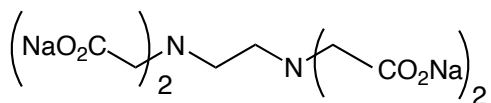


## Chelating Agents

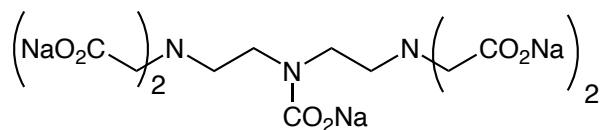
We offer a full line of aminopolycarboxylic acid based chelating agents for industrial, institutional and agricultural applications. We work with our customers to give them a choice of materials to work with. This ranges from the historic EDTA type products to the newer more environmentally friendly materials like GLDA and MGDA.

<b>CHELATING AGENTS</b> (as Acids and Nax salts)	<b>CAS #</b>
EDTA	60-004, 64-02-8, 6381-92-6, 13236-36-4
DTPA	67-43-6, 140-01-2
HEDTA	139-89-9, 150-39-0
NTA	139-13-9, 5064-31-3
GLDA	51981-21-6, 58976-65-1
MGDA	164462-16-2
EDG (Ethanol diglycine)	135-37-5
DEG (Diethanol glycine)	139-41-3
<b>MICRONUTRIENTS</b>	<b>CAS #</b>
Fe Na EDDHA	16455-61-1
Fe Na DTPA	12389-75-2
Fe HEDTA	17084-02-5
Fe Na EDTA	157-41-5
Zn Na <sub>2</sub> EDTA	14025-21-9
Cu Na <sub>2</sub> EDTA	14025-15-1
Mg Na <sub>2</sub> EDTA	14402-88-1
Ca Na <sub>2</sub> EDTA	62-33-9
Mn Na <sub>2</sub> EDTA	15375-84-5

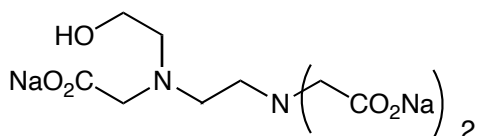
# Chelating Agents



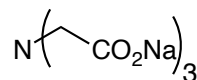
Ethylenediamine Tetraacetic Acid (EDTA)



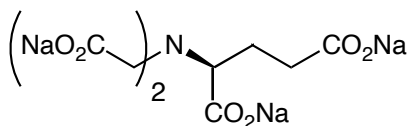
Diethylenetriamine Pentaacetic Acid (DTPA)



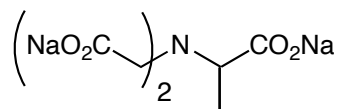
N-Hydroxyethylethylenediamine Triacetic Acid (HEDTA)



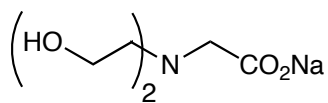
Nitrilotriacetic Acid (NTA)



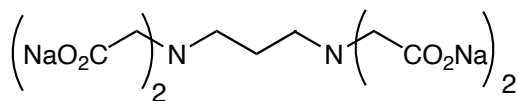
L-Glutamic Acid Diacetic Acid (GLDA)



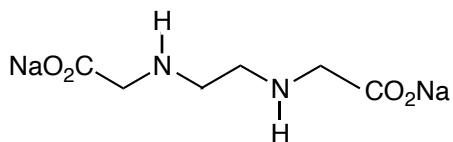
Methylglycine Diacetic Acid (MGDA)



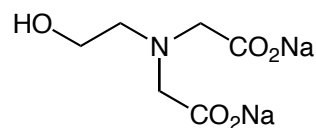
Diethanolglycine (DEG)



Propylenediamine Tetraacetic Acid (PDTA)



Ethylenediamine Diacetic Acid (EDDA)



N-(2-hydroxyethyl)iminodiacetic acid (HIDA)

## Cyanide Derivatives

With fewer North American and European producers working with HCN as a feedstock, Hebei Chengxin has been able to build a broad product line based on their capabilities. These products range from aminoacids to cyanoacrylates.

<b>CYANIDE DERIVATIVES</b>	<b>CAS #</b>
Sodium Cyanide	143-33-9
Glycolic acid	79-14-1
Malonic Acid	141-82-2
Diethyl Malonate	105-53-3
Dimethyl Malonate	108-59-8
Diisopropyl Malonate	13195-64-7
Barbituric Acid	67-52-7
Cyanuric Chloride	108-77-0
Cyanoacetic acid	372-09-8
Methyl Cyanoacetate	105-34-0
Ethyl Cyanoacetate	105-56-6
Ethyl Cyanoacrylate	7085-85-0
Benzyl Cyanide	140-29-4
Phenylacetic Acid	103-82-2
Potassium Phenylacetate	13005-36-2
Sodium Dicyanamide	1934-75-4
Glycine	56-40-6
Sodium Sarcosinate	4316-73-8
Creatine Monohydrate	6020-87-7

