SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: OMEGABOND® 500 Liquid
SUPPLIER: OMEGA ENGINEERING, INC.
ADDRESS: PO BOX 4047
STAMFORD, CT 06907
TELEPHONE: (203) 359-1660
ITEM NUMBER: OB-500
ITEM DESCRIPTION: Refractory Coating (Liquid)
PRODUCT DESCRIPTION: Refractory Coating (Liquid)
CHEMICAL FAMILY: Sodium Silicate Solution
REVISION DATE: 01/24/12
PRODUCT USE: High temperature bonding/adhesive compounds

SECTION 2. COMPOSITION AND DATA ON COMPONENTS WITH LIMITS

| COMPONENT          | CAS #  | ACGIH TLV | OSHA PEL | % WT
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>SODIUM SILICATE</td>
<td>1344-09-8</td>
<td>NE</td>
<td>NE</td>
<td>&lt;50%</td>
</tr>
</tbody>
</table>

NOTES: Exposure values shown for guidance only. Please follow applicable regulations.

SECTION 3. HAZARDS IDENTIFICATION

HMIS RATING:
Health 2
Flammability 0
Reactivity 0
Personal protection B

THRESHOLD LIMIT VALUE: NE

EFFECTS OF OVEREXPOSURE: Causes irritation to skin, eyes, respiratory tract, esophagus, and stomach. No known chronic hazards.

INHALATION: Causes sneezing, and burning or itching in nose and throat

EYE EXPOSURE: Pain, redness, and tearing

SKIN EXPOSURE: Itching or burning
SECTION 4. FIRST AID MEASURES

EYE CONTACT: Check for and remove all contact lenses. Flush eyes immediately with water or physiological saline for at least 15 minutes while lifting upper and lower lids. Do not use eye ointment. Seek medical attention.

INGESTION: If swallowed, do not induce vomiting. Give large quantities of water. Seek medical attention immediately. Never give anything by mouth to an unconscious person.

INHALATION: Not expected to be a problem.

SKIN CONTACT: Wash contact area thoroughly with soap and water. Remove contaminated clothing. Launder before reuse. Seek medical attention if erythema develops.

SECTION 5. FIRE FIGHTING MEASURES

AUTO IGNITION TEMPERATURE: NA

EXPLOSION DATA: Not sensitive to mechanical impact or static discharge.

EXTINGUISHING MEDIA: NA

NOTE: Many dusts and aerosols may exhibit explosive characteristics if ignited by static discharge or spark. Exercise care to avoid causing dusting or misting operations such as grinding or drilling.

FIRE AND EXPLOSION HAZARDS: NA

FIRE FIGHTING PROCEDURES: NA

FLAMMABILITY: Not flammable in presence of open flame, sparks, excessive heat and static discharge.

FLAMMABLE LIMITS LEL: NA

FLAMMABLE LIMITS UEL: NA

FLASHPOINT: NA

SECTION 15. REGULATORY INFORMATION (CONT'D)

CANADA
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by CPR.

CANADA
DSL: Components included on inventory.

WHMIS HAZARD CLASS (ES):
Not controlled

WHMIS TRADE SECRET REGISTRY NUMBER(S): Not Applicable

WHMIS SYMBOLS:
Stylized T

EUROPEAN ECONOMIC COMMUNITY (EEC)

EINECS Inventory:
Components included on inventory

EEC SYMBOLS(S):
Irritant

EEC RISK® PHRASES: R36/37/38 Irritating to eyes, respiratory system, and skin

EEC SAFETY PHRASES:
S24/25 Avoid contact with skin and eyes.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S7/8 Keep container tightly closed and dry

SECTION 16. OTHER INFORMATION

This MSDS contains information and recommendations based upon our present knowledge and data believed to be reliable. All data shown here are subject to reasonable variation and are supplied as an accommodation to the buyer. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This MSDS applies only to the product in its “as manufactured” state, since the application to which the product is subjected may change its characteristics. The buyer is responsible for determining the safety, toxicity, and suitability of the product under the conditions of their use of the product. Buyers also have the responsibility for insuring that the MSDS is available to their employees, product users, and handlers.

NAV = Not Available  NE = Not Established  NA = Not Applicable  ND = Not Determined  EV = Under Evaluation
SECTION 6. ACCIDENTAL RELEASE MEASURES

CLEAN-UP PROCEDURE: Spill area may become slippery; use care to avoid falls. Flush spill area with plenty of water. For large quantities, neutralize with dilute acid and landfill solids or flush neutral liquid to sewer with plenty of water.

EUROPEAN COMMUNITY WASTE DISPOSAL KEY: Not known

UNCLEANED PACKAGINGS: Disposal must be made according to official regulations.

SECTION 7. HANDLING AND STORAGE

Avoid contact with eyes, skin, and clothing.

For industrial use only!

Do not take internally.

May cause irritation.

Wear chemical splash goggles, gloves, and protective clothing.

