MATERIAL SAFETY DATA SHEET

SECTION I

PRODUCT CLASS: ADHESIVES
TRADE NAME: BARGE A.P. CEMENT
MANUFACTURER CODE ID: J9003D

DATE OF PREPARATION: 2/07/92

SECTION II - HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>INGREDIENT</th>
<th>% BY WGT</th>
<th>CAS NO.</th>
<th>ALLOWABLE EXPOSURE LEVEL</th>
<th>SARA G3</th>
<th>VP mm Hg &amp; 20 DEG.C</th>
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<tr>
<td>TOLUENE</td>
<td>50</td>
<td>108-88-3</td>
<td>TOLUENE-TWA 100 375</td>
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<td>TOLUENE-STEEL 150 560</td>
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<td>OSHA-PEL 100 375</td>
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<td>LFL 1.7 UFL 7.1</td>
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<td>ETHYL ACETATE</td>
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<td>ETHYL ACETATE-TWA 400 1400</td>
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<td>OSHA-PEL 400 1400</td>
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<td>LFL 2.0 UFL 11.0</td>
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<tr>
<td>ALIPHATIC HYDROCARBON</td>
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<td>HMR 400</td>
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<td>SILICA, AMORPHOUS-HYDRATED</td>
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<td>SILICA-AMORPHOUS-TWA 100</td>
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<td>OSHA-PEL 600</td>
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</table>

LFL = LOWER FLAMMABILITY LIMIT PERCENT
UFL = UPPER FLAMMABILITY LIMIT PERCENT
SKIN = SKIN ABSORPTION MUST BE CONSIDERED AS A ROUTE OF EXPOSURE.
S - CEILING = ALLOW. EXPOSURE LEVEL SHOULD NOT BE EXCEEDED FOR ANY TIME PERIOD
MFR = MANUFACTURER RECOMMENDED EXPOSURE LIMIT
STEL = SHORT TERM EXPOSURE LIMIT
X-SARA 313 = CHEMICAL IS SUBJECT TO REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF S.A.R.A. 40 CFR PART 372

SECTION III - HEALTH INFORMATION

EFFECTS OF SHORT TERM OVEREXPOSURE
SWALLOWING
Can cause gastrointestinal irritation, nausea, and vomiting. Aspiration of material into lung may cause chemical pneumonitis which can be fatal.
INHALATION
May cause nose or throat irritation. High concentrations may cause acute central nervous system depression characterized by headaches, dizziness, nausea and confusion.
EYE
May cause eye irritation.
SKIN
May cause defatting and irritation of the skin.

EFFECTS OF REPEATED OVEREXPOSURE
The OSHA Permissible Exposure Limit for amorphous silica is 20 Mppcf or PEL = 80mg/m3.
Repeated overexposure to toluene may cause liver damage. Reports have associated prolonged and repeated occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH.
Toluene has been found to cause kidney, lung and spleen damage in laboratory animals.

SECTION IV - FIRST AID AND EMERGENCY PROCEDURES

SWALLOWING
If swallowed do not induce vomiting. Call poison control center, hospital emergency room or physician immediately.

INHALATION
Remove to fresh air immediately. If breathing has stopped, give artificial respiration. Keep warm and quiet. Get medical attention immediately.

EYE
Flush with large amounts of water, lifting upper and lower lids occasionally. Continue for at least 15 minutes. Get medical attention.

SKIN
Remove contaminated clothing, use waterless skin cleaner followed by soap and water wash. Obtain medical attention if irritation persists.
SKIN
Remove contaminated clothing. Wash affected area with soap and water.
Obtain medical attention if irritation persists.

NOTES TO PHYSICIAN
Any treatment that might be required for overexposure should be directed at the control of symptoms and the clinical conditions.

SECTION V - PHYSICAL DATA

BOILING RANGE
168 DEG. F. (76 DEG. C.) TO 359 DEG. F. (182 DEG. C.)

VAPOR DENSITY
Heavier than air. % VOLATILE BY VOLUME 81

EVAPORATION RATE
Slower than diethyl ether.
VOC 5.65 lb/gal less water & NPS 678 g/l less water CALCULATED

WEIGHT LB/GAL
7.6
VOC31.20 lb/gal solids 3744 g/l solids CALCULATED

SPECIFIC GRAVITY
0.9

All Physical data determined at 68 DEG. F. (20 DEG. C.) 760 mm Hg
*
Negligibly Photochemically Reactive Materials

SECTION VI - FIRE AND EXPLOSION DATA

NFPA FLAMMABILITY CLASSIFICATION
FLAMMABLE LIQUID - CLASS I B

FLASHPOINT
25 DEG. F, SFCC (-4 DEG. C.)