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Iminodiacetonitrile	628-87-5
Iminodiacetic Acid	142-73-4
PMIDA	5994-61-6
Glyphosate	1071-83-6
Atrazine	1912-24-9
DBNPA (2,2-dibromo-3-nitrilopropionamide)	10222-01-2
Sodium Thiocyanate	540-72-7
Triethyl Orthoformate	122-51-0
Trimethyl Orthoformate	149-73-5
Sodium Ferrocyanide	13601-19-9
Potassium Ferrocyanide	13943-58-3
p-Chlorobenzyl Cyanide	140-53-4
o-Chlorobenzyl Cyanide	2856-63-5
EMME (Ethoxy Methylene Malonic Diethyl Ester)	87-13-8
4,6-Dihydroxy Pyrimidine	1193-24-4
Cyanoacetamide	107-91-5
Glycolonitrile	107-16-4

## HCN Intermediates

The three hydrogen cyanide (HCN) production units at Hebei Chengxin offer multiple locations for custom synthesis of HCN derivatives. Their technical group has many years of experience working on custom synthesis projects for customers needing HCN as a building block. The opportunities to build with HCN are described below.

### **Nitriles**

As intermediates for pharmaceutical and agricultural products

### **Aminonitriles**

Intermediates to herbicides, azo polymerization initiators, and  $\alpha$ -amino acids

### **Cyanohydrins**

Intermediates primarily for aminonitriles

### **Chiral Molecules**

For use as pharmaceutical and agricultural intermediates

### **Amino Acids**

As a source of amino acids and multiple intermediate applications

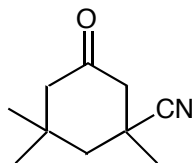
### **Acyl Amino Acids**

Surfactants

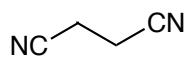
### **Hydantoins**

As preservatives and intermediates

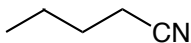
## Nitriles



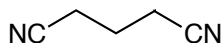
Isophorone Nitrile



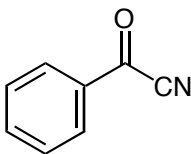
Succinonitrile



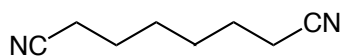
Valeronitrile



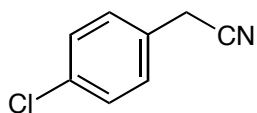
Glutaronitrile



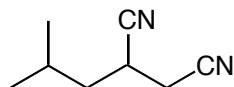
Benzoyl Cyanide



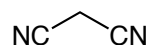
1,6-Dicyanohexane



4-Chlorobenzylcyanide

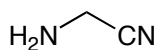


2-Isobutysuccinonitrile

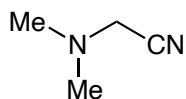


Malononitrile

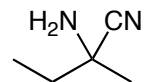
# Aminonitriles



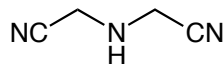
Glycinonitrile (GN)



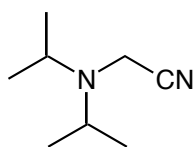
N,N-Dimethylglycinonitrile



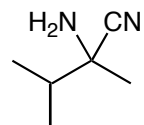
Methyl Ethyl Ketone Amino Nitrile (MEKAN)



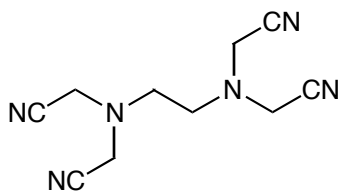
Iminodiacetonitrile (IDAN)



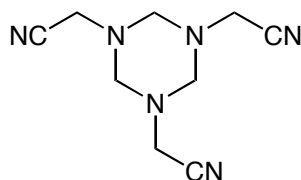
N,N-Diisopropylglycinonitrile



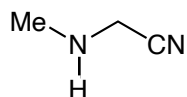
Methyl Isopropyl Ketone Amino Nitrile (MIPKAN)



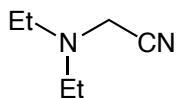
Ethylenediaminetetraacetonitrile (EDTN)



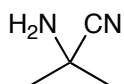
Methyleneglycinonitrile (MGN)



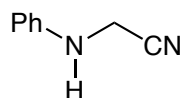
Sarcosine Nitrile



N,N-Diethylglycinonitrile



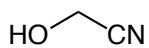
Acetone Amino Nitrile (AAN)



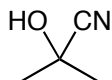
N-Phenylglycinonitrile



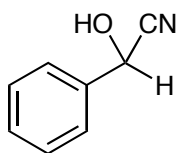
## Cyanohydrins



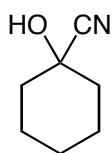
Glycolonitrile (GN)



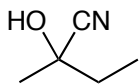
Acetone Cyanohydrin (ACH)



