

## KRAFTEX 80 – CHELATING AGENT

KRAFTEX 80 is a DTPA 41% active Liquid EDTA Chelating Agent used when complexes of greater stability are desired and when performance of Dissolvine E-39, Versene 100/Chelon 100/Trilon B is marginal. KRAFTEX 80 is particularly useful in Peroxide bleach systems(bleaching of pulp) and formulas for control of heavy metal ions in general. Better stability under oxidizing conditions

### Specifications:

Pale, straw, yellow liquid

80 mg CaCO<sub>3</sub>/g minimum chelate activity at Ph 11

Molecular Weight is 503.3 Anhydrous

Approx. Density is 10.8 to 10.9 pounds per gallon : Specific Gravity is :  
1.29 -1.31 at 25 C\*

Miscible in water at 25 C

Ph of a 1% SOLUTION IS 11 – 12 at 25 C



# Let KRAFT CHEMICAL HELP YOU PICK THE RIGHT CHELATING AGENT!

## KRAFT CHEMICAL COMPANY

1975 N. Hawthorne Avenue  
Melrose Park, IL 60160

## CHOOSING THE RIGHT PRODUCT

products can be used directly in chemical processes or formulated as water-soluble products. We can analyze your process to establish which product should be used. The type and quantity of metal ions as well as the anions involved in the process need to be considered, but the most important factor is the strength of the complex formed between the metal ion and the chelating agent. This determines whether the complex will be formed in the presence of competing anions. The stability or equilibrium constant (K), expressed as log K, has been determined for many metals and chelating agents. The higher the log K values, the more tightly the metal ion will be bound to the chelating agent and the more likely that complexes will be formed.

## STABILITY CONSTANTS (LOG K VALUES)<sup>1</sup>

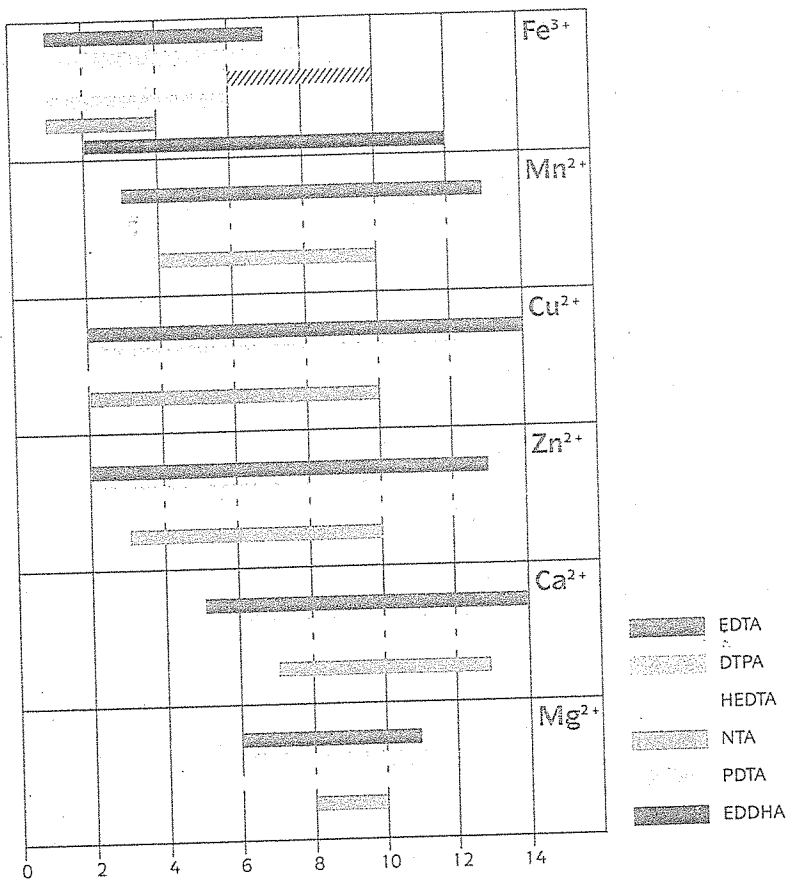
Metal Ion	EDTA	DTPA	HEDTA	NDA
Al <sup>3+</sup>	16.3	18.7	14.4	11.4
Ba <sup>2+</sup>	7.9	8.9	6.3	4.8
Ca <sup>2+</sup>	10.8	10.8	8.3	6.4
Cd <sup>2+</sup>	16.5	19.0	13.3	9.8
Co <sup>2+</sup>	16.3	19.2	14.6	10.4
Cu <sup>2+</sup>	18.8	21.4	17.5	12.9
Fe <sup>2+</sup>	14.3	16.4	12.2	8.3
Fe <sup>3+</sup>	25.1	28.0	19.8	15.9
Hg <sup>2+</sup>	21.7	26.7	20.1	14.6
Mg <sup>2+</sup>	8.8	9.3	7.0	5.4
Mn <sup>2+</sup>	13.9	15.6	10.9	7.4
Ni <sup>2+</sup>	18.6	20.2	17.3	11.5
Pb <sup>2+</sup>	18.0	18.8	15.7	11.4
Sr <sup>2+</sup>	8.7	9.8	6.9	5.0
Zn <sup>2+</sup>	16.5	18.4	14.7	10.7

