids, alkalis and oxidizing agents. May react with metals, halogenated hydrocarbons, ketones and organic anhydrides.

HAZARDOUS DECOMPOSITION PRODUCTS: Decomposition products include toxic hydrogen chloride fumes, oxygen, boric oxide, oxides of carbon and nitrogen. Decomposition products may include nitrosamines, which can cause cancer.

HAZARDOUS POLYMERIZATION POSSIBLE (Y/N)? N

CONDITIONS TO AVOID (REGARDING POLYMERIZATION): N/A

SECTION VI - HEALTH HAZARDS

EMERGENCY OVERVIEW: Danger! Corrosive! Toxic! May be harmful or fatal if swallowed or inhaled. May cause severe irritation or burns to the eyes, skin, gastrointestinal tract, and respiratory system. May affect the central nervous system as well as producing toxic effects on the blood, liver and kidneys.

ROUTES OF ENTRY: Dermal, eyes, inhalation.

SIGNS AND SYMPTOMS OF ACUTE OVEREXPOSURE:

| | |
|-------------|---|
| EYES: | This product is severely irritating to the eyes and may cause eye burns. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. |
| SKIN: | This product is severely irritating to the skin and may cause burns. Depending on the duration of contact, symptoms will include reddening, discomfort, irritation, ulceration, and chemical burns. Repeated contact with this material may produce dermatitis. This product may be harmful if it is absorbed through the skin. Product contains components that may cause allergic skin sensitization reactions. Symptoms of overexposure include gastrointestinal upset, irritation, central nervous system depression characterized by nausea and vomiting, hair loss and shock. |
| INGESTION: | This product may be harmful or fatal if swallowed. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract. Ingestion can cause gastrointestinal irritation, nausea, vomiting and diarrhea. May affect the central and peripheral nervous systems as well as producing toxic effects on the liver and kidneys. |
| INHALATION: | This product is toxic by inhalation. This product may cause corrosive damage to the respiratory tract. |

CHRONIC OVEREXPOSURE: Repeated contact with this material may produce dermatitis. This product may be harmful if it is absorbed through the skin. Product contains components that may cause allergic skin sensitization reactions. Chronic exposure to copper and its salts may cause rare cases of anemia (from hemolytic effects) and allergic contact dermatitis. Boric acid has been shown to cause damage to the testis and sperm in laboratory animals. The effects on humans are unknown.

CHEMICAL LISTED AS A CARCINOGEN OR POTENTIAL CARCINOGEN?:

- NATIONAL TOXICOLOGY PROGRAM (Y/N): N
- IARC MONOGRAPHS (Y/N): N
- OSHA (Y/N): N

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Pre-existing eye, respiratory system and skin conditions. Overexposure can cause damage to the central nervous system, lungs, blood, liver and kidneys.

ACUTE AND CHRONIC TOXICITY:

No information is available for this specific formulation, but is available on its components. Inhalation of high concentrations of Monoethanolamine has been reported to cause pulmonary, liver, kidney and skin damage in experimental animals. Monoethanolamine is corrosive to the eyes, skin, respiratory system and gastrointestinal tract, and may cause permanent damage to the eyes. Monoethanolamine may be absorbed through the skin in harmful amounts and may cause allergic skin reactions. Monoethanolamine exposures may cause damage to the nervous system, lungs, liver and kidneys.

Dimethyl benzyl ammonium chloride (DBAC) produces corrosive damage to the eyes and gastrointestinal tract, and severe irritation to the skin and respiratory tract. Under certain circumstances, DBAC may release Ammonia, which is corrosive to the eyes, skin, respiratory, and gastrointestinal systems. Exposure to high concentrations of Ammonia may cause breathing difficulty, pulmonary edema, lung damage, and severe corneal injury including cataracts.

Acute exposures to Boric Acid can cause gastrointestinal distress, liver or kidney damage, shock, convulsions, coma, and death. Boric Acid can be absorbed through the skin, lungs and gastrointestinal tract, and is a skin sensitizer.

