SAFETY DATA SHEET
TETRASODIUM EDTA 40%

1. PRODUCT INFORMATION AND COMPANY IDENTIFICATION

Product Name:	Tetrasodium EDTA 40%
INCI Name:	Tetrasodium ethylenediamine tetraacetate
CAS Number:	64-02-8
Company:	Chemistry Connection 253 Sturgis Road Conway, AR 72034 (501) 470-9689
Emergency Contact:	Chemtrec: 800-424-9300

2. HAZARD IDENTIFICATION

Hazard classification
GHS classification in accordance with 29 CFR 1910.1200
Corrosive to metals - Category 1
Acute toxicity - Category 4 - Inhalation
Skin irritation - Category 2
Serious eye damage - Category 1
Specific target organ toxicity - repeated exposure - Category 2 - Inhalation

Label elements
Hazard pictograms

Signal Word
DANGER!

Hazards
May be corrosive to metals.
Causes skin irritation.
Causes serious eye damage.
Harmful if inhaled.

May cause damage to organs (Respiratory Tract) through prolonged or repeated exposure if inhaled.

Precautionary statements
Prevention
Keep only in original container.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/ eye protection/ face protection.

Response
IF ON SKIN: Wash with plenty of soap and water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
Get medical advice/ attention if you feel unwell.
If skin irritation occurs: Get medical advice/ attention.
Take off contaminated clothing and wash before reuse.
Absorb spillage to prevent material damage.

Storage
Store in corrosive resistant container with a resistant inner liner.

Disposal
Dispose of contents/ container to an approved waste disposal plant.

Other hazards
No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

INCI NAME	CAS NO.	CONCENTRATION (%)
Tetrasodium ethylenediamine tetraacetate	64-02-8	38.0%
Water	7732-18-5	61.0%
Sodium Hydroxide	1310-73-2	≥1.0 – ≤1.7%

4. FIRST AID MEASURES

Description of first aid measures
General advice:
First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If

breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin contact: Wash off with plenty of water.

Eye contact: Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

Ingestion: Do not induce vomiting. Give one cup (8 ounces or 240 ml) of water or milk if available and transport to a medical facility. Do not give anything by mouth unless the person is fully conscious.

Most important symptoms and effects, both acute and delayed:
Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: Maintain adequate ventilation and oxygenation of the patient. Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If burn is present, treat as any thermal burn, after decontamination. Due to irritant properties, swallowing may result in burns and/or ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal or esophageal control if lavage is done. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING MEASURES

Extinguishing media
Suitable extinguishing media: To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

Unsuitable extinguishing media: No data available
Special hazards arising from the substance or mixture

Hazardous combustion products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: This material will not burn until the water has evaporated. Residue can burn.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location.. For protective equipment in post-fire or non-fire clean-up situations, see Section 8 of the safety data sheet..

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Evacuate area. Only trained and properly protected personnel must be involved in clean-up operations. Keep upwind of spill. Ventilate area of leak or spill. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Absorb with materials such as: Non-combustible material. Collect in suitable and properly labeled containers. Large spills: Dike area to contain spill. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Do not get in eyes. Avoid contact with skin and clothing. Do not swallow. Avoid breathing vapor. Use with adequate ventilation. Keep container closed. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Do not store in: Opened or unlabeled containers. Zinc. Aluminum and its alloys. Carbon steel. Copper. Copper alloys. Galvanized containers. Nickel. Store in the following material(s): Store in original unopened container. See Section 10 for more specific information. Additional storage and handling information on this product may be obtained by calling your sales or customer service contact.

Storage stability
Storage temperature: -25 - 50 °C (-13 - 122 °F)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulations	Type of Listing	Value
Sodium Hydroxide	ACGIH	C	2 mg/m3
	OSHA Z-1	TWA	2 mg/m3
	OSHA P0	C	2 mg/m3

Exposure controls
Engineering controls: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Individual protection measures
Eye/face protection: Use chemical goggles.

