Material Safety Data Sheet
Ethylenediamine Tetraacetic Acid

ACC# 09570

Section 1 - Chemical Product and Company Identification

MSDS Name: Ethylenediamine Tetraacetic Acid
Catalog Numbers: S80007, S80007-1, BP118-500, E478-1, E478-10, E478-500, S80008MF
Synonyms: Acetic acid, (ethylenedinitrilo)tetra-; 3,6-Diazaoctanedioic acid, 3,6-bis(carboxymethyl)-; Edetic acid; EDTA; EDTA (chelating agent); EDTA acid; Endrate; N,N'-1,2-Ethanediylbis(N-(carboxymethyl)glycine); Ethylenediaminetetraacetic acid; Ethylenediamine
Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
60-00-4	Ethylenediamine tetraacetic acid	>99	200-449-4

Hazard Symbols: XI
Risk Phrases: 36/37/38

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless to white crystals. May cause kidney damage. May cause reproductive and fetal effects.
Warning! Causes eye and skin irritation. Causes respiratory tract irritation.
Target Organs: Kidneys, eyes, skin.

Potential Health Effects

Eye: Causes eye irritation. Causes redness and pain.
Skin: Causes skin irritation. Causes redness and pain.
Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Ingestion of large amounts can cause hypocalcemic tetany due to formation of calcium complexes. Exposure may cause kidney injury, muscle cramps, bone-marrow depression, and a generalized allergic reaction. Ingestion of large quantities may cause appreciable systemic toxicity involving blood chemistry changes due to chelation properties.
Inhalation: Causes irritation of the mucous membrane and upper respiratory tract.
Chronic: May cause reproductive and fetal effects. Laboratory experiments have resulted in mutagenic effects. Chronic exposure may cause kidney damage.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin: Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
Ingestion: Never give anything by mouth to an unconscious person. Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.
Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Dusts at sufficient concentrations can form explosive mixtures with air. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or appropriate foam.
Flash Point: Not applicable.
Autoignition Temperature: Not applicable.
Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 2; Flammability: 1; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with skin and eyes. Keep container tightly closed. Avoid breathing dust.
Storage: Do not store in direct sunlight. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ethylenediamine tetraacetic acid	none listed	none listed	none listed

OSHA Vacated PELs: Ethylenediamine tetraacetic acid: No OSHA Vacated PELs are listed for this chemical.
Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

Section 9 - Physical and Chemical Properties

Physical State: Crystals
Appearance: colorless to white
Odor: odorless
pH: Not available.
Vapor Pressure: Negligible.
Vapor Density: Not available.
Evaporation Rate: Negligible.
Viscosity: Not available.
Boiling Point: Not available.
Freezing/Melting Point:220 deg C
Decomposition Temperature:240 deg C
Solubility: Slightly soluble.
Specific Gravity/Density:0.86 @ 20C
Molecular Formula:C10H16N2O8
Molecular Weight:292.25

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions. Decarboxylates above 150C.
Conditions to Avoid: Dust generation, excess heat.
Incompatibilities with Other Materials: Strong oxidizing agents, strong bases, aluminum, copper, copper alloys, nickel.
Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 60-00-4: AH4025000
LD50/LC50:

CAS# 60-00-4:
Oral, mouse: LD50 = 30 mg/kg;
Carcinogenicity:
CAS# 60-00-4: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology: No information available.
Teratogenicity: Embryo or Fetus: Stunted fetus, oral-rat TDLo=7632mg/kg. Specific developmental abnormalities: cardiovascular, craniofacial, musculoskeletal, respiratory, and urogenital, oral-rat TDLo=7632mg/kg.
Reproductive Effects: Fertility: Post-implantation mortality, oral-rat TDLo=7632mg/kg.
Neurotoxicity: No information available.
Mutagenicity: Cytogenetic Analysis: intraperitoneal-mouse 50mmol/L. DNA Inhibition: hamster fibroblast 500ug/L, rabbit kidney 250umol/L.
Other Studies: None.

Section 12 - Ecological Information

Ecotoxicity: Fish: Channel catfish: LC50 = 129-159 mg/L; 96Hr; UnspecifiedFish: Rainbow trout: LC50 = 340 mg/L; 24Hr; UnspecifiedFish: Bluegill/Sunfish: LC50 = 129-159 mg/L; 96Hr; UnspecifiedFish: Fathead Minnow: 100% Lethal = 750 ppm; 96 Hr; Static bioassayWater flea Daphnia: LC50 > 100 ppm; 96 Hr; Static bioassay If released to soil, EDTA is expected to complex with trace metals and alkaline earth metals present in the soil, thereby causing an increase in the total solubility of the metals. EDTA may eventually predominate as the Fe(III) chelate in acidic soils and as the Ca chelate in alkaline soils. Biodegradation of EDTA in aerobic soils is the dominant removal mechanism, although biodegradation in anaerobic soils is negligible. glycine. EDTA is not expected to bioaccumulate in aquatic organisms, adsorb to suspended solids or sediments or volatilize from water surfaces.
Environmental: EDTA and its chelates are expected to leach readily through soil and significant volatilization from soil is not expected. If released to water, EDTA is expected to complex with trace metals and alkaline earth metals. Biodegradation of EDTA is expected to take place relatively slowly under aerobic conditions and to be negligible under anaerobic conditions. Cometabolism has been suggested as the mechanism for EDTA biodegradation. EDTA may react with photochemically generated hydroxyl radicals (half-life 229 days) and it may photodegrade.
Physical: Compounds identified as possible biodegradation products of the ammonium ferric chelate of EDTA are as follows: ethylenediamine triacetic acid (ED3A), iminodiacetic acid (IDA), N,N-ethylenediamine diacetic acid (N,N-EDDA), N,N'-EDDA, ethylenediamine monoacetic acid (EDMA), nitrilotriacetic acid (NTA) and glycine. The following photodegradation products of Fe(III)-EDTA have been identified: carbon monoxide, formaldehyde, ED3A, N,N-EDDA, N,N'-EDDA, IDA, EDMA and glycine.
Other: None.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
					No

Shipping Name:	No information available.	information available.
Hazard Class:		
UN Number:		
Packing Group:		

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 60-00-4 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
SARA

CERCLA Hazardous Substances and corresponding RQs
CAS# 60-00-4: 5000 lb final RQ; 2270 kg final RQ
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
Section 313
No chemicals are reportable under Section 313.
Clean Air Act:
This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.
Clean Water Act:
CAS# 60-00-4 is listed as a Hazardous Substance under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.
STATE
CAS# 60-00-4 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Massachusetts.
California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols:
XI
Risk Phrases:
R 36/37/38 Irritating to eyes, respiratory system
and skin.

Safety Phrases:
S 26 In case of contact with eyes, rinse immediately
with plenty of water and seek medical advice.
S 37/39 Wear suitable gloves and eye/face

protection.

WGK (Water Danger/Protection)
CAS# 60-00-4: 2
Canada - DSL/NDSL
CAS# 60-00-4 is listed on Canada's DSL List.
Canada - WHMIS
This product has a WHMIS classification of D2B.
Canadian Ingredient Disclosure List
Exposure Limits

Section 16 - Additional Information

MSDS Creation Date: 6/01/1999
Revision #3 Date: 11/09/2001