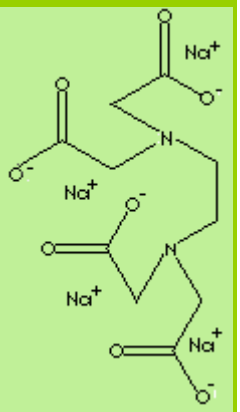
TETRASODIUM ETHYLENEDIAMINETETRAACETATE



PRODUCT IDENTIFICATION	
CAS NO.	64-02-8
EINECS NO.	200-573-9
FORMULA	$CH_4N_2(CH_2COONa)_4$
MOL WT.	380.17
H.S. CODE	
DERIVATION	
CLASSIFICATION	
TOXICITY	
SYNONYMS	
	EDTA; Na_4EDTA;

Ethylenediaminetetraacetic acid, tetrasodium salt; Tetrasodium Tetrasodium (ethylenedinitrilo)tetraacetate; Ethylenediaminetetraacetic tetrasodium salt; Sodium edetate; (Ethylenedinitrilo)tetraacetic acid tetrasodium salt;

DERIVATION	
CLASSIFICATION	
PHYSICAL AND CHEMICAL PROPERTIES	
PHYSICAL STATE	white powder
MELTING POINT	> 300 C
BOILING POINT	Decomposes (> 400 C)
SPECIFIC GRAVITY	
SOLUBILITY IN WATER	Soluble
pH	10.5 - 12.5
VAPOR DENSITY	
REFRACTIVE INDEX	
NFPA RATINGS	Health: 1 ; Flammability: 0 ; Reactivity: 0
AUTOIGNITION	
FLASH POINT	Not considered to be a fire hazard
STABILITY	Stable under normal conditions
APPLICATIONS	
Detergent; cosmetics; cleaning products; metal working; polymerization	
SALES SPECIFICATION	
APPEARANCE	white creamy powder
ASSAY (as Na_4EDTA)	86.0% min (92 wt% as $Na_4EDTA1.5H_2O$)
BULK DENSITY	620-760 g/l
WATER SOLUBILITY	45.0 %
pH	10.5 - 12.5 (1 wt% solution)
TRANSPORTATION	
PACKING	25kgs in Bag
HAZARD CLASS	Not regulated
UN NO.	
REMARKS (DESCRIPTION OF CHELATING AGENT)	

Chelation is a chemical combination with a metal in complexes in which the metal is part of a ring. Organic ligand is called chelator or chelating agent, the chelate is a metal complex. The larger number of ring closures to a metal atom is the more stable the

compound. This phenomenon is called the chelate effect; it is generally attributed to an increase in the thermodynamic quantity called entropy that accompanies chelation. The stability of a chelate is also related to the number of atoms in the chelate ring. Monodentate ligands which have one coordinating atom like H_2O or NH_3 are easily broken apart by other chemical processes, whereas polydentate chelators, donating multiple binds to metal ion, provide more stable complexes. Chlorophyll, green plant pigment, is a chelate that consists of a central magnesium atom joined with four complex chelating agent (pyrrole ring). The molecular structure of the chlorophyll is similar to that of the heme bound to proteins to form hemoglobin, except that the latter contains iron(II) ion in the center of the porphyrin. Heme is an iron chelate. Chelation is applied in metal complex chemistry, organic and inorganic chemistry, biochemistry, and environment protection. It is used in chemotherapeutic treatments for metal poisoning. Chelating agents offers a wide range of sequestrants to control metal ions in aqueous systems. By forming stable water soluble complexes with multivalent metal ions, chelating agents prevent undesired interaction by blocking normal reactivity of metal ions. EDTA, ethylenediaminetetraacetate (hexadentating), is a good example of common chelating agent which have nitrogen atoms and short chain carboxylic groups. The sodium salt of EDTA is used as an antidote for metal poisoning, an anticoagulant, and an ingredient in a variety of detergents. Chelating agents are important in the field of soap, detergents, textile dyeing, water softening, metal finishing and plating, pulp and paper, enzyme deactivation, photo chemistry, and bacteriocides.