EXTINGUISHING MEDIA
Use NFPA Class B Fire extinguishers (carbon dioxide, all purpose dry chemical or alcohol foam) designed to extinguish flammable liquid fires. Polymer foam is preferred for large fires.

UNUSUAL FIRE AND EXPLOSION HAZARDS
During emergency conditions, overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

WARNING. FLAMMABLE.

SPECIAL FIRE FIGHTING PROCEDURES
Water may be ineffective, but may be used to cool exposed containers to prevent pressure buildup and possible auto-ignition or explosion when exposed to extreme heat. If water is used, fog nozzles are preferable.

SECTION VII - REACTIVITY DATA

STABILITY
Normally stable.

CONDITIONS TO AVOID
Avoid excessive heat (>115 F (46 C) and sources of ignition.

INCOMPATIBILITY (MATERIALS TO AVOID)
Strong acids or alkaline materials.

HAZARDOUS DECOMPOSITION PRODUCTS
Burning, including when heated by welding or cutting, will produce smoke, carbon monoxide and carbon dioxide. In addition, hydrogen chloride, chlorine may be generated.

HAZARDOUS POLYMORIZATION
Will not occur

CONDITIONS TO AVOID
None known

SECTION VIII - ENVIRONMENTAL INFORMATION

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED
Keep spectators away. Eliminate all ignition sources (flames, hot surfaces, and sources of electrical, static or frictional sparks).

Displace liquid with inert material (e.g. sand, earth). Transfer liquid to covered metal containers for recovery or disposal, or remove with inert absorbent. Use only non-sparking tools. Place absorbent/diking materials in covered metal containers for disposal. Prevent contamination of sewers, streams, and groundwater with spilled material or used absorbent.

WASTE DISPOSAL
Dispose in accordance with federal, state and local laws.

Incinerate only in EPA permitted facility. Do not incinerate closed containers. Do not use for disposal of flammable materials.

Contaminated absorbent may be disposed in a hazardous waste landfill.

Dispense only in accordance with federal, state and local regulations.

RCRA CLASSIFICATION
This product, if discarded directly, would be classified a hazardous waste based on its ignitability characteristic i.e. has a flash point of 140 DEG. F (60 DEG. C) or less. The proper RCRA classification would be D001.

ENVIRONMENTAL HAZARDS
None known

SECTION IX - PERSONAL PROTECTION INFORMATION

RESPIRATORY PROTECTION
Proper selection of respiratory protection depends upon many factors including duration/level of exposure and conditions of use. In general exposure to organic chemicals such as those contained in this product may
SECTION IX - PERSONAL PROTECTION INFORMATION; (CONTINUED)

RESPIRATORY PROTECTION
not require the use of respiratory protection if used in well ventilated areas. In restricted ventilation areas, a NIOSH approved chemical cartridge respirator may be required. Under certain conditions, such as spraying, a mechanical prefilter may also be required. In confined areas use a NIOSH/MSHA approved air supplied respirator with an appropriate protection factor. Refer to OSHA 29 CFR 1910.134 "Respiratory Protection" and "Respiratory Protection: An Industrial Hygiene Approach".

VENTILATION
Provide local exhaust ventilation in sufficient volume and pattern so as to maintain exposures below nuisance dust limits and permissible exposure limits which may be listed in Section II. Refer to Industrial Ventilation: A Manual for Recommended Practice - American Conference Of Governmental Industrial Hygienists.

HAND PROTECTION
Solvent permeable gloves are required for repeated or prolonged contact.

EYE PROTECTION
Wear safety spectacles.

OTHER PROTECTIVE EQUIPMENT
Not likely to be needed.

SECTION X - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

OTHER PRECAUTIONS
Do not take internally. Close container after each use.
Empty containers must not be washed and re-used for any purpose.
Containers should be grounded and bonded to the receiving container.
Do not weld, braze or cut on empty container.
Never use pressure to empty. Drum is not a pressure vessel.

SECTION XI - OTHER INFORMATION

US DOT INFORMATION
HAZARD CLASS: FLAMMABLE LIQUID
ID NUMBER: UN1133
PROPER SHIPPING NAME: ADHESIVES

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. WHILE THE INFORMATION IS BELIEVED TO BE RELIABLE, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SINCE THE USE OF THIS INFORMATION AND THE CONDITIONS AND USE OF THIS PRODUCT ARE CONTROLLED BY THE USER, IT IS THE USER'S OBLIGATION TO DETERMINE THE CONDITIONS OF SAFE USE OF THIS PRODUCT.

The Corporate Safety and Environmental Affairs Department is responsible for the preparation of this Material Safety Data Sheet.

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