Skin protection
Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. Avoid gloves made of: Polyvinyl alcohol ("PVA"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.
The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Color	Colorless
Odor	Mild
Odor Threshold	No test data available.
pH	11.0 – 11.8 1% *Literature*
Melting point/range	Not applicable to liquids
Freezing point	≤ -25°C (≤ -13°F) *Literature*
Boiling point (760 mmHg)	106°C (223°F) *Literature*
Flash point	**Closed cup** *Pensky-Martens Closed Cup ASTM D 93* None

Evaporation Rate (Butyl Acetate =1)	<0.8 *Estimated*
Flammability (solid, gas)	Not applicable to liquids
Flammability (liquids)	Not expected to be a static-accumulating flammable liquid
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapor pressure	Same as water
Relative Vapor Density (air = 1)	Same as water
Relative Density (water = 1)	1.26 at 25°C (77°F) / 25°C *Literature*
Water solubility	Completely miscible
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	Not applicable
Decomposition temperature	No test data available
Kinematic Viscosity	11 cSt at 20°C (68°F) *Literature*
Explosive properties	No data available
Oxidizing properties	No data available
Molecular weight	380.2 g/mol *Literature*

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical stability: Stable under recommended storage conditions. See Storage, Section 7.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Exposure to elevated temperatures can cause product to decompose.

Incompatible materials: Avoid contact with: Oxidizers. Flammable hydrogen may be generated from contact with metals such as: Aluminum.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Ammonia. Nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.
Information on likely routes of exposure
Ingestion, Inhalation, Skin contact, Eye contact.

Acute toxicity (represents short term exposures with immediate effects - no chronic/delayed effects known unless otherwise noted)

Acute oral toxicity
Low toxicity if swallowed. Swallowing may result in gastrointestinal irritation or ulceration. Swallowing may result in burns of the mouth and throat.

For similar material(s):
LD50, Rat, 3,030 mg/kg Estimated.

Information for components:
Tetrasodium ethylenediamine tetraacetate
LD50, Rat, > 1,780 - < 2,000 mg/kg

Sodium hydroxide
Single dose oral LD50 has not been determined.

Acute dermal toxicity
Prolonged skin contact is unlikely to result in absorption of harmful amounts.
For similar material(s):
LD50, Rabbit, > 5,000 mg/kg Estimated.

Information for components:
Tetrasodium ethylenediamine tetraacetate
LD50, Rabbit, > 5,000 mg/kg

Sodium hydroxide
The dermal LD50 has not been determined.

Acute inhalation toxicity
Vapors are primarily water; single exposure is not likely to be hazardous. Prolonged excessive exposure to mist may cause serious adverse effects, even death. Mist may cause irritation of upper respiratory tract (nose and throat).

As product: The LC50 has not been determined.

Information for components:
Tetrasodium ethylenediamine tetraacetate
The LC50 has not been determined.

Sodium hydroxide
The LC50 has not been determined.

Skin corrosion/irritation
Based on product testing:
Prolonged contact may cause skin irritation with local redness.
Repeated contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage.
May cause more severe response if skin is abraded (scratched or cut).
May cause more severe response on covered skin (under clothing, gloves).
Mist may cause skin irritation.

Information for components:
Tetrasodium ethylenediamine tetraacetate
Essentially nonirritating to skin.
May cause more severe response if skin is abraded (scratched or cut).
May cause more severe response if skin is damp.

Sodium hydroxide
Brief contact may cause severe skin burns. Symptoms may include pain, severe local redness and tissue damage.

Serious eye damage/eye irritation
Based on product testing:
May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

Information for components:
Tetrasodium ethylenediamine tetraacetate
May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

Sodium hydroxide
May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.
Dust may irritate eyes.

Sensitization
For skin sensitization:
Relevant data not available.
For respiratory sensitization:
Relevant data not available.

Information for components:
Tetrasodium ethylenediamine tetraacetate
A similar material did not cause allergic skin reactions when tested in humans.
No signs of respiratory sensitization have been reported.

Sodium hydroxide
Did not cause allergic skin reactions when tested in humans.
For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Information for components:
Tetrasodium ethylenediamine tetraacetate
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Sodium hydroxide
Material is corrosive. Material is not classified as a respiratory irritant; however, upper respiratory tract irritation or corrosivity may be expected.