The Copper complex expressed as copper oxide in this product contains copper salts which, upon ingestion of high oral doses, can cause gastrointestinal disturbances, anemia, and secondary liver and kidney damage.

| Monoethanolamine (CAS #141-43-5) | Copper complex (expressed as Copper oxides) |
|--|---|
| Oral LD50 Rat: 1720 mg/kg Oral LD50 Mouse: 700 mg/kg Dermal LD50 Rabbit: 1 mg/kg IDLH: 30 ppm | Oral LD50 Rat: 1350 mg/kg Inhalation LC50 Rat: 2000 ppm/4H Dusts as mists as Cu: 100 mg/m3 IDLH (related to copper) |

Osmose MATERIAL SAFETY DATA SHEET

| Boric Acid (CAS #10043-35-3) | Dimethy benzyl ammonium chloride (CAS #68391-01-5) |
|--|---|
| Oral LD50 Rat: 2660 mg/kg Oral LD50 Mouse: 3450 mg/kg | Oral LD50 Rat: 735 mg/kg for males and females combined Dermal LD50 Rat: 3350 mg/kg for males and females combined |



EMERGENCY AND FIRST AID PROCEDURES



EMERGENCY PHONE NUMBER OF MANUFACTURER: CHEMTREC 1(800) 424-9300

- 1. INHALATION:** If inhaled, immediately remove the affected person to fresh air. If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek immediate medical attention. Perform mouth-to-mouth resuscitation if victim is not breathing.
 - 2. EYE CONTACT:** Immediately flush eyes with plenty of water for at least 15 minutes. Seek immediate medical attention.
 - 3. SKIN CONTACT:** For skin contact, wash immediately with soap and water. Continue flushing skin with water for 15 minutes. Immediately take off all contaminated clothing. Seek immediate medical attention.
 - 4. INGESTION:** If the material is swallowed, get medical attention or advice. DO NOT induce vomiting. Give one to two glasses of water or milk.
- NOTES TO PHYSICIAN:** Provide general supportive measures and treat symptomatically.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

UNITED STATES DEPARTMENT OF TRANSPORTATION SHIPPING DESCRIPTION:

Corrosive liquids, n.o.s., 8, UN1760, PGII
(Monoethanolamine, Dimethyl benzyl ammonium chloride, Sodium Nitrite) RQ

**Note that "RQ" only needs to be included in the description when shipped in containers with capacity > 2,900 gallons.*

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Do not get this material in your eyes, on your skin, or on your clothing. Do not inhale vapors or mists of this product. Use this product with adequate ventilation. Wash thoroughly after handling. Keep out of reach of children. Read product label.

OTHER PRECAUTIONS: Store in a cool dry, well ventilated area. Store in carbon steel storage tanks away from sources of heat. See product label for more information.

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

| | |
|-------------------------|---|
| Containment Procedures: | Stop the flow of material, if this is without risk. Wear appropriate protective equipment and clothing during clean-up. Keep upwind and out of low areas. Contain discharge by booming on water or diking on ground. Absorb/adsorb residual materials and clean-up with non-sparking tools. Prevent entry into sewers, drains, underground or confined spaces, water intakes and waterways. See product label for more information. |
| Clean-Up Procedures: | Absorb spill with inert material. Shovel material into appropriate container for disposal. Sweep up or gather material and place in appropriate container for disposal. Wash spill area thoroughly. Wear appropriate protective equipment during clean-up. See product label for more information. |
| Evacuation Procedures: | Isolate area. Keep unnecessary personnel away. |
| Special Procedures: | Wear appropriate personal protective equipment. Follow all Local, State and Federal Regulations for disposal. |

WASTE DISPOSAL METHODS: You must test your waste using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous waste. No EPA waste numbers are applicable to this product's components. Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

SECTION VIII - CONTROL MEASURES

RESPIRATORY PROTECTION: Individuals who enter pressure treatment cylinders and spray treatment booths/compartments contaminated with wood treatment solution (e.g., cylinders that are in operation or are not free of the treatment solution) must wear properly fitting, well-maintained, high-efficiency respirators, MSHA/NIOSH-approved for ammonia. If level of ammonia in the plant is unknown or exceeds 35 ppm (STEL) or 25 ppm (ACGIH) of air averaged over an 8-hour work period, air monitoring programs, procedures and record retention and submission must be conducted in accordance with OSHA standards.

