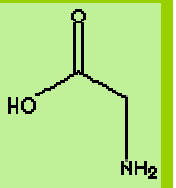
GLYCINE



PRODUCT IDENTIFICATION	
CAS NO.	56-40-6
EINECS NO.	200-272-2
FORMULA	H_2NCH_2COOH
MOL WT.	75.07
H.S. CODE	2922.49
TOXICITY	Oral rat LD50 7930 mg/kg
SYNONYMS	Aminoacetic Acid; Glycocoll; Athenon; Gly; G salt; Iconyl; Monazol; glycosthene; p-Hydroxyphenylaminoacetic Acid; Aminoethanoic Acid; p-Hydroxyanilinoacetic Acid; para-Oxyphenyl Glycocoll; Sucre De Gelatine;
DERIVATION	
CLASSIFICATION	

PHYSICAL AND CHEMICAL PROPERTIES	
PHYSICAL STATE	White crystals, Odorless
MELTING POINT	245 C (Decompose)
BOILING POINT	
SPECIFIC GRAVITY	1.6
SOLUBILITY IN WATER	25g/100 ml
pH	5.97 (Isoelectric point)
VAPOR DENSITY	
REFRACTIVE INDEX	
AUTOIGNITION	
NFPA RATINGS	Health: 0 Flammability: 1 Reactivity: 0
FLASH POINT	145 C
STABILITY	Stable under ordinary conditions

APPLICATIONS

Flavor enhancers and maskers, pH buffers and stabilizers, an ingredient in pharmaceutical products, food and personal care products and as a chemical intermediate.

SALES SPECIFICATION	
TECHNICAL GRADE	
APPEARANCE	white to off-white crystalline powder
ASSAY (DRY BASIS)	98.5% min
LOSS ON DRYING	0.5% max
CHLORIDE	0.5% max
Fe	0.003% max
FEED GRADE	
APPEARANCE	white to off-white crystalline powder
ASSAY (DRY BASIS)	98.5% min
CHLORIDE	0.5% max
HEAVY METALS	20ppm max
ARSENIC	3ppm max
LOSS ON DRYING	0.2% max
FOOD GRADE	
BIBLIOGRAPHY	FCC IV
APPEARANCE	white, odorless, crystalline powder
ASSAY (DRY BASIS)	99.0% min

IDENTIFICATION	passes test
LOSS ON DRYING	0.2% max
CHLORIDE	0.002% max
HEAVY METALS	20ppm max
SULPHATE	50ppm max
pH	5.5 - 7.0
RESIDUE ON IGNITION	0.05% max
As	3ppm max
Pb	5ppm max
USP/BP GRADE	
BIBLIOGRAPHY	USP 24 / BP 93
APPEARANCE	white, odorless, crystalline powder
ASSAY (DRY BASIS)	99.0 -101.0%
IDENTIFICATION	passes test
LOSS ON DRYING	0.2% max
CHLORIDE	70ppm max
HEAVY METALS	20ppm max
SULPHATE	65 ppm
pH	5.5 - 6.5
RESIDUE ON IGNITION	0.1% max
As	3ppm max
Pb	5ppm max
HYDROLYZABLE SUBSTANCES	passes test
PYROGEN CONTENT	meets the requirements
ALUMINUM	meets the requirements
ORGANIC VOLATILES	meets the requirements
TRANSPORTATION	
PACKING HAZARD CLASS UN NO.	25kgs in Fiber Drum Not regulated

GENERAL PROPERTIES OF GLYCINE

Glycine is a white, crystalline amino acid; dissolve in water and. As also known as aminoacetic acid, it is the simplest amino acid. It has acid group as well as amino group which both groups act as a base. It is not optically active, i.e., it does not have d- and l-stereoisomers as two hydrogens are bonded to the central carbon atom. It is nonessential amino acids for mammals; i.e., they can synthesize it from amino acids serine and threonine and from other sources and do not require dietary sources. It is commercially synthesis from ammonia. It is also prepared frombromoethanoic acid by reaction with potassium phthalimide. It helps to improve glycogen storage utilized in the synthesis of hemoglobin, collagen, and glutathione, and facilitates the amelioration of high blood fat and uric acid levels.

GENERAL DESCRIPTION OF AMINO ACID

Amino Acid is any of the organic compounds in which one (or more) amino group ($-NH_2$) and one (or more) carboxylic acid group (-COOH) are both present with general formula R-CH(NH_2)COOH containing carbon, hydrogen, oxygen, nitrogen, and in certain cases sulfur atoms. Two groups attached to the same carbon (called the alpha-carbon atom at the end of the compound) are polymerized to form peptides and proteins. The amine group is protonated to form $-NH_3^+$ at low pH. The carboxylic acid group is deprotonated to form $-CO_2^-$ at high pH. The carbon atom in the carboxyl group of one amino acid binds covalently to the nitrogen atom in the amino group of another amino acid to form a peptide bond with the release of a water molecule. Proteins are synthesized through the covalent chemical polypeptide bonds. The sequence of these amino

acids in the protein polypeptides determines the shape, properties, and hence biological role of the protein that function as chemical messengers and as intermediates in metabolism. Proteins are composed of various proportions of about 20 commonly occurring amino acids. Plants or other biological systems can synthesize amino acids from simple inorganic compounds, but animals rely on adequate supplies in their diet. More than 100 common amino acids occur in plants or in other microorganic systems. The 20 amino acids commonly found in animals are Alanine, Arginine, Asparagine, Aspartic Acid, Cysteine, Glutamic Acid, Glutamine, Glycine, Histidine, Isoleucine, Leucine, Lysine, Methionine, Phenylalanine, Proline, Serine, Threonine, Tryptophan, Tyrosine, and Valine. Many of the amino acids can be synthesized in the human or animal body from other cellular metabolites when needed (called Non-essential Amino Acids). Animals are not able to synthesize some amino acids necessary in metabolism in sufficient quantities. It must therefore be present in the diet (called Essential Amino Acids). In man, these essential amino acids are Arginine, Histidine, Isoleucine, Leucine, Lysine, Methionine, Phenylalanine, Threonine, Tryptophan and Valine.

GENERAL PROPERTIES OF AMINO ACIDS