

MATERIAL SAFETY DATA SHEET (MSDS)
Please retain for your records.

HAVE

MATERIAL SAFETY DATA SHEET
4E838
PRODUCT IDENTIFIER
VIRGINIA ICE MACHINE CLEANER H417, H418, NFPA Ratings:
HAZARD INDEX: 4E838, 4E838 Health: 3
SUPPLIER: Virginia KMP Fire: 0
4100 Platinum Way React: 0
Dallas, Texas 75237 Special: ACID
214-330-7731 0-LEAST to 4-EXTREME
Emergency Phone: Chemtrec 1-800-424-9300 HMIS PERSONAL PROT: C
International 202-483-7616

SECTION II - HAZARDOUS INGREDIENTS
HAZARDOUS COMPONENTS (CAS Number) EXPOSURE LIMITS
Phosphoric acid (7664-38-2) OSHA TWA 1 mg/M3, (PEL)
ACGIH 1 mg/M3, STEL 3mg/M3

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS
BOILING POINT: >2660 F
MELTING POINT: NA
SPECIFIC GRAVITY (H2O=1): 1.6
VAPOR PRESSURE (air = 1): 0.3 mmHg
VAPOR DENSITY (air=1): NA
EVAPORATION RATE (BuAc=1): ND
SOLUBILITY IN WATER: soluble
pH: 1.5
VOC: 0 g/l
APPEARANCE AND ODOR: clear colorless liquid

SECTION IV - FIRE AND EXPLOSION HAZARD DATA
FLASH POINT (Method): None
FLAMMABLE LIMITS: Lower [NA] Upper [NA]
EXTINGUISHING MEDIA: Dry powder, carbon dioxide (CO2), water fog
SPECIAL FIRE FIGHTING PROCEDURES: Approach fire from upwind
side. Avoid breathing smoke, fumes, mist, or vapors on the
downwind side. Firefighters wear protective clothing, and
self contained breathing apparatus.
UNUSUAL FIRE AND EXPLOSION HAZARDS: Firefighters wear protective
clothing, and self contained breathing apparatus.

SECTION V - REACTIVITY INFORMATION
STABILITY: PRODUCT IS Stable INCOMPATIBILITY:
MATERIALS TO AVOID: Alkaline materials, caustics.
HAZARDOUS DECOMPOSITION OR BYPRODUCTS: From combustion: smoke,
carbon monoxide, carbon dioxide, oxides of phosphorus.
HAZARDOUS POLYMERIZATION: Will not occur.

SECTION VI - HEALTH HAZARD DATA
ROUTES OF ENTRY
INHALATION? possible - corrosive
SKIN/EYES? yes - corrosive
SKIN ABSORPTION? unlikely unless skin is broken
INGESTION? possible - corrosive
HEALTH HAZARDS
Irritant: Corrosive to all body tissues.
Toxic: Kidney and liver damage possible.
MUTAGENICITY: LISTED IN NTP? No IARC MONOGRAPHS? No
REGULATED? No
SYMPTOMS OF EXPOSURE: Immediate irritation and burning
sensation followed by destruction of skin or eye tissue.
Symptoms of exposure may include burning sensation,
coughing, wheezing, laryngitis, shortness of breath,
headache, nausea and vomiting.
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:
Pre-existing skin disorders.
FIRST AID PROCEDURES
EYE CONTACT: Flush eyes with water 15 minutes. Get medical
attention if symptoms develop and persist.
SKIN CONTACT: Flush with water or soap and water for 15
minutes or until all traces have been removed. Seek
medical attention if symptoms develop and persist.
INGESTION: Do not induce vomiting. Rinse mouth out with
water. Get immediate medical attention.
INHALATION: Remove victim to fresh air and, if needed,
immediately begin artificial respiration. Give oxygen if
breathing is labored. Get emergency medical help. Contact
a physician immediately.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE
SPILL OR LEAK PROCEDURES: Emergency response coordinator must
have mandated training. Eliminate all ignition sources.
SMALL SPILLS: Pick up with absorbent materials and place in
non-leaking containers; seal tightly for proper disposal or
reuse.
LARGE SPILLS: Evacuate the hazard area of unprotected
personnel. Wear appropriate respirator and protective
clothing. Shut off source of leak if safe to do so. Dike
and contain. Remove with vacuum trucks or pump to
storage/salvage vessels.
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:
Store away from caustics/alkalies.
OTHER PRECAUTIONS: Clean up leaks/spills immediately to prevent
soil or water contamination.

SECTION VIII - CONTROL MEASURES
RESPIRATORY PROTECTION: NIOSH Approved respirator.
VENTILATION: LOCAL EXHAUST - Recommended, SPECIAL - Not
necessary MECHANICAL - Recommended, OTHER - Not necessary
PROTECTIVE GLOVES: Rubber
EYE PROTECTION: Chemical goggles or full face shield.
OTHER PROTECTIVE EQUIPMENT: Boots, aprons, drench showers, eye
wash as needed for protection against spills and/or
splashes.
WORK HYGIENIC PRACTICES: Avoid contact with skin, eyes, and
clothing. After handling this product, wash hands before
eating, drinking or smoking. If contact occurs, remove
contaminated clothing. If needed, take first aid action
shown in section VI. Launder contaminated clothing before
reuse.

SECTION IX - TRANSPORTATION INFORMATION
Phosphoric Acid, 8, UN1805, PG III

SECTION X - REGULATORY/ENVIRONMENTAL
HAZARDS: ACUTE-Yes, CHRONIC-Yes, FLAMMABILITY-No,
RELEASE OF PRESSURE-No, REACTIVE-No
CERCLA: 5000 lbs (phosphoric acid)
SARA Title III Section 313, Toxic Materials
Chemical Name CAS # Percentage

Phosphoric Acid (7664-38-2) 70 - 80%
CLEAN AIR ACT: Not listed
CLEAN WATER ACT: Section 311
STATES LISTS: Massachusetts, Pennsylvania, New Jersey
TOXIC SUBSTANCES CONTROL ACT (TSCA), 40 CFR 710
Sources of the raw materials used in this mixture assure
that all chemical ingredients present are in compliance
with Sect. 8(b) Chemical Substance Inventory, or are
otherwise in compliance with TSCA.

Footnotes:
NA-Not applicable ND-Data not available
CS-Cancer Suspect Agent
OX-Oxidizer Cor-Corrosive
CALC-Calculated EST-Estimated
STEL-Short Time Exposure Limit
TLV-Threshold Limit Value
PEL-Permissible Exposure Limit
TWA-Time Weighted Average, 8 hours
HMIS, PPI-Hazardous Material Identification System, Personal
Protection Index.

The data presented is true and correct to the best of our
knowledge and belief, however, neither seller nor preparer makes
any warranties, express or implied, concerning the information
presented. The user is cautioned to perform his own hazard
evaluation and to rely upon his own determinations.

SCIENTIFIC INFORMATION SERVICES
Telephone (817) 560-4631
Form essentially the same as OSHA Form 174 dated September 1985
Preparation date: July 11, 1991
Revise date: October 29, 1992