

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	Harmful compound, minimize exposure. Irritating to skin, eyes, and the respiratory system. POSSIBLE MUTAGEN. MINIMIZE EXPOSURE.	

Section I. Chemical Product and Company Identification

Chemical Name	Ethylenediaminetetraacetic Acid		
Catalog Number	E0084	Supplier	TCl America 9211 N. Harborsgate St. Portland OR 1-800-423-8616
Synonym	Glycine, N,N'-1,2-ethanediybis(N-(carboxymethyl)- (9 CI)		
Chemical Formula	(HOOCCH ₂) ₂ NCH ₂ CH ₂ N(CH ₂ COOH) ₂		
CAS Number	60-00-4	In case of Emergency Call	Chemtrec® (800) 424-9300 (U.S.) (703) 527-3887 (International)

Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
Ethylenediaminetetraacetic Acid	60-00-4	Min. 98.0 (T)	This compound is classified as a possible mutagen. There is no acceptable exposure limit for a mutagen.	Mouse LD ₅₀ (oral) 30mg/kg Rat LD ₅₀ (intraperitoneal) 397mg/kg Mouse LD ₅₀ (intraperitoneal) 250mg/kg

Section III. Hazards Identification

Acute Health Effects	Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.
Chronic Health Effects	CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Not available. DEVELOPMENTAL TOXICITY Reproductive Effects: Rat TDLo Oral, 7632 mg/kg, female 7-14 days of pregnancy. Toxic Effects: Specific Developmental Abnormalities - Eye, ear. Specific Developmental Abnormalities - Craniofacial Specific Developmental Abnormalities - Musculoskeletal system Specific Developmental Abnormalities - Cardiovascular Specific Developmental Abnormalities - Respiratory Specific Developmental Abnormalities - Urogenital system Effects on Embryo or Fetus -Post-implantation mortality Effects on Embryo or Fetus -Fetotoxicity Rat TDLo Subcutaneous, 3 gm/kg, female 7-14 days of pregnancy. Toxic Effects: Effects on Embryo or Fetus - Post-implantation mortality. Effects on Embryo or Fetus - Fetotoxicity. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

Section IV. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Inhalation	If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.
Ingestion	INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive.

Section V. Fire and Explosion Data

Flammability	May be combustible at high temperature.	Auto-Ignition	Not available.
Flash Points	100°C (212°F).	Flammable Limits	Not available.
Combustion Products	These products are toxic carbon oxides (CO, CO ₂), nitrogen oxides (NO, NO ₂).		
Fire Hazards	Not available.		
Explosion Hazards	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.		
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet. Consult with local fire authorities before attempting large scale fire-fighting operations.		

Section VI. Accidental Release Measures

Spill Cleanup Instructions	Harmful material. Irritating material. Possible mutagenic material. Use a shovel to put the material into a convenient waste disposal container. Finish cleaning the spill by rinsing any contaminated surfaces with copious amounts of water. Consult federal, state, and/or local authorities for assistance on disposal.
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Section VII. Handling and Storage

Handling and Storage Information	HARMFUL. IRRITANT. POSSIBLE MUTAGEN. Keep away from heat. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. Do not breathe dust. Always store away from incompatible compounds such as oxidizing agents, alkalis (bases).
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Section VIII. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Lab coat. Dust respirator. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. Be sure to use a MSHA/NIOSH approved respirator or equivalent.
	
Exposure Limits	This compound is classified as a possible mutagen. There is no acceptable exposure limit for a mutagen.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Solid. (White crystalline powder.)	Solubility	Soluble in sodium hydroxide solution.
Specific Gravity	0.86 (water=1)		
Molecular Weight	292.25	Partition Coefficient	Not available.
Boiling Point	Not available.	Vapor Pressure	<1.33 Pa
Melting Point	220°C (428°F) (Dec.)	Vapor Density	Not available.
Refractive Index	Not available.	Volatility	Not available.
Critical Temperature	Not available.	Odor	Not available.
Viscosity	Not available.	Taste	Not available.

Section X. Stability and Reactivity Data

Stability	This material is stable if stored under proper conditions. (See Section VII for instructions)
Conditions of Instability	Avoid excessive heat and light.
Incompatibilities	Reactive with strong oxidizing agents, strong alkalis (bases), Copper, copper alloys, nickel.

Section XI. Toxicological Information	
RTECS Number	AH4025000
Routes of Exposure	Eye Contact. Ingestion. Inhalation.
Toxicity Data	Mouse LD ₅₀ (oral) 30mg/kg Rat LD ₅₀ (intraperitoneal) 397mg/kg Mouse LD ₅₀ (intraperitoneal) 250mg/kg Not available.
Chronic Toxic Effects	CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Not available. DEVELOPMENTAL TOXICITY Reproductive Effects: Rat TDLo Oral, 7632 mg/kg, female 7-14 dyas of pregnancy. Toxic Effects: Specific Developmental Abnormalities - Eye, ear. Specific Developmental Abnormalities - Craniofacial Specific Developmental Abnormalities - Musculoskeletal system Specific Developmental Abnormalities - Cardiovascular Specific Developmental Abnormalities - Respiratory Specific Developmental Abnormalities - Urogenetal system Effects on Embryo or Fetus -Post-implantation mortality Effects on Embryo or Fetus -Fetotoxicity Rat TDLo Subcutaneous, 3 gm/kg, female 7-14 days of pregnancy. Toxic Effects: Effects on Embryo or Fetus - Post-implantation mortality. Effects on Embryo or Fetus - Fetotoxicity. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.
Acute Toxic Effects	Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Section XII. Ecological Information	
Ecotoxicity	Not available.
Environmental Fate	The primary sources of ethylenediamine tetraacetic acid (EDTA) released to the environment are probably domestic sewage and industrial effluents because of EDTA's detergent chelating applications. Other sources of release to the environment may include use of herbicides containing EDTA and land disposal of products which contain EDTA. 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. In various soils common values for mineralization of 2-4 ppm EDTA are 13-45% after 15 weeks and 65-70% after 45 weeks. 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. 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. EDTA may react with photochemically generated hydroxyl radicals (half-life 229 days) and it may photodegrade. 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. EDTA is not expected to bioaccumulate in aquatic organisms, adsorb to suspended solids or sediments or volatilize from water surfaces. If released to the atmosphere, EDTA should adsorb to particulate matter and appears to have the potential to photolyze. The most probable routes of human exposure to EDTA are ingestion and dermal contact since EDTA is used as a food additive, in herbicides, in pharmaceuticals and in a variety of consumer products (see also USE). Workers involved in the manufacture or use of EDTA may be exposed by inhalation or dermal contact.

Section XIII. Disposal Considerations	
Waste Disposal	Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.

Section XIV. Transport Information	
DOT Classification	Not a DOT controlled material (United States). DOT Reportable Quantity (RQ) ≠000lbs
PIN Number	Not applicable.
Proper Shipping Name	Not applicable.
Packing Group (PG)	Not applicable.
DOT Pictograms	

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Emergency phone number (800) 424-9300

Section XV. Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA)	This compound is ON the EPA Toxic Substances Control Act (TSCA) inventory list.
WHMIS Classification (Canada)	On DSL.
EINECS Number (EEC)	200-449-4
EEC Risk Statements	R20/21/22- Harmful by inhalation, in contact with skin and if swallowed. R36/37/38- Irritating to eyes, respiratory system and skin. R46- May cause heritable genetic damage. R47- May cause birth defects.
Japanese Regulatory Data	ECS No. 2-1263; 2-1296

Section XVI. Other Information

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Notice to Reader

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.