VENTILATION REQUIREMENTS: As necessary to maintain exposure limits in Section II. See product label for more information.

PROTECTIVE GLOVES: Applicators must wear gloves impervious to wood treatment solutions (rubber) in all situations where dermal contact is expected.

EYE PROTECTION: Goggles and face shield.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Individuals who enter treatment cylinders and other related equipment contaminated with wood treatment solutions must wear protective clothing, (including overalls, jacket, gloves, and boots), impervious to wood treatment solutions.

Osmose MATERIAL SAFETY DATA SHEET

WORK/HYGIENIC PRACTICES: Applicators must not eat or drink, or use tobacco products during those parts of the application process that may expose them to the wood treatment concentrate or solutions (i.e., manually opening/closing cylinder doors, moving trams out of the cylinder, mixing chemicals, handling freshly treated wood, etc.). Wash thoroughly after skin contact and before eating, drinking, using tobacco products, or using restrooms. Protective clothing must be replaced when it shows signs of significant contamination. Applicator must leave all protective clothing, work shoes or boots, and equipment at the treatment plant. Worn out or severely contaminated protective clothing must be disposed of in a manner approved for pesticide disposal and in accordance with state and federal regulations.

SECTION IX – EXOLOGICAL INFORMATION

ECOTOXICITY: This product contains fungicides and bactericides which when released into the environment, are expected to adversely effect or destroy contaminated plants. May be harmful or fatal to wildlife.

| Monoethanolamine (CAS #141-43-5) |
|---|
| LC50 (96 hr) goldfish: 170.0 mg/l |
| EC50 (30 min) Photobacterium phosphoreum: 13.7 mg/l Microtox test |
| Boric Acid (CAS #10043-35-3) |
| LC50 (48hr) water flea: 115.0 – 153.0 mg/l (static conditions) |

SECTION X - REGULATORY INFORMATION:

SARA/TITLE III ;SECTION 312 - HAZARD CATEGORIES:

Immediate (Acute) Health: Yes Reactive Hazard: No
 Delayed (Chronic) Health: Yes Sudden Release of Pressure: No
 Fire Hazard: No

SECTION 302:

N/A

SECTION 304:

N/A

SECTION 311 & 312:

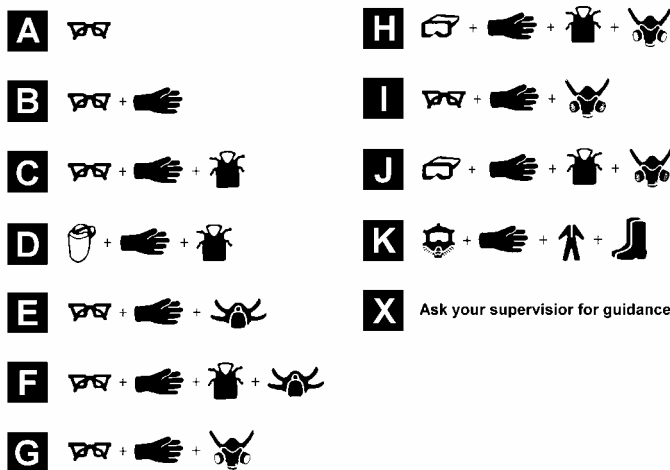
Storage of NW 100 will subject you to reporting under Section 311 and 312 of SARA. Under Section 311 you are required to submit material safety data sheets to your Local Emergency Planning Committee (LEPC), your State Emergency Response Commission (SERC) and your local fire department. Under Section 312 you are required to submit a Tier I or II Inventory Form to your LEPC, SERC and local fire department by March 1st of each year.

SECTION 313:

Form R reporting required for 1.0% de minimis concentration (related to Copper).

Form R reporting required for 1.0% de minimis concentration; Chemical Category N100 (related to copper compounds).

HAZARDOUS MATERIALS INFORMATION SYSTEM (HMIS) PERSONAL PROTECTION INDEX



N/A = Not Applicable

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