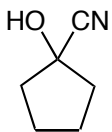
Mandelonitrile



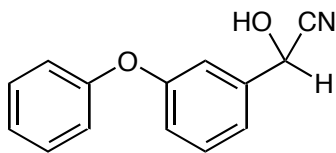
Cyclohexanone Cyanohydrin



Methyl Ethyl Ketone Cyanohydrin

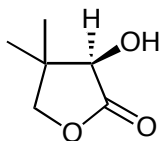


Cyclopentanone Cyanohydrin

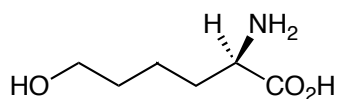


2-Hydroxy-2-(3-phenoxyphenyl)  
acetonitrile

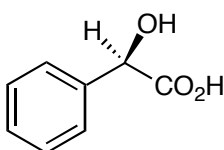
## Chiral Molecules



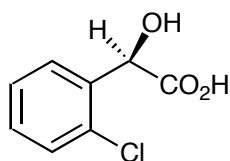
(R)-pantolactone



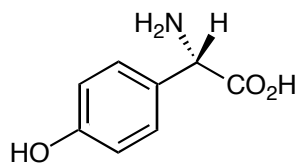
(R)-(4-hydroxybutyl)glycine



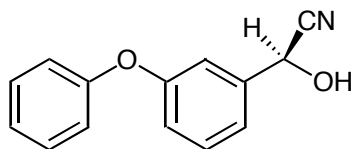
(R)-Mandelic Acid



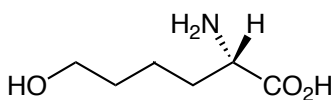
(R)-2-Chloromandelic Acid



D-4-Hydroxyphenylglycine

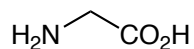


(S)-Cyanohydrin metaphenoxy-benzaldehyde (SCMB)

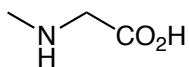


D-4-Hydroxybutylglycine

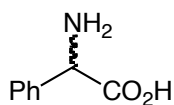
## Amino Acids



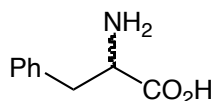
Glycine



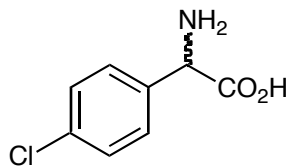
Sarcosine



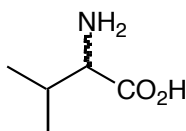
Phenylglycine



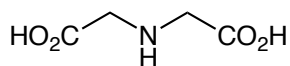
Phenylalanine



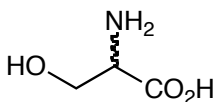
4-Chlorophenylglycine



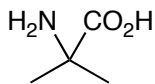
Valine



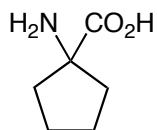
Iminodiacetic Acid (IDA)



Serine

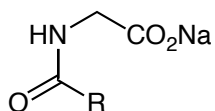


Aminoisobutyric Acid (AIBA)

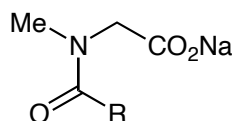


Cycloleucine

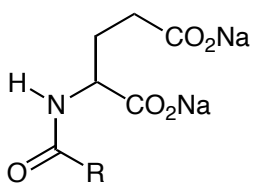
## Acyl Amino Acids



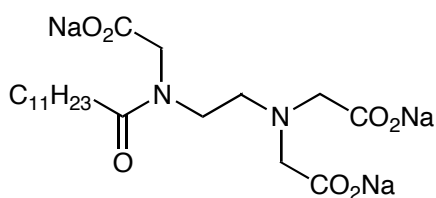
Acyl Glycinates



Acyl Sarcosinates

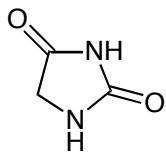


Acyl Glutamates

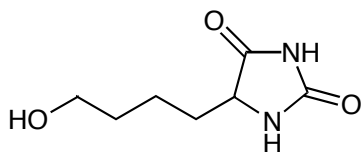


N-Lauroylethylenediaminetriacetic acid (LED3A)

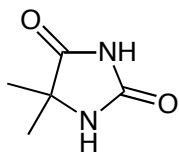
## Hydantoins



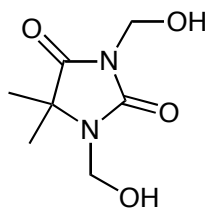
Hydantoin



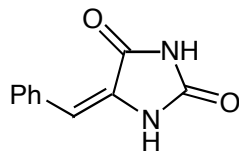
4-Hydroxybutylhydantoin



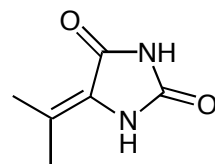
Dimethylhydantoin (DMH)



DMDM Hydantoin



Precursor to keto acids



Precursor to keto acids