

CATALOG NUMBER: 977009

MATERIAL SAFETY DATA SHEET

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I. PRODUCT IDENTIFICATION

PRODUCT NAME: ACID REAGENT (RESIDUAL CHLORINE MEASUREMENT)

EFFECTIVE DATE: 04/20/94
HAZAROUS SHIPMENT LABELING (DOT/IATA):
UN2790 / UN2790 BOTH ACETIC ACID SOLUTION.

II. HAZARDOUS INGREDIENTS (IDENTIFY INFORMATION)

HAZARDOUS COMPONENTS* SPECIFIC CHEMICAL IDENTITY	CAS#	%	OSHA PEL	ACGIH TLV	LD (50MG/KG)
ACETIC ACID (ETHANOIC ACID) (C2H4O2)	64-19-7	23.0	10 PPM	25 MG/M3	308 (UNK-MAN)
SODIUM ACETATE (C2H3NAC2)	127-09-31	14.7	NONE	NONE	1,300 (ORL-DOG)
**DEIONIZED WATER (H2O)	7732-18-5	62.3	NONE	NONE	629,000 (ORL-DOG)

III. PHYSICAL DATA

BOILING POINT(750MMHG): 100C
SPECIFIC GRAVITY(H2O=1): 1.03
PH @ 25 C: 4(BUFFERED)
VOLATILES, % BY WT: 23%
VAPOR DENSITY(AIR=1): 2.1
APPEARANCE AND ODOR: COLORLESS, LIQUID, PUNGENT VINEGAR-LIKE ODOR.

FREEZING POINT: 24 F
VAPOR PRESSURE: NA*
SOLUBILITY IN H2O, % BY WT: MISCIBLE
EVAPORATION RATE(BUAC=1): NA

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (TEST METHOD): 41C (106F) CLOSED CUP.
AUTOIGNITION TEMPERATURE: 427C (800F)
FLAMMABLE LIMITS IN AIR, % BY VOLUME: (@100C) LEL: 5.4% UEL: 16.0%
EXTINGUISHING MEDIA: ANY.

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(SECTION IV. CONTINUED...)
SPECIAL FIRE-FIGHTING PROCEDURES: WEAR SELF-CONTAINED BREATHING APPARATUS.

UNUSUAL FIRE & EXPLOSION HAZARDS: MODERATE IF EXPOSED TO FLAME: CAN REACT
VIGORASOUSLY WITH OXIDIZING MATERIALS. EMITS TOXIC FUMES IF HEATED TO
DECOMPOSITION.

V. REACTIVITY DATA

STABILITY: STABLE
CONDITIONS TO AVOID: HEAT.

INCOMPATIBILITY (MATERIALS TO AVOID): STRONG CAUSTICS CAN CAUSE VIOLENT SPLATTERING. STRONG OXIDIZERS (CHROMIC ACID, SODIUM PEROXIDE, NITRIC ACID, ETC.) MAY CAUSE FIRE OR EXPLOSION.

HAZARDOUS DECOMPOSITION PRODUCTS: TOXIC GASES SUCH AS CARBON MONOXIDE MAY BE RELEASED IN FIRE.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.
CONDITION TO AVOID: NONE

VI. HEALTH HAZARD DATA

ROUTE(S) OF ENTRY: INHALATION, SKIN, INGESTION. CORROSIVE.

HEALTH HAZARDS (ACUTE & CHRONIC):

ACUTE - BURNS OF SKIN OR EYES, VAPORS IRRITATING TO EYES, NOSE, THROAT, LUNGS (CAN CAUSE SEVERE DAMAGE); SWALLOWING MAY CAUSE SEVERE INJURY OR DEATH.
CHRONIC - DARKENED SKIN, EROSION OF TEETH, IRRITATION AS ABOVE.

CARCINOGENICITY: NOT FOUND ON THESE LISTS (NTP, IARC MONOGRAPHS, OSHA REGULATED)

SIGNS AND SYMPTOMS OF EXPOSURE: COUGHING, TEARING, RED, IRRITATED SKIN OR EYES

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: PERSONS WITH BREATHING DIFFICULTY OR SENSITIVE SKIN MAY BE AFFECTED.

EMERGENCY AND FIRST AID PROCEDURES:

ALL: CONTACT PHYSICIAN. EYES/SKIN: FLUSH WITH LARGE AMOUNTS OF WATER.
INHALATION: FRESH AIR, ARTIFICIAL RESPIRATION IF NECESSARY. INGESTION: DO NOT INDUCE VOMITING. GIVE LARGE AMOUNTS OF WATER.

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VII. PRECAUTIONS (SAFE HANDLING & USE)

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: REMOVE ALL IGNITION SOURCES. WEAR PROTECTIVE CLOTHING, VENTILATE AREA, ABSORB ON PAPER TOWELS, EVAPORATE IN HOOD, OR FOLLOW PROCEDURE BELOW.

WASTE DISPOSAL METHOD: CAREFULLY NEUTRALIZE WITH A BASIC MATERIAL, FLUSH RESULTANT SODIUM ACETATE INTO SEWER WITH PLENTY OF WATER IF FEDERAL, STATE, AND LOCAL LAWS ALLOW.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: KEEP AWAY FROM HEAT, STRONG OXIDIZERS, AND CAUSTIC MATERIAL. NFPA RATING: SCALE (0-4);
HEALTH - 2, FIRE - 2, REACTIVITY - 0, SPECIFIC - ACID.

OTHER PRECAUTIONS:

STORE AT ROOM TEMPERATURE. SARA TITLE III: ACETIC ACID IS A CERCLA HAZARD & IS SUBJECT TO REPORTING UNDER SECTIONS 304, 311, AND 312 OF THIS LAW. NOT FOUND ON CAL. PROP 65 LISTING. COMPONENTS ARE REPORTED IN TSCA INVENTORY.

VIII. CONTROL MEASURES

RESPIRATORY PROTECTION (SPECIFIC TYPE): SELF-CONTAINED BREATHING APPARATUS FOR SPILLS, ETC.

VENTILATION: LOCAL EXHAUST. MECHANICAL (GENERAL) IF TRANSFERRING.

PROTECTIVE GLOVES: IMPERVIOUS GLOVES.

EYE PROTECTION: SPLASH PROOF SAFETY GOGGLES.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: IMPERVIOUS CLOTHING.

WORK/HYGIENIC PRACTICES: WASH THOROUGHLY AFTER HANDLING.

* CHEMICALS WHICH ARE NOT CLASSIFIED AS HAZARDOUS PER U.S. OSHA GUIDELINES
(29 CFR PARTS 1915.2 OR 1916.2) OR THE MASSACHUSETTS SUBSTANCE LIST (105 CMR
670.000 APPENDIX A) WILL NOT NECESSARILY BE LISTED ON THIS FORM EVEN THOUGH
ONE OR MORE MAY BE A CONSTITUENT OF THIS PRODUCT.

*NA = NOT AVAILABLE/NOT APPLICABLE

** NON-HAZARDOUS COMPONENT

LIABILITY IS EXPRESSLY DISCLAIMED FOR ANY LOSS OR INJURY ARISING OUT OF THE USE
OF THIS INFORMATION OR THE USE OF ANY MATERIALS DESIGNATED. SAFE USE OF THE
MATERIALS IS RESPONSIBILITY OF THE USER.