<sup>1</sup> R.M. Smith; A.E. Martell, Critical Stability Constants, Plenum Press, New York and London, 3rd Edition.



The pH of the system and the oxidizing environment can affect the stability and effectiveness of the chelating system. For the metal complex with each particular chelating agent there is an optimum pH and an active pH range in which the metal complex is stable.

## ACTIVE pH RANGE



Calculated for a hydroxide environment in demineralized water.  
 Lower pH limit:  $K' \geq 10^3$ . Upper pH limit:  $\geq 99\%$  metal is chelated.

The quantity of chelating agent needed depends on the concentration of metal ion to be chelated and the type of chelating agent used. products generally chelate on an equimolecular basis (i.e. the higher the molecular weight of the chelating agent, the higher the quantity of chelating agent required to chelate the metal ion). See chelation equivalents in the product overview tables.



## 80 Chelating Agent

**Product Availability**

- North America
- Latin America
- Pacific
- Europe

**Applications**

- Cleaning products
- Photography
- Polymerization
- Pulp and paper
- Scale removal and prevention

**Active Ingredient Name**

Pentasodium diethylenetriaminepentaacetate

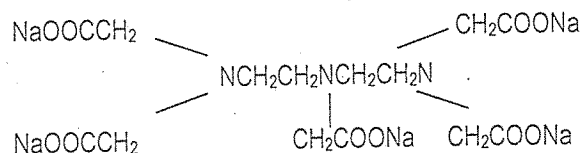
**CAS Number**

140-01-2

**Chemical Formula**

$C_{14}H_{18}N_3O_{10}Na_5$  or  
 $(NaOOCCH_2)_2 NCH_2CH_2N(CH_2COONa)CH_2CH_2N(CH_2COONa)_2$

**Chemical Structure**



**Molecular Weight**

503.1

**Other Names**

Na<sub>5</sub>DTPA, DTPA

**Description**

80 Chelating Agent is an aqueous solution of the pentasodium salt of diethylenetriaminepentaacetic acid, Na<sub>5</sub>DTPA. 80 Chelating Agent should be considered for use when: (1) the chelant will be used in the presence of oxidizers such as peroxide; (2) when metal chelates of greater stability or solubility are sought; or (3) when VERSENE™ 100 chelating agent has shown limited utility.

*Daisy M. Garcia*

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Quality Control

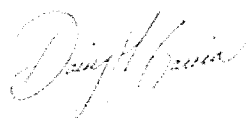


## Typical Properties†

Calcium Chelation Value	80 mg as CaCO <sub>3</sub> per gram of	80
Equivalent Chelation Capacity	One gram	80 has the equivalent chelation capacity of 0.8 mmoles of DTPA
Metal Chelation Capacity	Parts chelant per part metal (w/w)	
Ca	31.2	
Mg	51.5	
Fe	22.4	
Cu	19.7	
Mn	22.8	
% Assay	40.2 wt% as Na <sub>5</sub> DTPA	
Appearance	Light, straw colored liquid	
Specific Gravity at 25/25°C	1.3	
Bulk Density	1310 kg/m <sup>3</sup> or 10.9 lb/U.S. gal.	
Color	250 maximum (APHA)	
pH	11.0-11.8 (1 wt% solution)	
Viscosity, Centistokes	Temperature	Viscosity, Centistokes
	0°C/32°F	132
	20°C/68°F	33
	40°C/104°F	13
Water Solubility	Completely miscible	

† The data provided for these properties are typical values, intended only as guides, and should not be construed as sales specifications.

Quality Approved  
June 1, 2015



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