Aspiration Hazard
Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

Information for components:
Tetrasodium ethylenediamine tetraacetate
Based on physical properties, not likely to be an aspiration hazard.

Sodium hydroxide
Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

Chronic toxicity (represents longer term exposures with repeated dose resulting in chronic/delayed effects - no immediate effects known unless otherwise noted)

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Based on information for a similar material:
In animals, effects have been reported on the following organs:
Respiratory tract.

Information for components:
Tetrasodium ethylenediamine tetraacetate
Based on information for a similar material:
In animals, effects have been reported on the following organs:
Respiratory tract.

Sodium hydroxide
Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Carcinogenicity
The trisodium salt of EDTA did not cause cancer in laboratory animals.

Information for components:
Tetrasodium ethylenediamine tetraacetate
The trisodium salt of EDTA did not cause cancer in laboratory animals. Although large dietary doses of NTA have caused urinary tumors in laboratory animals, there is little likelihood that NTA could cause cancer in humans, especially at subtoxic doses.

Sodium hydroxide
No relevant data found.

Teratogenicity
EDTA and its sodium salts have been reported to cause birth defects in laboratory animals only at exaggerated doses that were toxic to the mother. These effects are likely associated with zinc deficiency due to chelation.

Information for components:
Tetrasodium ethylenediamine tetraacetate
EDTA and its sodium salts have been reported to cause birth defects in laboratory animals only at exaggerated doses that were toxic to the mother. These effects are likely associated with zinc deficiency due to chelation.

Sodium hydroxide

No relevant data found.

Reproductive toxicity
No relevant data found.

Information for components:
Tetrasodium ethylenediamine tetraacetate
For similar material(s): Limited data in laboratory animals suggest that the material does not affect reproduction.

Sodium hydroxide
No relevant data found.

Mutagenicity
Most data indicate that EDTA and its salts are not mutagenic. Minimal effects reported are likely due to trace metal deficiencies resulting from chelating by EDTA.

Information for components:
Tetrasodium ethylenediamine tetraacetate
Most data indicate that EDTA and its salts are not mutagenic. Minimal effects reported are likely due to trace metal deficiencies resulting from chelating by EDTA.

Sodium hydroxide
In vitro genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity
Acute toxicity to fish
For similar material(s):
Material is practically non-toxic to fish on an acute basis (LC50 > 100 mg/L).

Persistence and degradability
Biodegradability: For similar material(s): Biodegradation under aerobic laboratory conditions is below detectable limits (BOD20 or BOD28/ThOD < 2.5%).

Bioaccumulative potential
Bioaccumulation: For similar material(s): Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Mobility in soil
No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations.

Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer.

14. TRANSPORT INFORMATION

DOT

Proper shipping name:	Corrosive liquid, basic, organic, n.o.s. (Sodium hydroxide, Tetrasodium ethylenediaminetetraacetate)
UN number:	UN 3267
Class:	8
Packing group:	III

Classification for SEA transport (IMO-IMDG):

Proper shipping name:	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (Sodium hydroxide, Tetrasodium ethylenediaminetetraacetate)
UN number:	UN 3267
Class:	8
Packing group:	III
Marine pollutant:	No
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code:	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name:	Corrosive liquid, basic, organic, n.o.s. (Sodium hydroxide, Tetrasodium ethylenediaminetetraacetate)
UN number:	UN 3267
Class:	8
Packing group:	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
Corrosive to metals
Acute toxicity (any route of exposure)

Specific target organ toxicity (single or repeated exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Worker and Community Right-To-Know Act:
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Prop. 65
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

United States TSCA Inventory (TSCA)
All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

All statements, technical information and recommendations contained herein are based on tests and data which Chemistry Connection believes to be currently reliable, but this accuracy or completeness thereof is not guaranteed and no warranty of any kind is made with respect thereto. This information is not intended as a license to operate under or a recommendation to practice or infringe any patent of this company or others covering any process, composition of matter or use. Since we shall have no control of the use of the product described here in, we assume no Liability for loss or damage incurred from the proper or improper use of such product.