Wash thoroughly after handling.

STORAGE: Store in a cool, dry place. Keep container closed when not in use.
SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

See Section 2 for the components that have limit values that require monitoring at the workplace.

EYE PROTECTION: Chemical resistant goggles and/or face shield.

RESPIRATORY PROTECTION: Use NIOSH approved mist respirator where spray occurs. For emergency, a self-contained breathing apparatus or a full-face respirator is recommended. If TLV of any component is exceeded, use appropriate respiratory protection or ventilate in accordance with OSHA Regulation 29 CFR Part 1910.

SKIN PROTECTION: Suitable protective gloves (neoprene, butyl rubber, or FKM). Clothing should be clean, long-sleeved workclothes. Synthetic apron. Boots. Wash thoroughly before eating, smoking, applying cosmetics, etc. Thoroughly launder work clothes before reuse. Safety shower nearby.

VENTILATION: Normal ventilation for good working conditions should be used.

OTHER PRECAUTIONS: Safety shower and eyewash station should be within direct access. Keep contained closed. Dries to form a glassy film that can cut skin. Spills are very slippery. Can etch glass.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

% VOLATILE BY VOLUME: NA
APPEARANCE AND ODOR: Hazy to clear, odorless liquid.
BOILING POINT: 100°C
COEFFICIENT OF WATER/OIL DISTRIBUTION: NA
EVAPORATION RATE: (N-Butyl Acetate=1) Less than 1
MELTING POINT: 32°F (0°C)
ODOR THRESHOLD: Not available
pH: 11.7
SPECIFIC GRAVITY: 1.32
SOLUBILITY IN WATER: 100%
VAPOR DENSITY: Vapor is water
VAPOR PRESSURE: Vapor is water

SECTION 10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Flammable hydrogen gas may be produced on prolonged contact with metals such as aluminum, tin, lead, and zinc.

HAZARDOUS DECOMPOSITION PRODUCTS: Not known
HAZARDOUS POLYMERIZATION: Will not occur.
INCOMPATIBILITY: (Materials to avoid) Acids, salts, or alcohols may cause gel formation (non-hazardous)
STABILITY: Stable under ordinary conditions of use and storage.

SECTION 11. TOXICOLOGICAL INFORMATION

ACGIH: NO
IARC: NO

EFFECTS OF ACUTE EXPOSURE: Refer to Section 3.

EFFECTS OF CHRONIC EXPOSURE: Refer to Section 3.

MUTAGENIC EFFECTS: If not addressed in Section 3, the data is not available.

REPRODUCTIVE TOXICITY: If not addressed in Section 3, the data is not available.

TERATOGENIC EFFECTS: If not addressed in Section 3, the data is not available.

NAME(S) OF TOXICologically SYNERGISTIC PRODUCTS AND EFFECTS: If not addressed in Section 3, data is not available.

LC50/LD50: There is no data available.

ADDITIONAL INFORMATION: Sodium silicate solution has no known chronic hazard.

EYE IRRITANT: Yes
INGESTION IRRITANT: Yes
INHALATION IRRITANT: Yes
RESPIRATORY SENSITIZER: No
SKIN IRRITANT: Yes

SECTION 12. ECOLOGICAL INFORMATION

AQUATIC TOXICITY: Sodium silicate solution has low toxicity (96-hr LD50=500-5,000mg/liter). The 96 hr TLM in mosquitofish is 2,320mg/liter. High pH (alkalinity) of undiluted material is harmful to aquatic life.
SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

See Section 2 for the components that have limit values that require monitoring at the workplace.

EYE PROTECTION: Chemical resistant goggles and/or face shield.

RESPIRATORY PROTECTION: Use NIOSH approved mist respirator where spray occurs. For emergency, a self-contained breathing apparatus or a full-face respirator is recommended. If TLV of any component is exceeded, use appropriate respiratory protection or ventilate in accordance with OSHA Regulation 29 CFR Part 1910.

SKIN PROTECTION: Suitable protective gloves (neoprene, butyl rubber, or FKM). Clothing should be clean, long-sleeved workclothes. Synthetic apron. Boots. Wash thoroughly before eating, smoking, applying cosmetics, etc. Thoroughly launder work clothes before reuse. Safety shower nearby.

VENTILATION: Normal ventilation for good working conditions should be used.

OTHER PRECAUTIONS: Safety shower and eyewash station should be within direct access.

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EVAPORATION RATE: (N-Butyl Acetate=1) Less than 1
MELTING POINT: 32°F (0°C)
ODOR THRESHOLD: Not available
pH: 11.7
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SOLUBILITY IN WATER: 100%
VAPOR DENSITY: Vapor is water
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HAZARDOUS DECOMPOSITION PRODUCTS: Not known
HAZARDOUS POLYMERIZATION: Will not occur.
INCOMPATIBILITY: (Materials to avoid) Acids, salts, or alcohols may cause gel formation (non-hazardous)
STABILITY: Stable under ordinary conditions of use and storage.

