



MATERIAL SAFETY DATA SHEET

SECTION 1 - MANUFACTURER OR SUPPLIER DATA

MSDS NUMBER: U594100 343Z XX

MANUFACTURER'S NAME & MAILING ADDRESS: U.S. Chemical - A DIVISION OF HYDRITE CHEMICAL CO., 316 Harry Street, Watertown, Wisconsin 53094 USA

PREPARED BY: D. E. Kenas

SIGNATURE: David E. Kenas

DATE: 9-1-94

EMERGENCY TELEPHONE NO. (24 HOUR SERVICE): Medical Emergency ONLY: 1-800-228-5635 Ext. 075

PRODUCT INFORMATION: 1-800-558-9566

SECTION 2 - IDENTITY OF MATERIAL

PRODUCT NAME: CIRCULATE

PRODUCT DESCRIPTION: Lime Solvent (Acid Detergent)

FORMULA: Proprietary Blend

CHEMICAL FAMILY: N.A.

REGULATED IDENTIFICATION: CORROSIVE LIQUID, N.O.S. (CONTAINS NITRIC ACID, PHOSPHORIC ACID)

HAZARD CLASS: 8 (CORROSIVE MATERIAL)

PACKING GROUP: II

DOT Proper Shipping Name: N.A.

Shipping ID Number: UN1760

SECTION 3 - PHYSICAL/CHEMICAL CHARACTERISTICS

PROPERTY	VALUE	PROPERTY	VALUE
BOILING POINT	N.A.	SPECIFIC GRAVITY (20° = 1)	N.A.
MELTING POINT	1.175	COLOR	Light Green
VAPOR PRESSURE (mm Hg)	N.A.	SOLUBILITY IN WATER	Complete
VAPOR DENSITY (AIR = 1)	N.A.	SCENT	None Added
OTHER	N.A.	PH CONCENTRATE	Less Than 2.0

SECTION 4 - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

HAZARDOUS COMPONENTS (CHEMICAL NAME COMMON NAME)	OSHA PEL	ALPHA TLV	OTHER LIMITS RECOMMENDED	PERCENT
Orthophosphoric Acid: Phosphoric Acid	1 mg/m ³ TWA	1 mg/m ³ TWA	3 mg/m ³ STEL (ACGIH/OSHA)	23.0
Hydrogen Nitrate: Nitric Acid	2 ppm TWA	2 ppm TWA	4 ppm STEL (ACGIH/OSHA)	5.5

This product contains no other ingredient considered hazardous according to the criteria of 29 CFR 1910.1200, OSHA. However, this product contains chemicals which may be subject to reporting requirements according to the criteria of SARA Title III, 40 CFR, Part 370, Section 311 and Section 312. This product also contains chemicals which may be subject to reporting requirements according to the criteria of SARA Title III, 40 CFR, Part 372, Section 313.

STATE RIGHT TO KNOW INFORMATION
THIS PRODUCT CONTAINS: WATER/7732-18-5, PHOSPHORIC ACID/7664-38-2, NITRIC ACID/7697-37-2, POLOXAMER/9003-11-6

NFPA RATING: Health-3/Flammability-0/Reactivity-0
HMIS RATING: Health-3/Flammability-0/Reactivity-1

See Section 5 for Protective Equipment.
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CARCINOGENICITY: This product does not contain any known carcinogens or anticipated carcinogens according to the criteria of the NTP Annual Report on Carcinogens, IARC Monographs, and OSHA 29 CFR 1910, Subpart Z.

SECTION 5 - SAFE USAGE DATA

PROTECTIVE EQUIPMENT TYPES	RESPIRATORY: Splash-proof safety glasses, safety goggles, and an eye-wash station. GLOVES: Rubber (Latex). Protective Cuff or Gauntlet Type Preferred.
OTHER	None required with normal use.
GENERAL MECHANICAL	Wear full-cover protective clothing to prevent repeated or prolonged contact.
VENTILATION	Satisfactory. Maintain adequate ventilation. Keep levels below recommended TLV. LOCAL EXHAUST
HANDLING & STORAGE	Not ordinarily needed. Avoid inhalation of mists containing this product.
PRECAUTIONS	Precautions and first-aid measures. Avoid inhalation. Ingestion and contact with skin and eyes. Rotate stock regularly. Handle carefully to avoid damaging container. Keep container closed when not in use. Recommended storage temperature below 100° F. Keep out of children's reach.

SECTION 6 - HEALTH HAZARD DATA

EFFECTS OF EXPOSURE	INHALATION: Corrosive. Inhalation of mist may cause irritation to nose, throat and mucous membranes, pulmonary irritation, pulmonary edema, tissue damage and chemical burns. INGESTION: Corrosive. Harmful or fatal if swallowed. May cause nausea, vomiting, and severe tissue damage to digestive tract. Corrosive to mouth, throat, stomach and to other tissues. SKIN/ EYES: SKIN: Corrosive. Contact may cause severe irritation, dermatitis, and chemical burns. EYES: Corrosive. Causes eye burns. May cause temporary or permanent vision loss and blindness. ACUTE & CHRONIC ACUTE: Corrosive to all body tissues. Harmful skin contact may not cause immediate pain. Permanent eye damage may result without immediate first aid treatment. CHRONIC: None Known
ROUTES OF EXPOSURE	INGESTION-X SKIN ABSORPTION-TARGET ORGANS: Eyes, Skin, Respiratory System SKIN-X EYES-X INHALATION-X

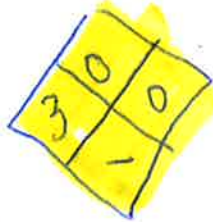
SECTION 7 - PHYSICAL HAZARD DATA

FLAMMABILITY	LEL = N.A. UEL = N.A. FLASH POINT = N.A. METHOD USED = N.A.
STABILITY	CONDITIONS TO AVOID: Avoid mixing with any other cleaning product. Mix only with water. Do not store at high temperatures. Recommended storage temperature below 100° F. HAZARDOUS DECOMPOSITION PRODUCTS: May react with certain metals to produce flammable hydrogen gas. Mixing with strong alkali can generate steam.
HAZARDOUS POLYMERIZATION	WILL NOT OCCUR
INCOMPATIBILITY	MATERIALS TO AVOID: Alkaline materials, chlorinated compounds, and metals such as aluminum, zinc, tin, etc., and cyanides, sulfides, and sulfites. Avoid sodium hypochlorite or bleach.

SECTION 8 - EMERGENCY RESPONSE DATA

FIRE	EXTINGUISHING MEDIA: For fires in area, use appropriate media. For example: Water spray, dry chemical, carbon dioxide, or alcohol foam. SPECIAL PROCEDURES: Evacuate area of unprotected personnel. Wear protective clothing, goggles, and face shield. Cool fire-exposed containers with water spray. UNUSUAL HAZARDS: Product may react with some metals such as aluminum, zinc, tin, etc., to release flammable hydrogen gas.
FIRST AID MEASURES	INGESTION: Do not induce vomiting. If patient is conscious and can swallow, administer milk or water. SKIN: Remove contaminated clothes, flood with water for 15 minutes. EYES: Flood with lukewarm (not hot) water poured from a large glass 2 or 3 inches from eyes. Remove contacts. Have patient blink as much as possible while flooding the eyes. Continue for 15 minutes. IMMEDIATE: Have victim to fresh air. Give artificial respiration if patient is not breathing. ADMINISTER FIRST AID TREATMENT AS STATED ABOVE. THEN CALL 1-800-228-5635 Ext 075 OR CONTACT PHYSICIAN FOR FURTHER MEDICAL INSTRUCTIONS
SPILLS	STEPS TO BE TAKEN: Wear proper protective equipment including rubber boots. Stop leak if you can do so without risk. Dike or dam large spills. Ventilate area if needed. Soak up with sand or other non-combustible inert absorbent materials. Flush area with water and follow with normal clean-up procedures. Keep combustibles away! Be careful as spills are slippery.
DISPOSAL	WASTE DISPOSAL METHOD: Comply with all federal, state, and local regulations. Consult state and local authorities for restrictions on disposal of chemical waste. If approved, may be diluted and drained to a municipal sewer or waste treatment plant. Rinse empty container thoroughly with water before discarding. Please recycle empty container whenever possible.

THE DATA IN THIS MATERIAL SAFETY DATA SHEET RELY ONLY TO THE SPECIAL MATERIAL ASSAYED AND POSTERIOR TO ITS USE IN CONNECTION WITH ANY OTHER MATERIAL OR PROCESS. THE DATA CONTAINED IS BELIEVED TO BE ACCURATE. HOWEVER, SINCE USE CONDITIONS VARY, AND SINCE OUR POLICY IS TO PROVIDE THE MOST CURRENT AND COMPLETE INFORMATION, WE MAKE NO WARRANTIES, EXPRESSED OR IMPLIED, AND ASSUMES NO LIABILITY FOR FAILURE TO FOLLOW PRODUCT USE DIRECTIONS AND SAFETY PRECAUTIONS.



HEALTH: 3
FLAMMABILITY: 0
REACTIVITY: 0

Tasker wash Solution