

# Аминокислоты и производные

## Технические характеристики

По вопросам продаж и поддержки обращайтесь:

Алматы (7273)495-231  
Ангарск (3955)60-70-56  
Архангельск (8182)63-90-72  
Астрахань (8512)99-46-04  
Барнаул (3852)73-04-60  
Белгород (4722)40-23-64  
Благовещенск (4162)22-76-07  
Брянск (4832)59-03-52  
Владивосток (423)249-28-31  
Владикавказ (8672)28-90-48  
Владимир (4922)49-43-18  
Волгоград (844)278-03-48  
Вологда (8172)26-41-59  
Воронеж (473)204-51-73  
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06  
Ижевск (3412)26-03-58  
Иркутск (395)279-98-46  
Казань (843)206-01-48  
Калининград (4012)72-03-81  
Калуга (4842)92-23-67  
Кемерово (3842)65-04-62  
Киров (8332)68-02-04  
Коломна (4966)23-41-49  
Кострома (4942)77-07-48  
Краснодар (861)203-40-90  
Красноярск (391)204-63-61  
Курск (4712)77-13-04  
Курган (3522)50-90-47  
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13  
Москва (495)268-04-70  
Мурманск (8152)59-64-93  
Набережные Челны (8552)20-53-41  
Новокузнецк (3843)20-46-81  
Ноябрьск (3496)41-32-12  
Новосибирск (383)227-86-73  
Омск (3812)21-46-40  
Орел (4862)44-53-42  
Оренбург (3532)37-68-04  
Пенза (8412)22-31-16  
Петрозаводск (8142)55-98-37  
Псков (8112)59-10-37  
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15  
Рязань (4912)46-61-64  
Самара (846)206-03-16  
Санкт-Петербург (812)309-46-40  
Саратов (845)249-38-78  
Севастополь (8692)22-31-93  
Саранск (8342)22-96-24  
Симферополь (3652)67-13-56  
Смоленск (4812)29-41-54  
Сочи (862)225-72-31  
Ставрополь (8652)20-65-13  
Сургут (3462)77-98-35  
Сыктывкар (8212)25-95-17  
Тамбов (4752)50-40-97  
Тверь (4822)63-31-35

Тольятти (8482)63-91-07  
Томск (3822)98-41-53  
Тула (4872)33-79-87  
Тюмень (3452)66-21-18  
Ульяновск (8422)24-23-59  
Улан-Удэ (3012)59-97-51  
Уфа (347)229-48-12  
Хабаровск (4212)92-98-04  
Чебоксары (8352)28-53-07  
Челябинск (351)202-03-61  
Череповец (8202)49-02-64  
Чита (3022)38-34-83  
Якутск (4112)23-90-97  
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

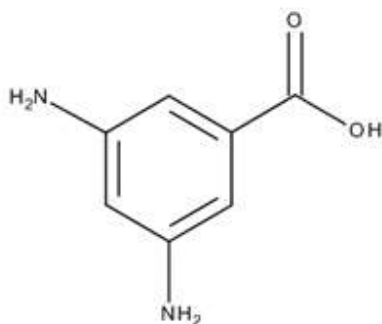
Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47

эл.почта: [pva@nt-rt.ru](mailto:pva@nt-rt.ru) || сайт: <https://pallav.nt-rt.ru/>

## 3,5'-DIAMINOBENZOIC ACID 98% FOR SYNTHESIS

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 00947      | Grade            |           |
| Purity            | 98%        | CAS No.          | 535-87-5  |
| Molecular Formula | C7H8N2O2   | Molecular Weight | 152.15    |
| H.S.Code          | 2922.49900 | Shelf Life       | 60 Months |



### Physical Properties

|                         |       |        |                |                                    |              |
|-------------------------|-------|--------|----------------|------------------------------------|--------------|
| Physical state at 20 °C | Solid | Colour | White to brown | Melting point/ Freezing point [°C] | 235 - 238 °C |
|-------------------------|-------|--------|----------------|------------------------------------|--------------|

### Packaging

|  |
|--|
|  |
|--|

### Specification

|                   |                         |
|-------------------|-------------------------|
| Appearance        | Gray crystalline powder |
| Assay (titration) | Min 97.5%               |
| Identity (IR)     | Passes test             |

### Safety Information and Hazard Symbols



Symbol: GHS07  
Signal Word: Warning  
Hazardous Statement: H315-H319-H335  
Precaution Statement: P261-P305 + P351 + P338

3,5-DIAMINO BENZOIC ACID, 98%

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 0947A      | Grade            |           |
| Purity            | 98%        | CAS No.          | 535-87-5  |
| Molecular Formula | C7H8N2O2   | Molecular Weight | 152.15    |
| H.S.Code          | 2922.49900 | Shelf Life       | 60 Months |

Physical Properties

|                         |       |        |                |                                    |              |
|-------------------------|-------|--------|----------------|------------------------------------|--------------|
| Physical state at 20 °C | Solid | Colour | White to brown | Melting point/ Freezing point [°C] | 235 - 238 °C |
|-------------------------|-------|--------|----------------|------------------------------------|--------------|

Packaging

|  |
|--|
|  |
|--|

Specification

|                     |                 |
|---------------------|-----------------|
| Appearance (Color)  | White to grey   |
| Appearance (Form)   | Powder          |
| Infrared spectrum   | Conforms        |
| Titration with TBAH | 97.5 to 102.5 % |
| HPLC                | >=97.5 %        |

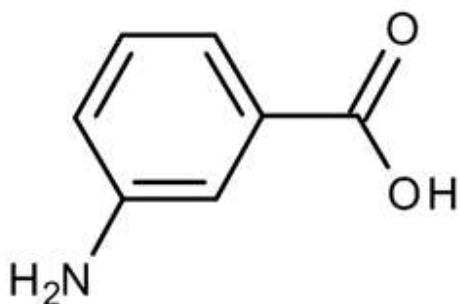
Safety Information and Hazard Symbols

|                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------|
|                                            |
| Symbol: GHS07<br>Signal Word: Warning<br>Hazardous Statement: H315-H319-H335<br>Precaution Statement: P261-P305 + P351 + P338 |

## 3-AMINO BENZOIC ACID 98% FOR SYNTHESIS

meta-Aminobenzoic acid; MABA; 3-carboxyaniline; m-carboxyaniline ;3-Amino Benzoic Acid

|                   |            |                  |               |
|-------------------|------------|------------------|---------------|
| Product Code.     | 00152      | Grade            | For Synthesis |
| Purity            | 98%        | CAS No.          | 99-05-8       |
| Molecular Formula | C7H7NO2    | Molecular Weight | 137.14        |
| H.S.Code          | 2922.49900 | Shelf Life       | 60 Months     |



### Physical Properties

|                                    |                            |                                                       |                  |                 |          |
|------------------------------------|----------------------------|-------------------------------------------------------|------------------|-----------------|----------|
| Physical state at 20 °C            | Solid                      | Colour                                                | Pale pink colour | Odour           | Odorless |
| Melting point/ Freezing point [°C] | 174 - 178 °C               | Flash point [°C]                                      | 150 °C           | Density [g/cm3] | 1.51     |
| Solubility in water [% weight]     | Partially soluble in water | Partition coefficient Log Pow octanol / water at 20°C | 1.053            |                 |          |

### Packaging



### Specification

|                  |                                                  |
|------------------|--------------------------------------------------|
| Appearance       | White to beige to light brown crystalline powder |
| Purity (by HPLC) | Min 98.0%                                        |
| Melting range    | 173 - 176°C                                      |

## Safety Information and Hazard Symbols



Symbol: GHS07

Signal Word: Warning

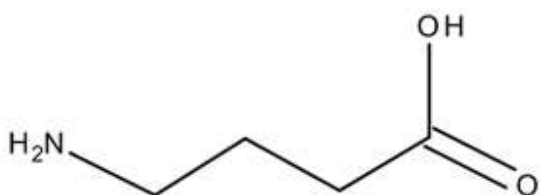
Hazardous Statement: H302-H315-H319-H335

Precaution Statement: P261-P305 + P351 + P338

## 4-AMINO BUTYRIC ACID 98% FOR BIOCHEMISTRY

4-Aminobutanoic acid, GABA,  $\gamma$ -Aminobutyric acid, Piperidic acid, Piperidinic acid

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 00154      | Grade            |           |
| Purity            | Min. 98%   | CAS No.          | 56-12-2   |
| Molecular Formula | C4H9NO2    | Molecular Weight | 103.12    |
| H.S.Code          | 2922.49900 | Shelf Life       | 60 Months |



### Physical Properties

|                                |                  |        |                   |                                    |        |
|--------------------------------|------------------|--------|-------------------|------------------------------------|--------|
| Physical state at 20 °C        | Solid            | Colour | White crystalline | Melting point/ Freezing point [°C] | 195 °C |
| Solubility in water [% weight] | Soluble in water |        |                   |                                    |        |

### Packaging



### Specification

|                            |                 |
|----------------------------|-----------------|
| Appearance                 | White powder    |
| Assay (by HClO4 titration) | Min 98%         |
| Melting point              | 200 - 205 deg C |

## Safety Information and Hazard Symbols



Symbol: GHS07

Signal Word: Warning

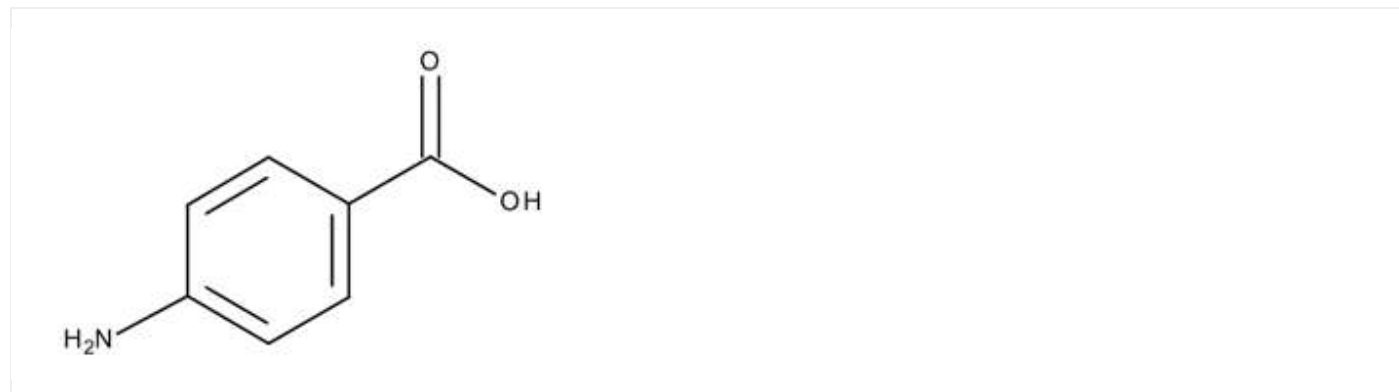
Hazardous Statement: H315-H319-H335

Precaution Statement: P261-P305 + P351 + P338

# 4-AMINOBENZOIC ACID 99% EXTRAPURE

PABA, Vitamin Bx, Vitamin H1

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 02901      | Grade            | Extrapure |
| Purity            | 99%        | CAS No.          | 150-13-0  |
| Molecular Formula | C7H7NO2    | Molecular Weight | 137.14    |
| H.S.Code          | 2922.49900 | Shelf Life       | 60 Months |



## Physical Properties

|                                                       |       |                                    |                       |                 |          |
|-------------------------------------------------------|-------|------------------------------------|-----------------------|-----------------|----------|
| Physical state at 20 °C                               | Solid | Colour                             | Cream coloured powder | Odour           | Odorless |
| pH value                                              | 3.5   | Melting point/ Freezing point [°C] | 187 - 189 °C          | Density [g/cm3] | 1.374    |
| Partition coefficient Log Pow octanol / water at 20°C | 6.8   |                                    |                       |                 |          |

## Packaging



## Specification

|               |                      |
|---------------|----------------------|
| Appearance    | Cream colored powder |
| Assay         | Min 99.0%            |
| Melting point | 185 - 188 °C         |



## Safety Information and Hazard Symbols



Symbol: GHS07

Signal Word: Warning

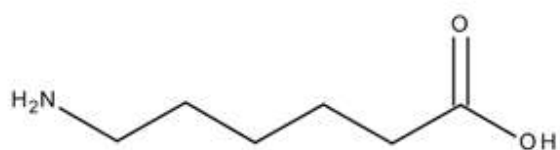
Hazardous Statement: H315-H317-H319-H335

Precaution Statement: P261-P280-P305 + P351 + P338

# 6-AMINO CAPROIC ACID 99% FOR BIOCHEMISTRY

e-Aminocaproic acid, 6-Aminohexanoic acid, EACA

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 00155      | Grade            |           |
| Purity            | Min. 99%   | CAS No.          | 60-32-2   |
| Molecular Formula | C6H13NO    | Molecular Weight | 131.18    |
| H.S.Code          | 2922.49900 | Shelf Life       | 60 Months |



## Physical Properties

|                                    |              |                                |                  |       |          |
|------------------------------------|--------------|--------------------------------|------------------|-------|----------|
| Physical state at 20 °C            | Solid        | Colour                         | White powder     | Odour | Odorless |
| Melting point/ Freezing point [°C] | 207 - 209 °C | Solubility in water [% weight] | Soluble in water |       |          |

## Packaging



## Specification

|                                        |                 |
|----------------------------------------|-----------------|
| Appearance                             | White powder    |
| Assay (by HClO <sub>4</sub> titration) | Min 99%         |
| Melting range                          | 200 - 205 deg C |
| Identity (IR)                          | Passes test     |

## Safety Information and Hazard Symbols



Symbol: GHS07

Signal Word: Warning

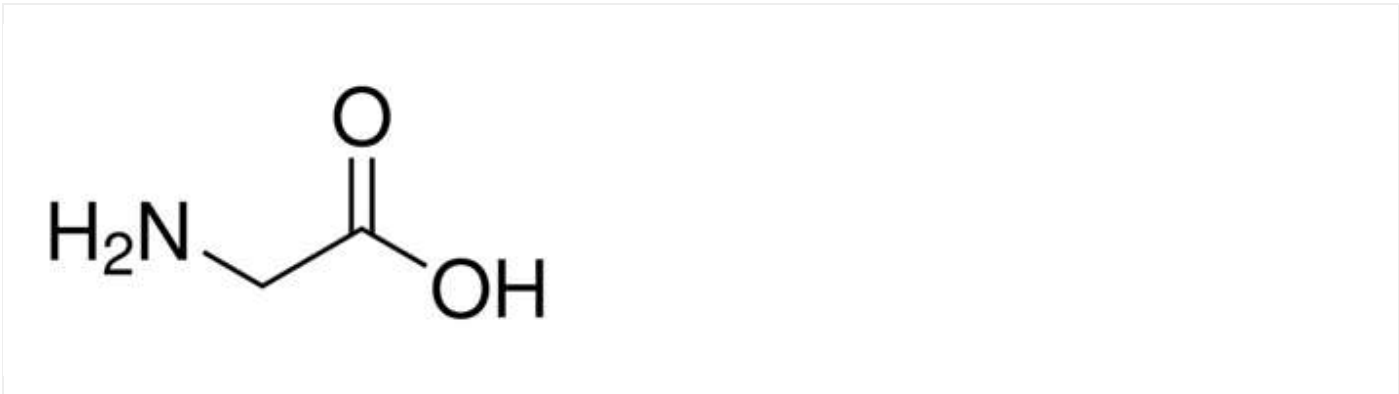
Hazardous Statement: H315-H319-H335

Precaution Statement: P261-P305 + P351 + P338

# AMINO ACETIC ACID (GLYCINE) 98.5% EXTRA PURE

Aminoethanoic acid; Glycocoll ; Glycine

|                   |            |                  |            |
|-------------------|------------|------------------|------------|
| Product Code.     | 00143      | Grade            | Extra Pure |
| Purity            | 98.5%      | CAS No.          | 56-40-6    |
| Molecular Formula | NH2CH2COOH | Molecular Weight | 75.07      |
| H.S.Code          | 2922.49100 | Shelf Life       | 60 Months  |



## Physical Properties

## Packaging



## Specification

|                            |                          |
|----------------------------|--------------------------|
| Appearance                 | White crystalline powder |
| Assay (by HClO4 titration) | Min 98.5%                |
| Loss on drying (at 105°C)  | Max 0.5%                 |
| Sulphated ash              | Max 0.1%                 |
| Heavy metal (as Pb)        | Max 0.002%               |
| Chloride (Cl)              | Max 0.007%               |
| Sulphate (SO4)             | Max 0.0065%              |

# AMINO ACID KIT OF 23 ITEMS SET

(24 Chromatographically homogenous acids) Reference collection for paper & thin layer chromatography. Each vial contains 1.0 gm except 3-(3,4-Dihydroxyphenyl) - DL - alanine & L-Hydroxyproline which contain 0.1 gm each.

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 00148      | Grade            |           |
| Purity            |            | CAS No.          | NA        |
| Molecular Formula |            | Molecular Weight | 0.00      |
| H.S.Code          | 2922.39000 | Shelf Life       | 60 Months |

## Physical Properties

## Packaging

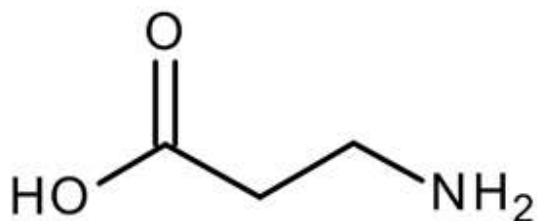
## Specification

|                                    |    |
|------------------------------------|----|
| Appearance                         | -- |
| DL-2 Amino-N-butyric acid          |    |
| L-Lysine monohydrochloride         |    |
| DL-Nor-Leucine                     |    |
| L-Leucine                          |    |
| L-Arginine monohydrochloride       |    |
| DL-Aspartic acid                   |    |
| DL-Methionine                      |    |
| L-Cysteine hydrochloride           |    |
| L-Ornithine monohydrochloride      |    |
| L-Cystine                          |    |
| DL-β-Phenylalanine                 |    |
| 3-(3,4-Dihydroxyphenyl)-DL-Alanine |    |
| L-Proline                          |    |
| L-Glutamic Acid                    |    |
| DL-Serine                          |    |
| Glycine                            |    |
| DL-Threonine                       |    |
| L-Histidine monohydrochloride      |    |
| DL-Tryptophan                      |    |
| L-Hydroxyproline                   |    |
| L-Tyrosine                         |    |
| DL-iso-Leucine                     |    |
| DL-Valine                          |    |

# B-ALANINE 99% FOR BIOCHEMISTRY

Buffer component 3-Aminopropionic acid ;(B-Aminopropionic Acid)

|                   |            |                  |                  |
|-------------------|------------|------------------|------------------|
| Product Code.     | 00085      | Grade            | For Biochemistry |
| Purity            | 99%        | CAS No.          | 107-95-9         |
| Molecular Formula | C3H7NO2    | Molecular Weight | 89.09            |
| H.S.Code          | 2922.49900 | Shelf Life       | 60 Months        |



## Physical Properties

|                                    |        |                 |                   |                                |                  |
|------------------------------------|--------|-----------------|-------------------|--------------------------------|------------------|
| Physical state at 20 °C            | Solid  | Colour          | White crystalline | pH value                       | 6 - 7.5          |
| Melting point/ Freezing point [°C] | 202 °C | Density [g/cm3] | 1.437             | Solubility in water [% weight] | Soluble in water |

## Packaging



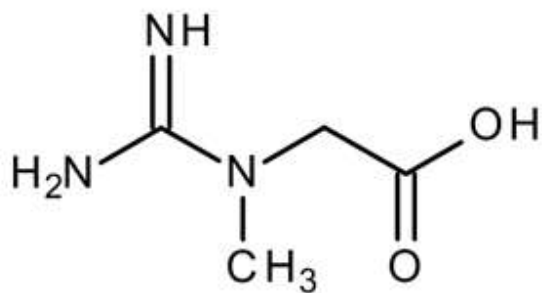
## Specification

|                          |                          |
|--------------------------|--------------------------|
| Appearance               | White Crystalline Powder |
| Assay (on dried basis)   | Min 99.0%                |
| Loss on dryig (at 110°C) | Max 0.5%                 |
| Sulphated ash            | Max 0.1%                 |
| Iron (Fe)                | Max 0.0005%              |
| Lead (Pb)                | Max 0.002%               |

# CREATINE MONOHYDRATE 99% EXTRAPURE

N-Amidinosarcosine, Creatine ; Creatine (Monohydrate)

|                   |              |                  |           |
|-------------------|--------------|------------------|-----------|
| Product Code.     | 00878        | Grade            |           |
| Purity            | 98%          | CAS No.          | 6020-87-7 |
| Molecular Formula | C4H9N3O2.H2O | Molecular Weight | 149.15    |
| H.S.Code          | 2925.29900   | Shelf Life       | 60 Months |



## Physical Properties

|                         |       |        |                   |                                    |        |
|-------------------------|-------|--------|-------------------|------------------------------------|--------|
| Physical state at 20 °C | Solid | Colour | White crystalline | Melting point/ Freezing point [°C] | 292 °C |
|-------------------------|-------|--------|-------------------|------------------------------------|--------|

## Packaging

## Specification

|               |                          |
|---------------|--------------------------|
| Appearance    | White crystalline powder |
| Assay         | Min 99%                  |
| Sulphated ash | Max 0.05%                |

## Safety Information and Hazard Symbols

|                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------|
|                                            |
| Symbol: GHS07<br>Signal Word: Warning<br>Hazardous Statement: H315-H319-H335<br>Precaution Statement: P261-P305 + P351 + P338 |

CREATINE MONOHYDRATE, 99%

|                   |               |                  |           |
|-------------------|---------------|------------------|-----------|
| Product Code.     | 0878A         | Grade            |           |
| Purity            | 99%           | CAS No.          | 6020-87-7 |
| Molecular Formula | C4H9N3O2 .H2O | Molecular Weight | 149.15    |
| H.S.Code          | 2925.29900    | Shelf Life       | 60 Months |

Physical Properties

|                         |       |        |                   |                                    |        |
|-------------------------|-------|--------|-------------------|------------------------------------|--------|
| Physical state at 20 °C | Solid | Colour | White crystalline | Melting point/ Freezing point [°C] | 292 °C |
|-------------------------|-------|--------|-------------------|------------------------------------|--------|

Packaging

Specification

|                        |                                                |
|------------------------|------------------------------------------------|
| Appearance (Color)     | White to yellow                                |
| Appearance (Form)      | Crystalline powder                             |
| Infrared spectrum      | Conforms                                       |
| Titration with HClO4   | >=98.5 %                                       |
| HPLC                   | >=98.5 % (on dry substance)                    |
| Loss on drying         | =<12.6 % (105°C)                               |
| Heavy metals (as Pb)   | =<10 ppm                                       |
| Residue after ignition | =<1 %                                          |
| Solubility             | (1 % in water) Clear colorless to light yellow |

Safety Information and Hazard Symbols

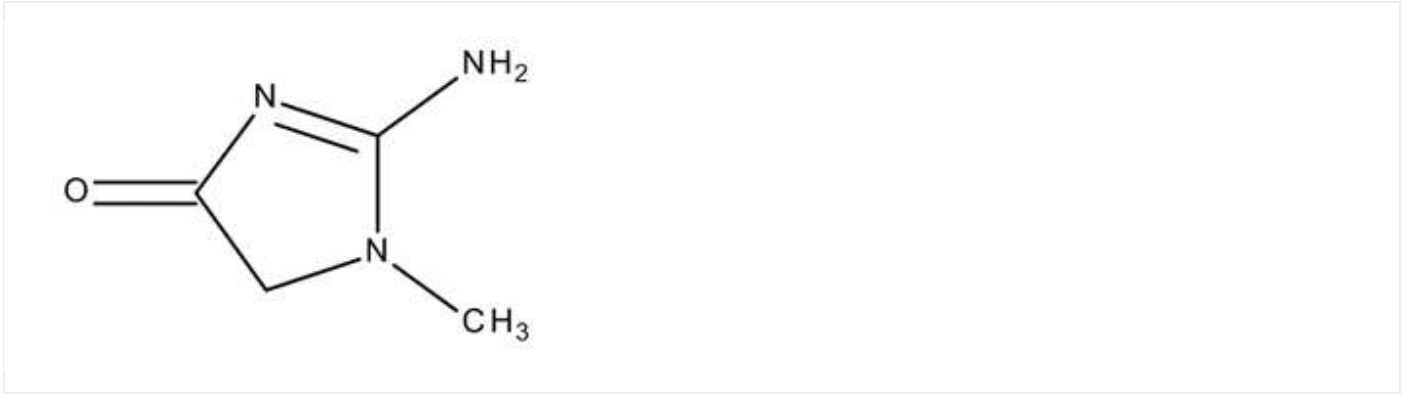
|                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------|
|                                            |
| Symbol: GHS07<br>Signal Word: Warning<br>Hazardous Statement: H315-H319-H335<br>Precaution Statement: P261-P305 + P351 + P338 |



CREATININE 99% AR

For determination of creatine in blood. (Confirms to USP) 2-Amino-1-methyl-2-imidazolin-4-one, 2-Imino-1-methylimidazolidin-4-one, 2-Imino-N-methylhydantoin

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 00880      | Grade            |           |
| Purity            | 99%        | CAS No.          | 60-27-5   |
| Molecular Formula | C4H7N3O    | Molecular Weight | 113.12    |
| H.S.Code          | 2933.29900 | Shelf Life       | 60 Months |



Physical Properties

|                                    |                           |                  |              |                 |           |
|------------------------------------|---------------------------|------------------|--------------|-----------------|-----------|
| Physical state at 20 °C            | Solid                     | Colour           | White powder | pH value        | 7.5 - 8.5 |
| Melting point/ Freezing point [°C] | 295 °C                    | Flash point [°C] | 290 °C       | Density [g/cm3] | 1.09      |
| Solubility in water [% weight]     | Slightly soluble in water |                  |              |                 |           |

Packaging

Specification

|                            |                                        |
|----------------------------|----------------------------------------|
| Appearance                 | A white crystals or crystalline powder |
| Assay (on anhydrous basis) | 99.0-102.0%                            |
| Identity (IR)              | To confirm the structure               |
| pH (5% solution in water)  | 7.0 – 9.0                              |
| Chloride (Cl)              | Max. 0.2%                              |
| Residue on ignition        | Max 0.2%                               |

|                                                                    |            |
|--------------------------------------------------------------------|------------|
| Heavy metal (as Pb)                                                | Max.0.001% |
| Loss on dryig (at 105°C; 4 hrs)                                    | Max 3.0%   |
| Specific absorptivity A1%/1cm (0.001%, in buffer pH 7.0 at 234 nm) | 620 – 640  |
| Creatine                                                           | Max 0.2%   |

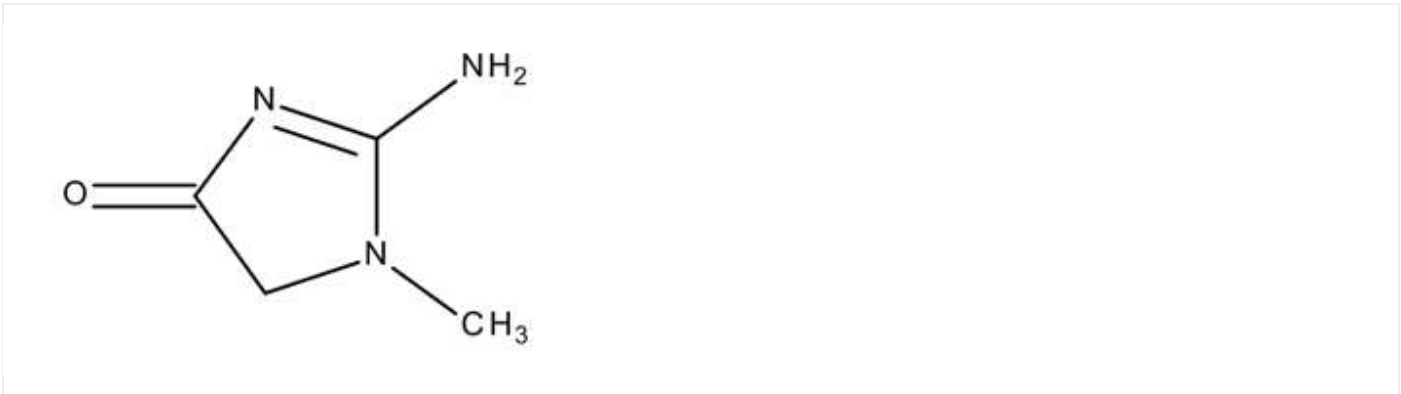
Safety Information and Hazard Symbols

|  |
|--|
|  |
|--|

CREATININE 99% EXTRAPURE

2-Amino-1-methyl-2-imidazolin-4-one, 2-Imino-1-methylimidazolidin-4-one, 2-Imino-N-methylhydantoin

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 00879      | Grade            |           |
| Purity            | 99%        | CAS No.          | 60-27-5   |
| Molecular Formula | C4H7N3O    | Molecular Weight | 113.12    |
| H.S.Code          | 2933.29900 | Shelf Life       | 60 Months |



Physical Properties

|                                    |                           |                  |              |                 |           |
|------------------------------------|---------------------------|------------------|--------------|-----------------|-----------|
| Physical state at 20 °C            | Solid                     | Colour           | White powder | pH value        | 7.5 - 8.5 |
| Melting point/ Freezing point [°C] | 295 °C                    | Flash point [°C] | 290 °C       | Density [g/cm3] | 1.09      |
| Solubility in water [% weight]     | Slightly soluble in water |                  |              |                 |           |

Packaging

|  |
|--|
|  |
|--|

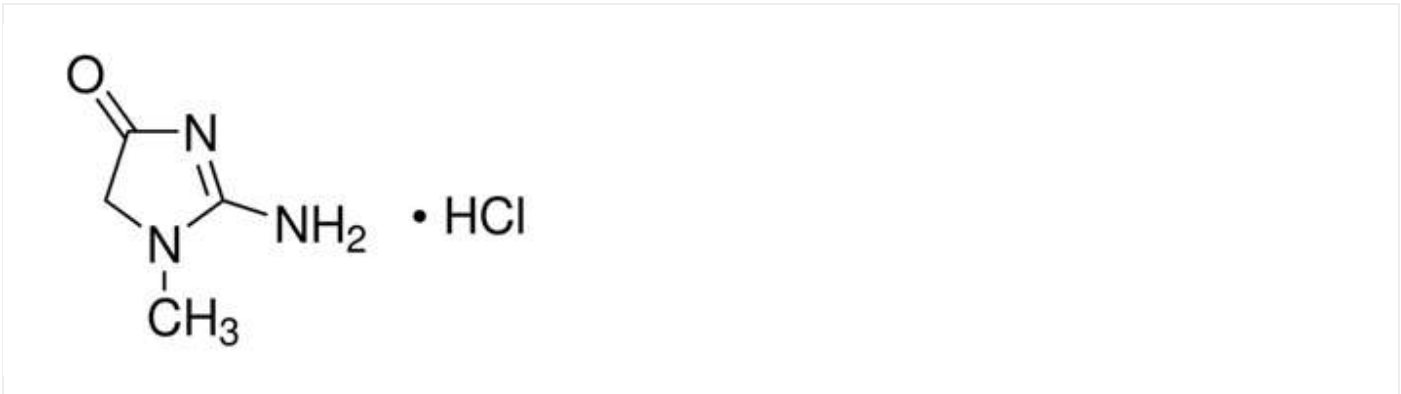
Specification

|                           |                |
|---------------------------|----------------|
| Appearance                | A white powder |
| Assay (ex N)              | Min 99%        |
| pH (5% solution in water) | 7.0 - 9.0      |
| Chloride (Cl)             | Max 0.2%       |
| Heavy metal (as Pb)       | Max 0.01%      |
| Creatine                  | Max 0.2%       |

CREATININE HYDROCHLORIDE FOR BIOCHEMISTRY

2-Amino-1-methyl-2-imidazolin-4-one, 2-Imino-1-methylimidazolidin-4-one, 2-Imino-N-methylhydantoin

|                   |             |                  |            |
|-------------------|-------------|------------------|------------|
| Product Code.     | 00881       | Grade            |            |
| Purity            | 98%         | CAS No.          | 19230-81-0 |
| Molecular Formula | C4H7N3O.HCl | Molecular Weight | 149.60     |
| H.S.Code          | 2933.29900  | Shelf Life       | 60 Months  |



Physical Properties

|                         |       |        |              |
|-------------------------|-------|--------|--------------|
| Physical state at 20 °C | Solid | Colour | White powder |
|-------------------------|-------|--------|--------------|

Packaging

Specification

|            |                |
|------------|----------------|
| Appearance | A white powder |
|------------|----------------|

Safety Information and Hazard Symbols

CREATININE ZINC CHLORIDE 99% EXTRAPURE

Standard for creatinine determination 2-Amino-1-methyl-2-imidazolin-4-one hydrochloride

|                   |                |                  |            |
|-------------------|----------------|------------------|------------|
| Product Code.     | 00882          | Grade            |            |
| Purity            | 98%            | CAS No.          | 62708-52-5 |
| Molecular Formula | C8H14Cl2N6O2Zn | Molecular Weight | 362.52     |
| H.S.Code          | 2933.29900     | Shelf Life       | 60 Months  |

Physical Properties

|                         |       |        |                  |
|-------------------------|-------|--------|------------------|
| Physical state at 20 °C | Solid | Colour | Off white powder |
|-------------------------|-------|--------|------------------|

Packaging

|  |
|--|
|  |
|--|

Specification

|            |                  |
|------------|------------------|
| Appearance | Off-white powder |
| Assay      | Min 98%          |

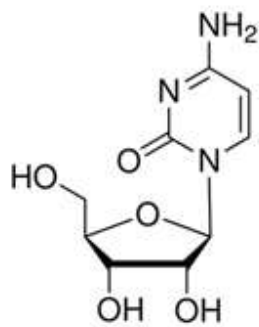
Safety Information and Hazard Symbols

|  |
|--|
|  |
|--|

# CYTIDINE 99% FOR BIOCHEMISTRY

Cytosine β-D-ribose; Cytosine-1-β-D-ribofuranoside ; d-Cytidine

|                   |            |                  |                  |
|-------------------|------------|------------------|------------------|
| Product Code.     | 00926      | Grade            | For Biochemistry |
| Purity            | 99%        | CAS No.          | 65-46-3          |
| Molecular Formula | C9H13N3O5  | Molecular Weight | 243.22           |
| H.S.Code          | 2934.99000 | Shelf Life       | 60 Months        |



## Physical Properties

|                         |       |        |                   |                                    |              |
|-------------------------|-------|--------|-------------------|------------------------------------|--------------|
| Physical state at 20 °C | Solid | Colour | White crystalline | Melting point/ Freezing point [°C] | 210 - 220 °C |
|-------------------------|-------|--------|-------------------|------------------------------------|--------------|

## Packaging

|  |
|--|
|  |
|--|

## Specification

|               |              |
|---------------|--------------|
| Appearance    | White powder |
| Assay         | Min 99.0%    |
| Melting point | 210 - 220°C  |
| Ash content   | Max 0.05%    |

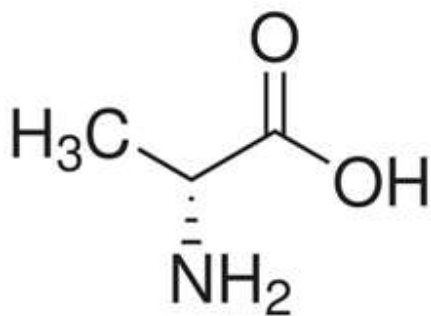
## Safety Information and Hazard Symbols

|  |
|--|
|  |
|--|

## D-ALANINE 99% FOR BIOCHEMISTRY

(R)-2-Aminopropionic acid ; (D-2-Aminopropionic Acid)

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 00086      | Grade            |           |
| Purity            | Min. 99%   | CAS No.          | 338-69-2  |
| Molecular Formula | C3H7NO2    | Molecular Weight | 89.09     |
| H.S.Code          | 2922.49900 | Shelf Life       | 60 Months |



### Physical Properties

|                         |       |        |                   |                                    |        |
|-------------------------|-------|--------|-------------------|------------------------------------|--------|
| Physical state at 20 °C | Solid | Colour | White crystalline | Melting point/ Freezing point [°C] | 291 °C |
|-------------------------|-------|--------|-------------------|------------------------------------|--------|

### Packaging



### Specification

|                                                                                                 |                                       |
|-------------------------------------------------------------------------------------------------|---------------------------------------|
| Appearance                                                                                      | White to off white crystalline Powder |
| Assay                                                                                           | Min 99.0%                             |
| Specific optical rotation ([α] <sub>D</sub> <sup>20</sup> ; c=10; 6 N HCl; on dried substance)) | -13.5° to -15.5°                      |

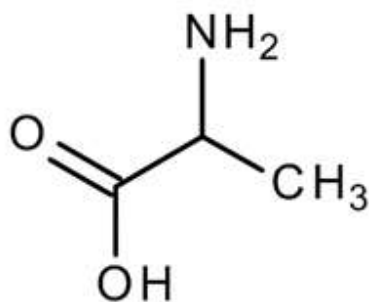
### Safety Information and Hazard Symbols

|  |
|--|
|  |
|--|

# DL-ALANINE 99% FOR BIOCHEMISTRY

DL-2-Aminocaproic acid ; (DL-Aminopropionic acid)

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 00087      | Grade            |           |
| Purity            | Min. 99%   | CAS No.          | 302-72-7  |
| Molecular Formula | C3H7NO2    | Molecular Weight | 89.09     |
| H.S.Code          | 2922.49900 | Shelf Life       | 60 Months |



## Physical Properties

|                         |       |        |                   |                                    |        |
|-------------------------|-------|--------|-------------------|------------------------------------|--------|
| Physical state at 20 °C | Solid | Colour | White crystalline | Melting point/ Freezing point [°C] | 289 °C |
|-------------------------|-------|--------|-------------------|------------------------------------|--------|

## Packaging



## Specification

|                                        |                          |
|----------------------------------------|--------------------------|
| Appearance                             | White Crystalline Powder |
| Assay (by HClO <sub>4</sub> titration) | Min 99.0%                |
| Heavy metal (as Pb)                    | Max 0.001%               |

## Safety Information and Hazard Symbols

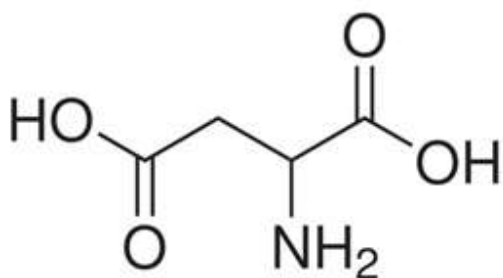
|  |
|--|
|  |
|--|



# DL-ASPARTIC ACID 99% EXTRAPURE CHROMATOGRAPHIC STANDARD

(±)-2-Aminosuccinic acid

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 00310      | Grade            |           |
| Purity            | 99%        | CAS No.          | 617-45-8  |
| Molecular Formula | C4H7NO4    | Molecular Weight | 133.10    |
| H.S.Code          | 2922.49900 | Shelf Life       | 60 Months |



## Physical Properties

|                         |       |                                |                           |                                    |          |
|-------------------------|-------|--------------------------------|---------------------------|------------------------------------|----------|
| Physical state at 20 °C | Solid | Colour                         | White crystalline         | Melting point/ Freezing point [°C] | > 300 °C |
| Density [g/cm3]         | 1.663 | Solubility in water [% weight] | Slightly soluble in water |                                    |          |

## Packaging



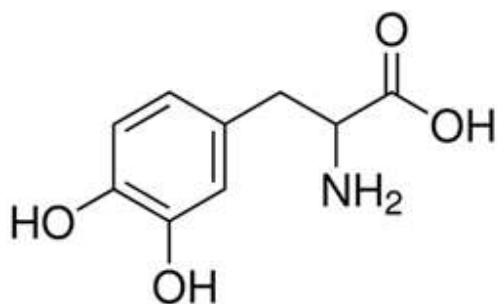
## Specification

|               |                          |
|---------------|--------------------------|
| Appearance    | White crystalline powder |
| Assay         | Min 99%                  |
| Sulphated ash | Max 0.1%                 |

# DL-DOPA 99% FOR BIOCHEMISTRY

3,4-Dihydroxy-DL-phenylalanine

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 01011      | Grade            |           |
| Purity            | 99%        | CAS No.          | 63-84-3   |
| Molecular Formula | C9H11NO4   | Molecular Weight | 197.19    |
| H.S.Code          | 2922.29900 | Shelf Life       | 60 Months |



## Physical Properties

|                                    |        |        |                    |       |          |
|------------------------------------|--------|--------|--------------------|-------|----------|
| Physical state at 20 °C            | Solid  | Colour | White to off white | Odour | Odorless |
| Melting point/ Freezing point [°C] | 270 °C |        |                    |       |          |

## Packaging

## Specification

|            |                           |
|------------|---------------------------|
| Appearance | White to off-white powder |
| Assay      | Min 99%                   |

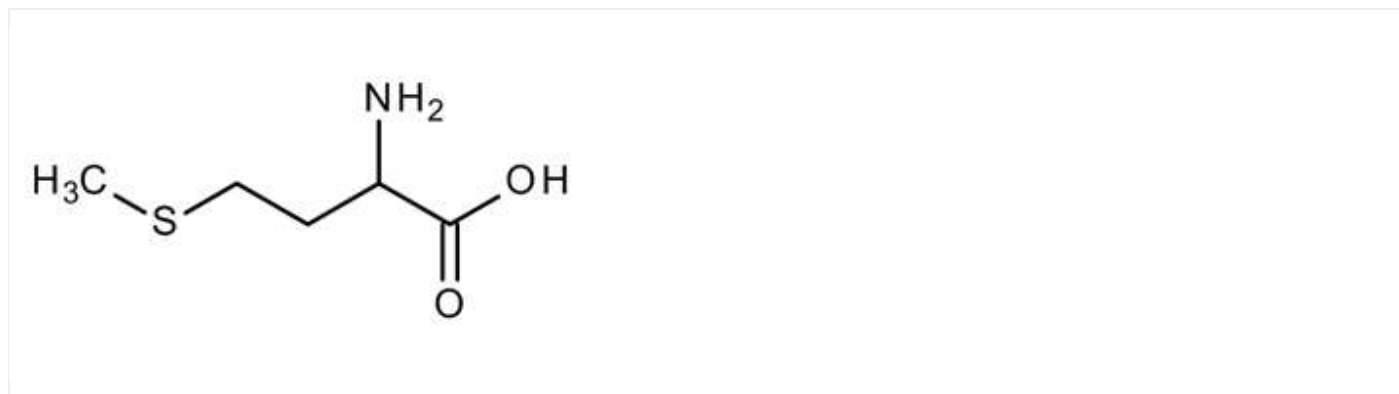
## Safety Information and Hazard Symbols

|                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                               |
| Symbol: GHS07<br>Signal Word: Warning<br>Hazardous Statement: H315-H319-H335<br>Precaution Statement: P261-P305 + P351 + P338 |

## DL-METHIONINE 99% FOR BIOCHEMISTRY

(Confirms to BP) (±)-2-Amino-4-(methylmercapto)butyric acid; DL-2-Amino-4-(methylthio)butanoic acid

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 01697      | Grade            |           |
| Purity            | 99%        | CAS No.          | 59-51-8   |
| Molecular Formula | C5H11NO2S  | Molecular Weight | 149.21    |
| H.S.Code          | 2930.40000 | Shelf Life       | 60 Months |



### Physical Properties

|                         |        |                 |                |                                    |                  |
|-------------------------|--------|-----------------|----------------|------------------------------------|------------------|
| Physical state at 20 °C | Solid  | Colour          | White granular | Melting point/ Freezing point [°C] | 280 °C           |
| Boiling point [°C]      | 186 °C | Density [g/cm3] | 1.34           | Solubility in water [% weight]     | Soluble in water |

### Packaging

|  |
|--|
|  |
|--|

### Specification

|                                            |                                                                                                                                             |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Appearance                                 | White to almost white, crystalline powder or small flakes, melt at 270°C                                                                    |
| Assay (potentiometric; on anhydrous basis) | 99.0-101.0%                                                                                                                                 |
| Solubility                                 | Sparingly soluble in water, very slightly soluble in alcohol. It dissolves in dilute acids and in dilute solutions of the alkali hydroxides |
| Identifications                            | To comply BP test                                                                                                                           |
| Appearance of solution                     | To comply BP test                                                                                                                           |
| Loss on drying (at 105°C; 3 hrs)           | Max 0.5%                                                                                                                                    |

|                              |                   |
|------------------------------|-------------------|
| pH (2% solution in water)    | 5.4 to 6.1        |
| Chlorides                    | Max 0.02%         |
| Sulphates                    | Max 0.02%         |
| Heavy metal (as Pb)          | Max 0.002%        |
| Sulphated ash                | Max 0.1%          |
| Related Substances ( by TLC) | To comply BP test |

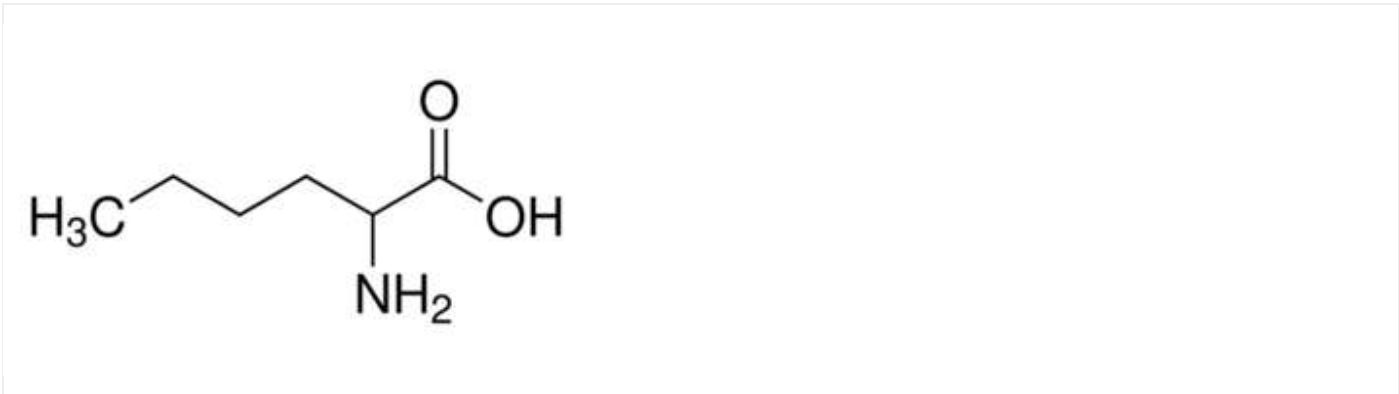
Safety Information and Hazard Symbols

|  |
|--|
|  |
|--|

# DL-NOR-LEUCINE 98+% FOR BIOCHEMISTRY

(±)-Amino-4-methylpentanoic acid

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 01539      | Grade            |           |
| Purity            | 99%        | CAS No.          | 616-06-8  |
| Molecular Formula | C6H13NO2   | Molecular Weight | 131.17    |
| H.S.Code          | 2922.49900 | Shelf Life       | 60 Months |



## Physical Properties

|                         |       |        |                    |                                    |          |
|-------------------------|-------|--------|--------------------|------------------------------------|----------|
| Physical state at 20 °C | Solid | Colour | White to off white | Melting point/ Freezing point [°C] | > 300 °C |
|-------------------------|-------|--------|--------------------|------------------------------------|----------|

## Packaging

## Specification

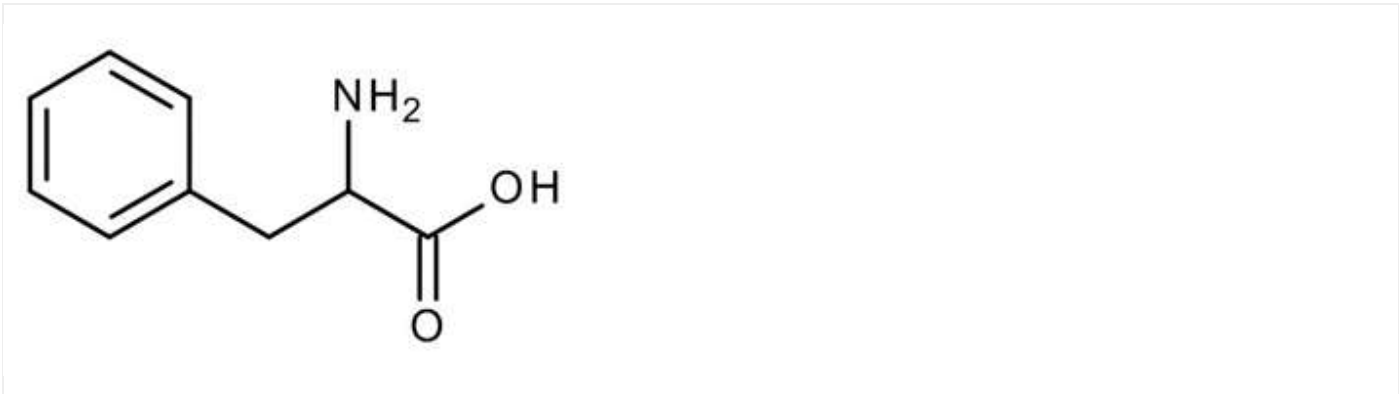
|            |                                       |
|------------|---------------------------------------|
| Appearance | White to off-white crystalline powder |
|------------|---------------------------------------|

## Safety Information and Hazard Symbols

DL-PHENYLALANINE 99% FOR BIOCHEMISTRY

(±)2-Amino-3-phenylpropionic acid

|                   |            |                  |                  |
|-------------------|------------|------------------|------------------|
| Product Code.     | 01984      | Grade            | For Biochemistry |
| Purity            | 98.5%      | CAS No.          | 150-30-1         |
| Molecular Formula | C9H11NO2   | Molecular Weight | 165.19           |
| H.S.Code          | 2922.49900 | Shelf Life       | 60 Months        |



Physical Properties

|                                    |       |                                |                   |       |          |
|------------------------------------|-------|--------------------------------|-------------------|-------|----------|
| Physical state at 20 °C            | Solid | Colour                         | White crystalline | Odour | Odorless |
| Melting point/ Freezing point [°C] | 272°C | Solubility in water [% weight] | Soluble in water  |       |          |

Packaging

|  |
|--|
|  |
|--|

Specification

|                                                  |              |
|--------------------------------------------------|--------------|
| Appearance                                       | White powder |
| Assay (by HClO4 titration)                       | Min 99%      |
| Heavy metal (as Pb)                              | Max 0.001%   |
| Ammonium (NH4)                                   | Max 0.01%    |
| Foreign amino acids                              | Max 0.3%     |
| Other ninhydrin positive substances (as glycine) | Max 0.1%     |

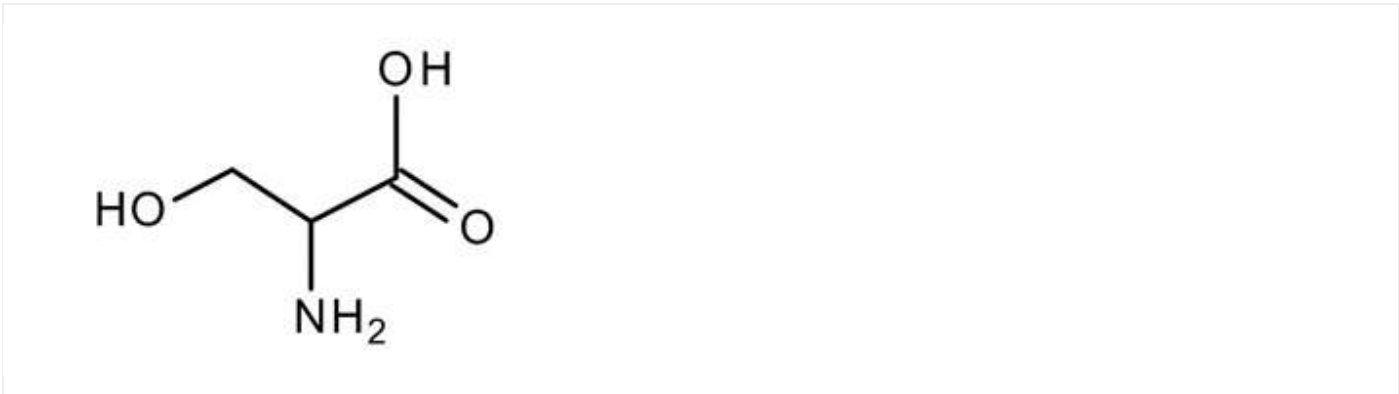
Safety Information and Hazard Symbols

|  |
|--|
|  |
|--|

# DL-SERINE 99%+ FOR SYNTHESIS

(±)-2-Amino-3-hydroxypropionic acid

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 02296      | Grade            |           |
| Purity            | 99%        | CAS No.          | 302-84-1  |
| Molecular Formula | C3H7NO3    | Molecular Weight | 105.09    |
| H.S.Code          | 2922.50900 | Shelf Life       | 60 Months |



## Physical Properties

|                                    |        |                 |                   |                                |                  |
|------------------------------------|--------|-----------------|-------------------|--------------------------------|------------------|
| Physical state at 20 °C            | Solid  | Colour          | White crystalline | Odour                          | Odorless         |
| Melting point/ Freezing point [°C] | 240 °C | Density [g/cm3] | 1.537             | Solubility in water [% weight] | Soluble in water |

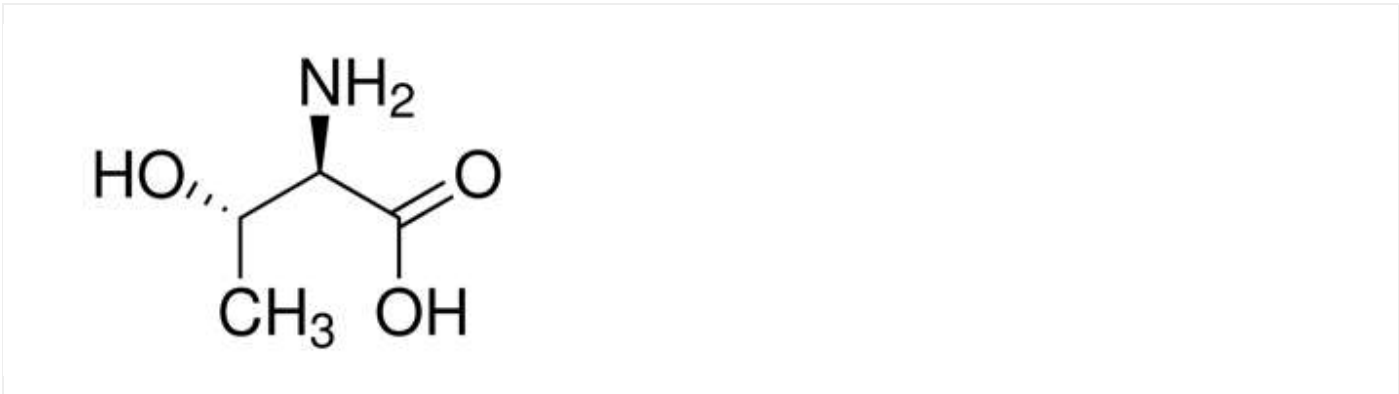
## Packaging

## Specification

|                           |              |
|---------------------------|--------------|
| Appearance                | White powder |
| Assay                     | Min 99%      |
| Loss on drying (at 105°C) | Max 0.5%     |
| Sulphated ash             | Max 0.1%     |
| Iron (Fe)                 | Max 0.003%   |
| Lead (Pb)                 | Max 0.001%   |

DL-THREONINE 99% FOR BIOCHEMISTRY  
(±)-2-Amino-3-hydroxybutyric acid

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 02692      | Grade            |           |
| Purity            | 99%        | CAS No.          | 80-68-2   |
| Molecular Formula | C4H9NO3    | Molecular Weight | 119.12    |
| H.S.Code          | 2922.50900 | Shelf Life       | 60 Months |



Physical Properties

|                                |                  |        |              |                                    |        |
|--------------------------------|------------------|--------|--------------|------------------------------------|--------|
| Physical state at 20 °C        | Solid            | Colour | White powder | Melting point/ Freezing point [°C] | 244 °C |
| Solubility in water [% weight] | 200 g/l at 25 °C |        |              |                                    |        |

Packaging

|  |
|--|
|  |
|--|

Specification

|                            |                |
|----------------------------|----------------|
| Appearance                 | A white powder |
| Assay (by HClO4 titration) | Min 99%        |
| Heavy metal (as Pb)        | Max 0.001%     |

Safety Information and Hazard Symbols

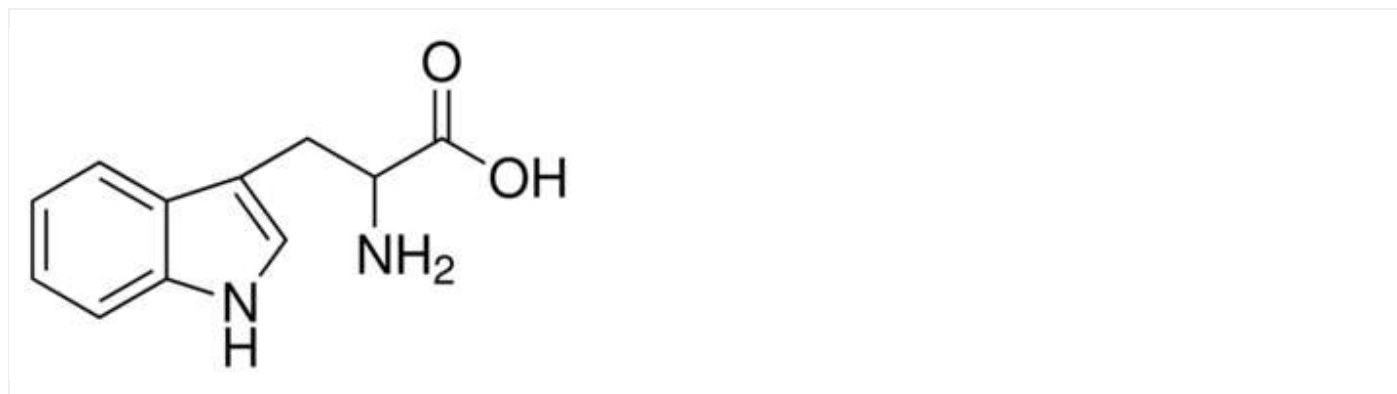
|  |
|--|
|  |
|--|



## DL-TRYPTOPHAN 99% FOR BIOCHEMISTRY

Suitable for bacteriology and tissue culture. ( $\pm$ )- $\alpha$ -Amino-3-indolepropionic acid; ( $\pm$ )-2-Amino-3-(3-indolyl)propionic acid; DL-3 $\beta$ -Indolylalanine

|                   |                                                               |                  |                  |
|-------------------|---------------------------------------------------------------|------------------|------------------|
| Product Code.     | 02794                                                         | Grade            | For Biochemistry |
| Purity            | 99%                                                           | CAS No.          | 54-12-6          |
| Molecular Formula | C <sub>11</sub> H <sub>12</sub> N <sub>2</sub> O <sub>2</sub> | Molecular Weight | 204.23           |
| H.S.Code          | 2933.99000                                                    | Shelf Life       | 60 Months        |



### Physical Properties

|                                    |              |                                |                            |       |          |
|------------------------------------|--------------|--------------------------------|----------------------------|-------|----------|
| Physical state at 20 °C            | Solid        | Colour                         | White crystalline          | Odour | Odorless |
| Melting point/ Freezing point [°C] | 289 - 290 °C | Solubility in water [% weight] | Partially soluble in water |       |          |

### Packaging

|  |
|--|
|  |
|--|

### Specification

|                                        |                                                         |
|----------------------------------------|---------------------------------------------------------|
| Appearance                             | White to off white to creamish white crystalline powder |
| Assay (by HClO <sub>4</sub> titration) | Min 99%                                                 |
| Heavy metal (as Pb)                    | Max 0.001%                                              |

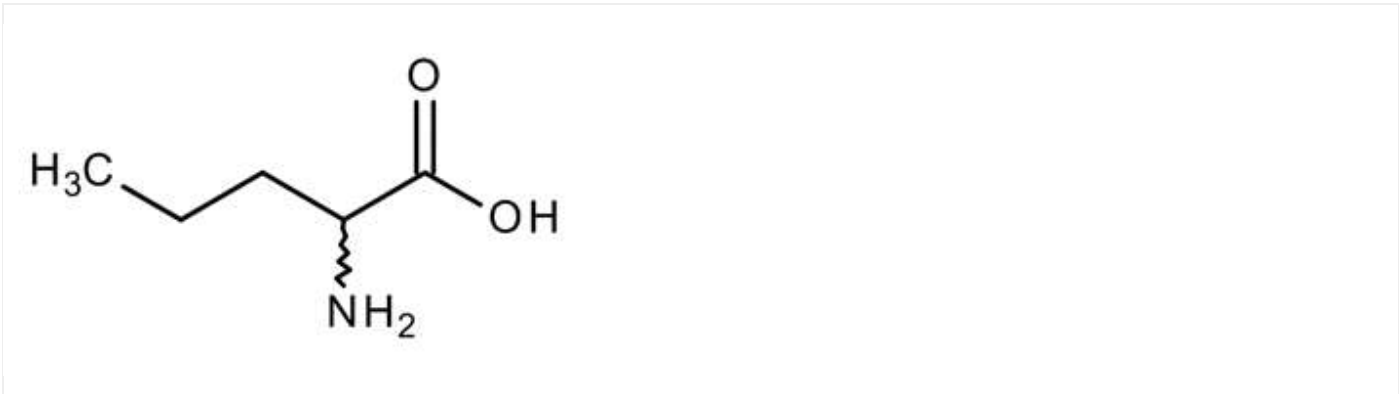
### Safety Information and Hazard Symbols

|  |
|--|
|  |
|--|

# DL-VALINE 99+% FOR BIOCHEMISTRY

±)-a-Aminoisovaleric acid, DL-2-Amino-3-methylbutanoic acid

|                   |            |                  |                  |
|-------------------|------------|------------------|------------------|
| Product Code.     | 02819      | Grade            | For Biochemistry |
| Purity            | 99%        | CAS No.          | 516-06-3         |
| Molecular Formula | C5H11NO2   | Molecular Weight | 117.15           |
| H.S.Code          | 2922.49900 | Shelf Life       | 60 Months        |



## Physical Properties

|                                    |        |                 |                   |                                |               |
|------------------------------------|--------|-----------------|-------------------|--------------------------------|---------------|
| Physical state at 20 °C            | Solid  | Colour          | White crystalline | Odour                          | Odorless      |
| Melting point/ Freezing point [°C] | 295 °C | Density [g/cm3] | 1.23              | Solubility in water [% weight] | 68 g/l (20°C) |

## Packaging

## Specification

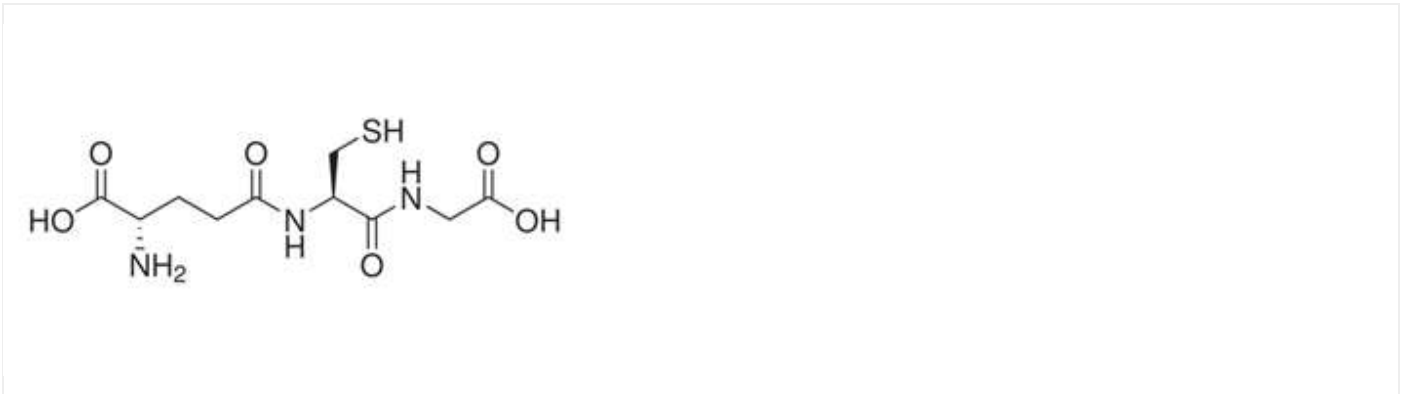
|                     |                          |
|---------------------|--------------------------|
| Appearance          | White crystalline powder |
| Assay               | Min 99%                  |
| Heavy metal (as Pb) | Max 0.001%               |

## Safety Information and Hazard Symbols

GLUTATHIONE (REDUCED) 99% FOR BIOCHEMISTRY

Biological reducing agent in thiol-dependent enzyme reactions -L-Glutamyl-L-cysteinyl-glycine; GSH

|                   |             |                  |           |
|-------------------|-------------|------------------|-----------|
| Product Code.     | 01290       | Grade            |           |
| Purity            | 99%         | CAS No.          | 70-18-8   |
| Molecular Formula | C10H17N3O6S | Molecular Weight | 307.33    |
| H.S.Code          | 2930.90990  | Shelf Life       | 60 Months |



Physical Properties

|                                    |              |        |              |       |          |
|------------------------------------|--------------|--------|--------------|-------|----------|
| Physical state at 20 °C            | Solid        | Colour | White powder | Odour | Odorless |
| Melting point/ Freezing point [°C] | 192 - 195 °C |        |              |       |          |

Packaging

|  |
|--|
|  |
|--|

Specification

|                     |                 |
|---------------------|-----------------|
| Appearance          | White powder    |
| Assay               | Min 99%         |
| Melting range       | 185 - 195 deg C |
| Heavy metal (as Pb) | Max 0.001%      |

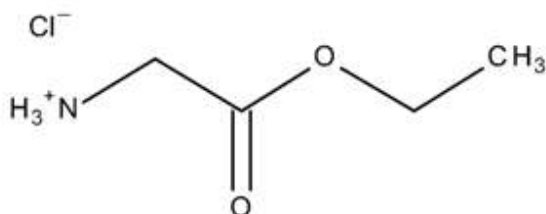
Safety Information and Hazard Symbols

|  |
|--|
|  |
|--|

# GLYCINE ETHYLESTER HYDROCHLORIDE 99% FOR SYNTHESIS

Ethyl glycinate hydrochloride; GEE

|                   |                                                    |                  |           |
|-------------------|----------------------------------------------------|------------------|-----------|
| Product Code.     | 01296                                              | Grade            |           |
| Purity            | 99%                                                | CAS No.          | 623-33-6  |
| Molecular Formula | C <sub>4</sub> H <sub>9</sub> NO <sub>2</sub> .HCl | Molecular Weight | 139.60    |
| H.S.Code          | 2922.49100                                         | Shelf Life       | 60 Months |



## Physical Properties

|                                    |              |                                |                       |                                                       |          |
|------------------------------------|--------------|--------------------------------|-----------------------|-------------------------------------------------------|----------|
| Physical state at 20 °C            | Solid        | Colour                         | White crystalline     | Odour                                                 | Odorless |
| Melting point/ Freezing point [°C] | 145 - 146 °C | Solubility in water [% weight] | >1000 g/l water 20 °C | Partition coefficient Log Pow octanol / water at 20°C | -0.145   |

## Specification

|                     |                          |
|---------------------|--------------------------|
| Appearance          | White crystalline powder |
| Assay               | Min 99%                  |
| Residue on ignition | Max 0.05%                |
| Melting point       | 145 - 148 deg C          |
| Iron (Fe)           | Max 0.001%               |

## Safety Information and Hazard Symbols



Symbol: GHS05

Signal Word: Danger

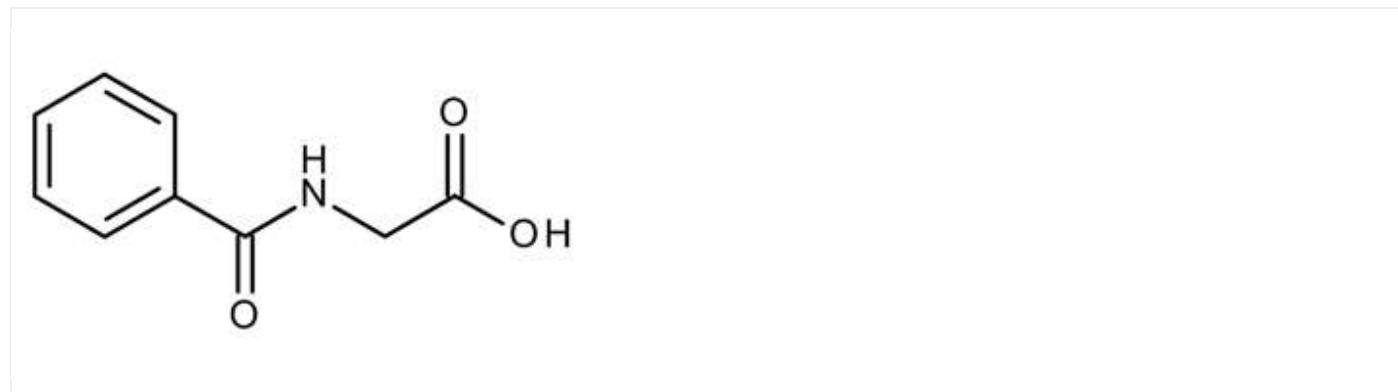
Hazardous Statement: H318

Precaution Statement: P280-P305 + P351 + P338

# HIPPURIC ACID 98% FOR SYNTHESIS

N-Benzoylglycine; Benzoylaminoacetic acid

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 01357      | Grade            |           |
| Purity            | 98%        | CAS No.          | 495-69-2  |
| Molecular Formula | C9H9NO3    | Molecular Weight | 179.18    |
| H.S.Code          | 2924.29900 | Shelf Life       | 60 Months |



## Physical Properties

|                                                       |       |        |                  |                                    |              |
|-------------------------------------------------------|-------|--------|------------------|------------------------------------|--------------|
| Physical state at 20 °C                               | Solid | Colour | Off white powder | Melting point/ Freezing point [°C] | 187 - 191 °C |
| Partition coefficient Log Pow octanol / water at 20°C | 0.711 |        |                  |                                    |              |

## Specification

|               |                     |
|---------------|---------------------|
| Appearance    | An off-white powder |
| Assay         | Min 98%             |
| Melting point | 187 - 192 deg C     |

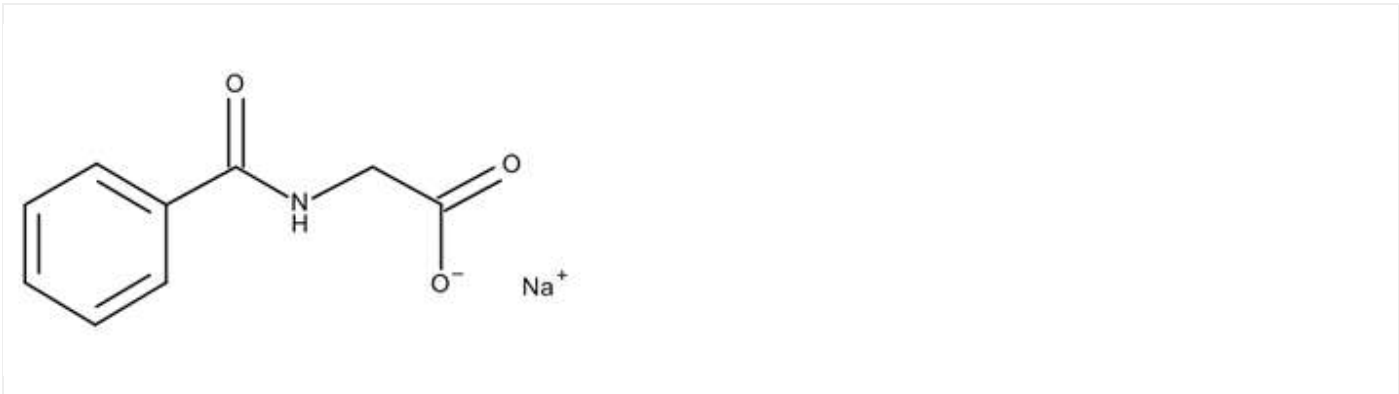
## Safety Information and Hazard Symbols

|                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------|
|                                                            |
| Symbol: GHS05, GHS07<br>Signal Word: Danger<br>Hazardous Statement: H302-H315-H318-H335<br>Precaution Statement: P261-P280-P305 + P351 + P338 |

HIPPURIC ACID SODIUM SALT 99% EXTRAPURE

Benzoylaminoacetic acid sodium salt; Sodium hippurate; N-Benzoylglycine sodium salt

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 01358      | Grade            |           |
| Purity            | 99%        | CAS No.          | 532-94-5  |
| Molecular Formula | C9H8NNaO3  | Molecular Weight | 201.16    |
| H.S.Code          | 2924.29900 | Shelf Life       | 60 Months |



Physical Properties

|                         |       |        |              |
|-------------------------|-------|--------|--------------|
| Physical state at 20 °C | Solid | Colour | White powder |
|-------------------------|-------|--------|--------------|

Packaging

|  |
|--|
|  |
|--|

Specification

|                            |                  |
|----------------------------|------------------|
| Appearance                 | Off-white powder |
| Assay (on anhydrous basis) | Min 99%          |
| Water (by KF)              | ~3.0%            |
| Identity (IR)              | Passes test      |

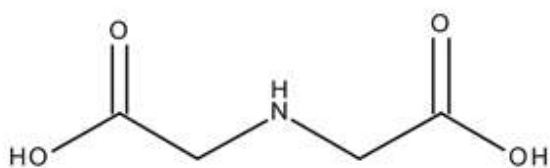
Safety Information and Hazard Symbols

|  |
|--|
|  |
|--|

# IMINODIACETIC ACID 98% FOR SYNTHESIS

IDA; Diglycolamidic acid

|                   |            |                  |               |
|-------------------|------------|------------------|---------------|
| Product Code.     | 01430      | Grade            | For Synthesis |
| Purity            | 98%        | CAS No.          | 142-73-4      |
| Molecular Formula | C4H7NO4    | Molecular Weight | 133.10        |
| H.S.Code          | 2922.49900 | Shelf Life       | 60 Months     |



## Physical Properties

|                                    |        |                                |                            |       |          |
|------------------------------------|--------|--------------------------------|----------------------------|-------|----------|
| Physical state at 20 °C            | Solid  | Colour                         | White to off white         | Odour | Odorless |
| Melting point/ Freezing point [°C] | 243 °C | Solubility in water [% weight] | Partially soluble in water |       |          |

## Specification

|                                    |                           |
|------------------------------------|---------------------------|
| Appearance                         | White to off-white powder |
| Assay (alkalimetric)               | Min 98%                   |
| Melting range (with decomposition) | 239 - 241°C               |

## Safety Information and Hazard Symbols

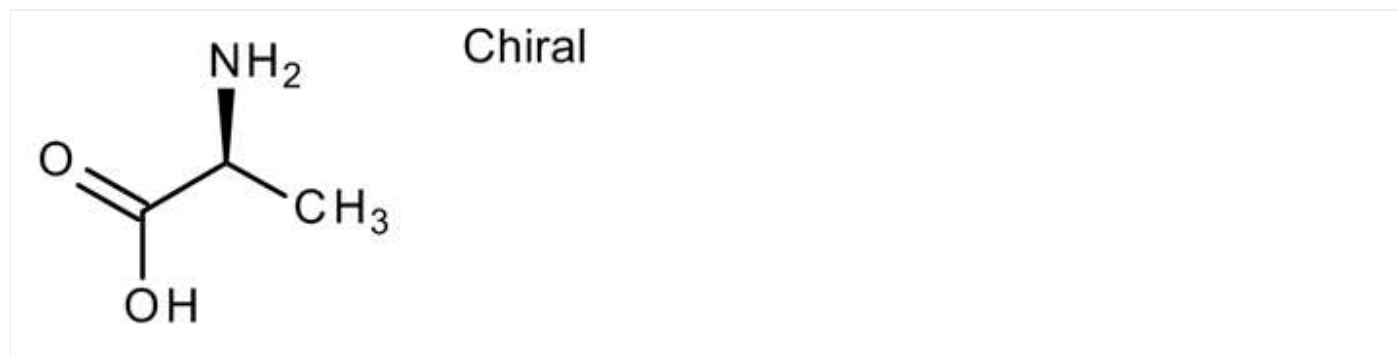


Symbol: GHS07  
Signal Word: Warning  
Hazardous Statement: H315-H319-H335  
Precaution Statement: P261-P305 + P351 + P338

## L-ALANINE 99% FOR BIOCHEMISTRY

Pyrogen free for bacteriology and tissue culture (C=5 in HCl 1mol/litre) L-2-Aminopropionic acid

|                   |            |                  |                  |
|-------------------|------------|------------------|------------------|
| Product Code.     | 00088      | Grade            | For Biochemistry |
| Purity            | 99%        | CAS No.          | 56-41-7          |
| Molecular Formula | C3H7NO2    | Molecular Weight | 89.09            |
| H.S.Code          | 2922.49900 | Shelf Life       | 60 Months        |



### Physical Properties

|                         |       |                                |                   |                                    |       |
|-------------------------|-------|--------------------------------|-------------------|------------------------------------|-------|
| Physical state at 20 °C | Solid | Colour                         | White crystalline | Melting point/ Freezing point [°C] | 210°C |
| Density [g/cm3]         | 1.437 | Solubility in water [% weight] | Soluble in water  |                                    |       |

### Packaging



### Specification

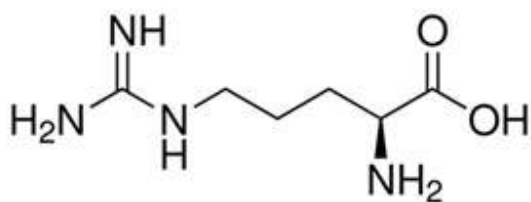
|                                                             |                          |
|-------------------------------------------------------------|--------------------------|
| Appearance                                                  | White Crystalline Powder |
| Assay (by HClO <sub>4</sub> titration)                      | Min 99.0%                |
| Heavy metal (as Pb)                                         | Max 0.001%               |
| Ammonium (NH <sub>4</sub> )                                 | Max 0.01%                |
| Foreign amino acids                                         | Max 0.3%                 |
| Ninhydrine positive substances (as glycine)                 | Max 0.1%                 |
| Specific optical rotation ([α] <sub>D</sub> <sup>20</sup> ) | +14 to +15 deg           |



# L-ARGININE 99% FOR BIOCHEMISTRY (FREE BASE)

(S)-2-Amino-5-guanidinopentanoic acid

|                   |                                                              |                  |                  |
|-------------------|--------------------------------------------------------------|------------------|------------------|
| Product Code.     | 00299                                                        | Grade            | For Biochemistry |
| Purity            | 99%                                                          | CAS No.          | 74-79-3          |
| Molecular Formula | C <sub>6</sub> H <sub>14</sub> N <sub>4</sub> O <sub>2</sub> | Molecular Weight | 174.20           |
| H.S.Code          | 2922.49900                                                   | Shelf Life       | 60 Months        |



## Physical Properties

|                                    |        |                                |                                        |          |           |
|------------------------------------|--------|--------------------------------|----------------------------------------|----------|-----------|
| Physical state at 20 °C            | Solid  | Colour                         | White crystals                         | pH value | 10.5 - 12 |
| Melting point/ Freezing point [°C] | 222 °C | Solubility in water [% weight] | 87.1 g/l at 20 °C - completely soluble |          |           |

## Packaging



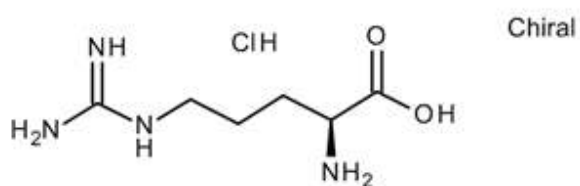
## Specification

|                                          |                                                      |
|------------------------------------------|------------------------------------------------------|
| Appearance                               | White to almost white crystalline powder or crystals |
| Assay                                    | Min 99.0%                                            |
| Heavy metal (as Pb)                      | Max 0.001%                                           |
| Ammonium (NH <sub>4</sub> )              | Max 0.01%                                            |
| Specific optical rotation (c=5; 5 M HCl) | +26.5 +/-0.5°                                        |

# L-ARGININE MONOHYDROCHLORIDE 99% FOR BIOCHEMISTRY

S-(+)-2-Amino-5-[(aminoiminomethyl)amino]pentanoic acid monohydrochloride

|                   |             |                  |           |
|-------------------|-------------|------------------|-----------|
| Product Code.     | 00300       | Grade            |           |
| Purity            | 99%         | CAS No.          | 1119-34-2 |
| Molecular Formula | C6H15ClN4O2 | Molecular Weight | 210.66    |
| H.S.Code          | 2922.49900  | Shelf Life       | 60 Months |



## Physical Properties

|                                |                                       |                                    |                   |                 |          |
|--------------------------------|---------------------------------------|------------------------------------|-------------------|-----------------|----------|
| Physical state at 20 °C        | Solid                                 | Colour                             | White crystalline | Odour           | Odorless |
| pH value                       | 5.5 - 7                               | Melting point/ Freezing point [°C] | 226 - 230 °C      | Density [g/cm3] | 1.42     |
| Solubility in water [% weight] | 211 g/l at 20 °C - completely soluble |                                    |                   |                 |          |

## Packaging



## Specification

|                            |                            |
|----------------------------|----------------------------|
| Appearance                 | A white crystalline powder |
| Assay (by HClO4 titration) | Min 99.0%                  |
| Heavy metal (as Pb)        | Max 0.001%                 |

|                                                  |                 |
|--------------------------------------------------|-----------------|
| Ammonium (NH <sub>4</sub> )                      | Max 0.01%       |
| Foreign amino acids                              | Max 0.3%        |
| Other ninhydrin positive substances (as glycine) | Max 0.1%        |
| Specific optical rotation (c=5; 5 M HCl)         | +22.0+/-0.5 deg |

## Safety Information and Hazard Symbols



Symbol: GHS07

Signal Word: Warning

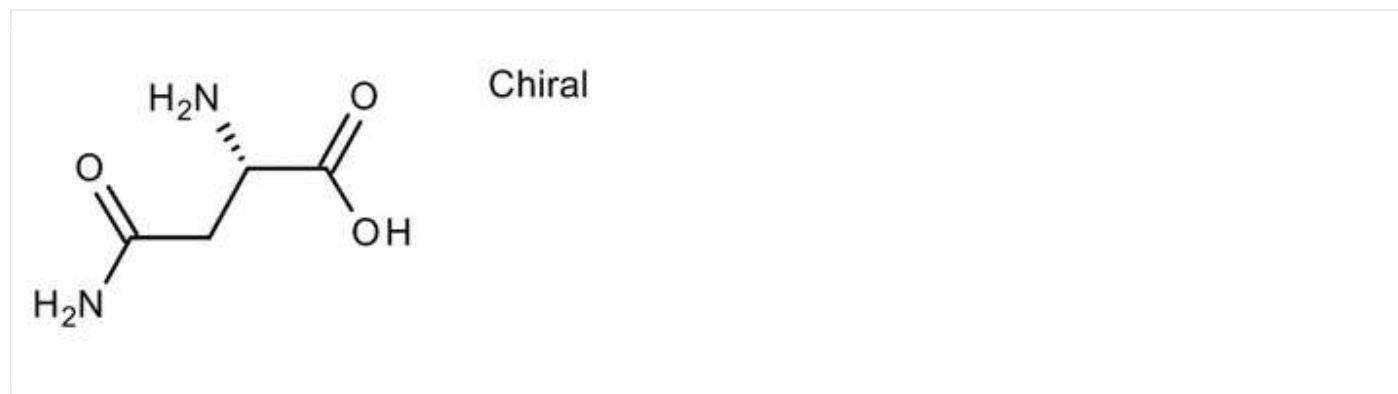
Hazardous Statement: H315-H319

Precaution Statement: P305 + P351 + P338

# L-ASPARGINE MONOHYDRATE 99% FOR BIOCHEMISTRY

(S)-2-Aminosuccinic acid 4-amide, (S)-(+)-2-Aminosuccinamic acid, L-Aspartic acid 4-amide

|                   |                                                                               |                  |                  |
|-------------------|-------------------------------------------------------------------------------|------------------|------------------|
| Product Code.     | 00309                                                                         | Grade            | For Biochemistry |
| Purity            | 99%                                                                           | CAS No.          | 5794-13-8        |
| Molecular Formula | C <sub>4</sub> H <sub>8</sub> N <sub>2</sub> O <sub>3</sub> .H <sub>2</sub> O | Molecular Weight | 150.13           |
| H.S.Code          | 2922.49900                                                                    | Shelf Life       | 60 Months        |



## Physical Properties

|                              |       |                                |                   |                                    |              |
|------------------------------|-------|--------------------------------|-------------------|------------------------------------|--------------|
| Physical state at 20 °C      | Solid | Colour                         | White crystalline | Melting point/ Freezing point [°C] | 233 - 235 °C |
| Density [g/cm <sup>3</sup> ] | 1.6   | Solubility in water [% weight] | Soluble in water  |                                    |              |

## Packaging



## Specification

|                             |                          |
|-----------------------------|--------------------------|
| Appearance                  | White crystalline powder |
| Assay                       | Min 99.0%                |
| Heavy metal (as Pb)         | Max 0.001%               |
| Ammonium (NH <sub>4</sub> ) | Max 0.01%                |

|                                                  |              |
|--------------------------------------------------|--------------|
| Aspartic acid                                    | Max 0.5%     |
| Foreign amino acids                              | Max 0.3%     |
| Other ninhydrin positive substances (as glycine) | Max 0.1%     |
| Water (H2O)                                      | 11.5 - 12.5% |

Safety Information and Hazard Symbols

|  |
|--|
|  |
|--|

# L-ASPARTIC ACID 98.5% FOR BIOCHEMISTRY

Confirms to USP (S)-(+)-Aminosuccinic acid, (S)-Aminobutanedioic acid

|                   |            |                  |                  |
|-------------------|------------|------------------|------------------|
| Product Code.     | 00311      | Grade            | For Biochemistry |
| Purity            | 98.5%      | CAS No.          | 56-84-8          |
| Molecular Formula | C4H7NO4    | Molecular Weight | 133.10           |
| H.S.Code          | 2922.49900 | Shelf Life       | 60 Months        |



## Physical Properties

|                                                       |          |                 |                   |                                |                           |
|-------------------------------------------------------|----------|-----------------|-------------------|--------------------------------|---------------------------|
| Physical state at 20 °C                               | Solid    | Colour          | White crystalline | pH value                       | 2.8                       |
| Melting point/ Freezing point [°C]                    | > 300 °C | Density [g/cm3] | 1.661             | Solubility in water [% weight] | Slightly soluble in water |
| Partition coefficient Log Pow octanol / water at 20°C | -3.9     |                 |                   |                                |                           |

## Packaging



## Specification

|                                                           |                          |
|-----------------------------------------------------------|--------------------------|
| