

DATE: 08/14/93 ACCT: 888235-01
 INDEX: 05932224478 CAT NO: 5311500 PO NBR: Q D 18721

**ETHYLENEDIAMINETETRAACETIC ACID, DISODIUM SALT, DIHYDRATE*
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MATERIAL SAFETY DATA SHEET

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SUBSTANCE IDENTIFICATION

CAS-NUMBER 6381-92-6
 SUBSTANCE: **ETHYLENEDIAMINETETRAACETIC ACID, DISODIUM SALT, DIHYDRATE**

TRADE NAMES/SYNONYMS:
 EDTA, DISODIUM DIHYDRATE;
 N,N'-1,2-ETHANEDIYLBIS(N-(CARBOXYMETHYL)-GLYCINE, DISODIUM SALT,
 DIHYDRATE;
 (ETHYLENEDINITRIL)TETRA-ACETIC ACID, DISODIUM SALT, DIHYDRATE;
 ETHYLENEDIAMINE TETRAACETATE ACID DISODIUM SALT, DIHYDRATE;
 DISODIUM EDTA DIHYDRATE;
 GLYCINE, N,N'-1,2-ETHANEDIYLBIS(N-(CARBOXYMETHYL)-, DISODIUM,
 DIHYDRATE;
 DISODIUM ETHYLENEDIAMINE TETRAACETATE DIHYDRATE; S311; 02793;
 C10H18N2NA2O10; ACC08308

CHEMICAL FAMILY:
 EDETATE

MOLECULAR FORMULA: C10-H14-O8-N2.2NA.2H2O

MOLECULAR WEIGHT: 372.14

CFRCLA RATINGS (SCALE 0-3): HEALTH=3 FIRE=1 REACTIVITY=0 PERSISTENCE=1
 NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=1 REACTIVITY=0

COMPONENTS AND CONTAMINANTS

COMPONENT: ETHYLENEDIAMINETETRAACETIC ACID, DISODIUM SALT, DIHYDRATE PERCENT: 100.0

CAS# 6381-92-6

OTHER CONTAMINANTS: NONE

EXPOSURE LIMITS:
 NO OCCUPATIONAL EXPOSURE LIMITS ESTABLISHED BY OSHA, ACGIH, OR NIOSH.

PHYSICAL DATA

DESCRIPTION: WHITE CRYSTALLINE SOLID.

MELTING POINT: 486 F (252 C) (DECOMPOSES) SPECIFIC GRAVITY: NOT AVAILABLE

PH: 5.3 @ AQUEOUS SOLN. SOLUBILITY IN WATER: SOLUBLE

FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD:
 SLIGHT FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME.

DUST-AIR MIXTURES MAY IGNITE OR EXPLODE.

FIREFIGHTING MEDIA:
 DRY CHEMICAL, CARBON DIOXIDE, WATER SPRAY OR REGULAR FOAM
 (1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5).

FOR LARGER FIRES, USE WATER SPRAY, FOG OR REGULAR FOAM
 (1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5).

FIREFIGHTING:
 MOVE CONTAINER FROM FIRE AREA IF YOU CAN DO IT WITHOUT RISK. DO NOT SCATTER
 SPILLED MATERIAL WITH HIGH-PRESSURE WATER STREAMS. DIKE FIRE-CONTROL WATER FOR
 LATER DISPOSAL (1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5, GUIDE

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USE AGENTS SUITABLE FOR TYPE OF SURROUNDING FIRE. AVOID BREATHING CORROSIVE
 DUSTS OR VAPORS, KEEP UPWIND.

TOXICITY

ETHYLENEDIAMINETETRAACETIC ACID, DISODIUM SALT:

TOXICITY DATA:

ANHYDROUS: 2 GM/KG ORAL-RAT LD50; 2300 MG/KG ORAL-RABBIT LD50; 2050 MG/KG
 ORAL-MOUSE LD50; 3735 MG/KG SUBCUTANEOUS-RAT LD50; 56 MG/KG
 INTRAVENOUS-MOUSE LD50; 47 MG/KG INTRAVENOUS-RABBIT LD50; 260 MG/KG
 INTRAPERITONEAL-MOUSE LD50; MUTAGENIC DATA (RTECS); REPRODUCTIVE EFFECTS
 DATA (RTECS).

DIHYDRATE: MUTAGENIC DATA (RTECS).

CARCINOGEN STATUS: NONE.

LOCAL EFFECTS: IRRITANT- EYE.

ACUTE TOXICITY LEVEL: MODERATELY TOXIC BY INGESTION.

TARGET EFFECTS: POISONING MAY AFFECT THE KIDNEYS.

AT INCREASED RISK FROM EXPOSURE: PERSONS WITH RENAL OR HEART DISEASE;

A HISTORY OF SEIZURES OR INTRACRANIAL LESIONS; POTASSIUM DEFICIENCY;

OR INSULIN-DEPENDENT DIABETES.

ADDITIONAL DATA: PARENTERAL ADMINISTRATION OF EDTA OR ITS SALTS IN HIGH

DOSES MAY CAUSE SEVERE RENAL LESIONS AND TUBULAR NECROSIS, INTERNAL

HEMORRHAGE, LIFE-THREATENING HYPOCALCEMIA, AND DEATH. PROLONGED

PARENTERAL ADMINISTRATION MAY LEAD TO ELECTROLYTE IMBALANCE, AND

CARDIAC ARRHYTHMIAS.

HEALTH EFFECTS AND FIRST AID

INHALATION:

ETHYLENEDIAMINETETRAACETIC ACID, DISODIUM SALT:

ACUTE EXPOSURE- NO SPECIFIC DATA AVAILABLE. INHALATION OF DUSTS OR MISTS
 OF EDTA SALTS MAY CAUSE MUCOUS MEMBRANE IRRITATION WITH SORE THROAT AND
 COUGHING.

CHRONIC EXPOSURE- NO DATA AVAILABLE.

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING
 HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP PERSON WARM AND AT REST.
 TREAT SYMPTOMATICALLY AND SUPPORTIVELY. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT:

ETHYLENEDIAMINETETRAACETIC ACID, DISODIUM SALT:

ACUTE EXPOSURE- NO SPECIFIC DATA AVAILABLE. EDTA SALTS MAY CAUSE
 IRRITATION WITH REDNESS AND PAIN.

CHRONIC EXPOSURE- REPEATED OR PROLONGED CONTACT WITH EDTA SALTS MAY CAUSE
 MODERATE IRRITATION AND POSSIBLY A MILD BURN.

FIRST AID- REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH AFFECTED
 AREA WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER UNTIL NO
 EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL
 ATTENTION IMMEDIATELY.

EYE CONTACT:

ETHYLENEDIAMINETETRAACETIC ACID, DISODIUM SALT:

IRRITANT.

ACUTE EXPOSURE- CONTACT WITH EDTA SALTS MAY CAUSE IRRITATION WITH REDNESS,
 PAIN, AND SOME TRANSIENT CORNEAL INJURY.

CHRONIC EXPOSURE- REPEATED OR PROLONGED CONTACT WITH EDTA SALTS MAY CAUSE
 CONJUNCTIVITIS.

FIRST AID- WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER OR NORMAL SALINE,
 OCCASIONALLY LIFTING UPPER AND LOWER LIDS, UNTIL NO EVIDENCE OF CHEMICAL
 REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION:

ETHYLENEDIAMINETETRAACETIC ACID, DISODIUM SALT:

ACUTE EXPOSURE- SOLUTIONS OF THE SALTS OF EDTA ARE EXTREMELY IRRITATING TO
 THE GASTROINTESTINAL SYSTEM, ALTHOUGH POORLY ABSORBED, IF SUFFICIENT
 AMOUNTS ARE INGESTED SYSTEMIC TOXICITY MAY RESULT. EDTA AND ITS SALTS
 MAY CHELATE LEAD, MAGNESIUM, ZINC, AND TRACE METALS IF THEY ARE PRESENT
 IN THE INTESTINE, POSSIBLY CAUSING THEIR INCREASED ABSORPTION AND
 THEREBY INCREASING TOTAL BODY STORES OF THESE METALS.

CHRONIC EXPOSURE- IN FEEDING STUDIES, RATS FED A DIET OF 5 AND 10% EDTA
 DISODIUM SALTS FOR UP TO 13 WEEKS SHOWED DECREASED FOOD CONSUMPTION
 AND WEIGHT GAIN WHEN COMPARED TO CONTROLS. THESE RATS ALSO SUFFERED FROM
 DIARRHEA AND PRIAPISM. A 60% MORTALITY OCCURRED IN THE 10% DIET GROUP, AND
 20% MORTALITY IN THE 5% GROUP. REPRODUCTIVE EFFECTS HAVE BEEN REPORTED
 IN ANIMAL STUDIES.

FIRST AID- TREAT SYMPTOMATICALLY AND SUPPORTIVELY. GET MEDICAL ATTENTION
 IMMEDIATELY. IF VOMITING OCCURS, KEEP HEAD LOWER THAN HIPS TO PREVENT
 ASPIRATION.

ANTIDOTE:

NO SPECIFIC ANTIDOTE. TREAT SYMPTOMATICALLY AND SUPPORTIVELY.

REACTIVITY

REACTIVITY:
STABLE UNDER NORMAL TEMPERATURES AND PRESSURES.

INCOMPATIBILITIES:
ETHYLENEDIAMINETETRAACETIC ACID, TETRASODIUM SALT:
ACIDS: INCOMPATIBLE
ALUMINUM: MAY FORM FLAMMABLE HYDROGEN GAS.
METALS: MAY FORM FLAMMABLE HYDROGEN GAS
OXIDIZERS (STRONG): FIRE AND EXPLOSION HAZARD.

DECOMPOSITION:
THERMAL DECOMPOSITION PRODUCTS MAY INCLUDE TOXIC AND HAZARDOUS OXIDES OF CARBON, NITROGEN, AND SODIUM.

POLYMERIZATION:
HAZARDOUS POLYMERIZATION HAS NOT BEEN REPORTED TO OCCUR UNDER NORMAL TEMPERATURES AND PRESSURES.

STORAGE AND DISPOSAL

OBSERVE ALL FEDERAL, STATE AND LOCAL REGULATIONS WHEN STORING OR DISPOSING OF THIS SUBSTANCE.

STORAGE

STORE AWAY FROM INCOMPATIBLE SUBSTANCES.

CONDITIONS TO AVOID

MAY BURN BUT DOES NOT IGNITE READILY. AVOID CONTACT WITH STRONG OXIDIZERS, EXCESSIVE HEAT, SPARKS, OR OPEN FLAME.

PREVENT DISPERSION OF DUST IN AIR.

SPILL AND LEAK PROCEDURES

OCCUPATIONAL SPILL:
SWEEP UP AND PLACE IN SUITABLE CLEAN, DRY CONTAINERS FOR RECLAMATION OR LATER DISPOSAL. DO NOT FLUSH SPILLED MATERIAL INTO SEWER. KEEP UNNECESSARY PEOPLE AWAY.

PROTECTIVE EQUIPMENT

VENTILATION:
PROVIDE LOCAL EXHAUST VENTILATION. VENTILATION EQUIPMENT MUST BE EXPLOSION PROOF.

RESPIRATOR:
THE FOLLOWING RESPIRATORS ARE RECOMMENDED BASED ON INFORMATION FOUND IN THE PHYSICAL DATA, TOXICITY AND HEALTH EFFECTS SECTIONS. THEY ARE RANKED IN ORDER FROM MINIMUM TO MAXIMUM RESPIRATORY PROTECTION.
THE SPECIFIC RESPIRATOR SELECTED MUST BE BASED ON CONTAMINATION LEVELS FOUND IN THE WORK PLACE, MUST BE BASED ON THE SPECIFIC OPERATION, MUST NOT EXCEED THE WORKING LIMITS OF THE RESPIRATOR AND MUST BE JOINTLY APPROVED BY THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH AND THE MINE SAFETY AND HEALTH ADMINISTRATION (NIOSH-MSHA).

ANY DUST AND MIST RESPIRATOR.

ANY AIR-PURIFYING RESPIRATOR WITH A HIGH-EFFICIENCY PARTICULATE FILTER.

ANY POWERED AIR-PURIFYING RESPIRATOR WITH A DUST AND MIST FILTER.

ANY POWERED AIR-PURIFYING RESPIRATOR WITH A HIGH-EFFICIENCY PARTICULATE FILTER.

ANY TYPE 'C' SUPPLIED-AIR RESPIRATOR OPERATED IN THE PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE OR CONTINUOUS-FLOW MODE.

ANY SELF-CONTAINED BREATHING APPARATUS.

FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS:

ANY SELF-CONTAINED BREATHING APPARATUS THAT HAS A FULL FACEPIECE AND IS OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE.

ANY SUPPLIED-AIR RESPIRATOR THAT HAS A FULL FACEPIECE AND IS OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE IN COMBINATION WITH AN AUXILIARY SELF-CONTAINED BREATHING APPARATUS OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE.

CLOTHING:
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE (IMPERVIOUS) CLOTHING AND EQUIPMENT TO PREVENT REPEATED OR PROLONGED SKIN CONTACT WITH THIS SUBSTANCE.

GLOVES:
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE GLOVES TO PREVENT CONTACT WITH THIS SUBSTANCE.

EYE PROTECTION:
EMPLOYEE MUST WEAR SPLASH-PROOF OR DUST-RESISTANT SAFETY GOGGLES TO PREVENT EYE CONTACT WITH THIS SUBSTANCE.

EMERGENCY EYE WASH: WHERE THERE IS ANY POSSIBILITY THAT AN EMPLOYEE'S EYES MAY BE EXPOSED TO THIS SUBSTANCE, THE EMPLOYER SHOULD PROVIDE AN EYE WASH FOUNTAIN WITHIN THE IMMEDIATE WORK AREA FOR EMERGENCY USE.

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