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ACGIH: NO
IARC: NO

EFFECTS OF ACUTE EXPOSURE: Refer to Section 3.

EFFECTS OF CHRONIC EXPOSURE: Refer to Section 3.

MUTAGENIC EFFECTS: If not addressed in Section 3, the data is not available.

REPRODUCTIVE TOXICITY: If not addressed in Section 3, the data is not available.

TERATOGENIC EFFECTS: If not addressed in Section 3, the data is not available.

NAME(S) OF TOXICLOGICALLY SYNERGISTIC PRODUCTS AND EFFECTS: If not addressed in Section 3, data is not available.

LC50/LD50: There is no data available.

ADDITIONAL INFORMATION: Sodium silicate solution has no known chronic hazard.

EYE IRRITANT: Yes
INGESTION IRRITANT: Yes
INHALATION IRRITANT: Yes
RESPIRATORY SENSITIZER: No
SKIN IRRITANT: Yes

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SECTION 6. ACCIDENTAL RELEASE MEASURES

CLEAN-UP PROCEDURE: Spill area may become slippery; use care to avoid falls. Flush spill area with plenty of water. For spill quantities greater than 100 gallons: isolate, dike and store discharge material, if possible. Collect with dry sand, clay or other absorbent. Flush cleaned areas with water. Observe environmental regulations. Wear PPE - gloves, rubber boots, and safety glasses.

SECTION 7. HANDLING AND STORAGE

Avoid contact with eyes, skin, and clothing.

For industrial use only!

Do not take internally.

May cause irritation.

Wear chemical splash goggles, gloves, and protective clothing.

Wash thoroughly after handling.

STORAGE: Store in a cool, dry place. Keep container closed when not in use.
SECTION 4. FIRST AID MEASURES

EYE CONTACT: Check for and remove all contact lenses. Flush eyes immediately with water or physiological saline for at least 15 minutes while lifting upper and lower lids. Do not use eye ointment. Seek medical attention.

INGESTION: If swallowed, do not induce vomiting. Give large quantities of water. Seek medical attention immediately. Never give anything by mouth to an unconscious person.

INHALATION: Not expected to be a problem.

SKIN CONTACT: Wash contact area thoroughly with soap and water. Remove contaminated clothing. Launder before reuse. Seek medical attention if erythema develops.

SECTION 5. FIRE FIGHTING MEASURES

AUTO IGNITION TEMPERATURE: NA

EXPLOSION DATA: Not sensitive to mechanical impact or static discharge.

EXTINGUISHING MEDIA: NA

NOTE: Many dusts and aerosols may exhibit explosive characteristics if ignited by static discharge or spark. Exercise care to avoid causing dusting or misting operations such as grinding or drilling.

FIRE AND EXPLOSION HAZARDS: NA

FIRE FIGHTING PROCEDURES: NA

FLAMMABILITY: Not flammable in presence of open flame, sparks, excessive heat and static discharge.

FLAMMABLE LIMITS LEL: NA

FLAMMABLE LIMITS UEL: NA

FLASHPOINT: NA

SECTION 15. REGULATORY INFORMATION (CONT'D)

CANADA
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by CPR.

CANADA
DSL: Components included on inventory.

WHMIS HAZARD CLASS (ES): Not controlled

WHMIS TRADE SECRET REGISTRY NUMBER(S): Not Applicable

WHMIS SYMBOLS: Stylized T

EUROPEAN ECONOMIC COMMUNITY (EEC)
EINECS Inventory: Components included on inventory

EEC SYMBOLS(S): Irritant

EEC RISK® PHRASES: R36/37/38 Irritating to eyes, respiratory system, and skin

EEC SAFETY PHRASES: S24/25 Avoid contact with skin and eyes. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S7/8 Keep container tightly closed and dry

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PRODUCT DESCRIPTION: Refractory Coating (Liquid)
CHEMICAL FAMILY: Sodium Silicate Solution
REVISION DATE: 01/24/12
PRODUCT USE: High temperature bonding/adhesive compounds

SECTION 2. COMPOSITION AND DATA ON COMPONENTS WITH LIMITS

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<th>CAS #</th>
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<th>OSHA PEL</th>
<th>% WT</th>
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<tr>
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<td>NE</td>
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<td>&lt;50%</td>
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NOTES: Exposure values shown for guidance only. Please follow applicable regulations.

SECTION 3. HAZARDS IDENTIFICATION

HMIS RATING:
- Health: 2
- Flammability: 0
- Reactivity: 0
- Personal protection: B

THRESHOLD LIMIT VALUE: NE

EFFECTS OF OVEREXPOSURE: Causes irritation to skin, eyes, respiratory tract, esophagus, and stomach. No known chronic hazards.

INHALATION: Causes sneezing, and burning or itching in nose and throat

EYE EXPOSURE: Pain, redness, and tearing

SKIN EXPOSURE: Itching or burning

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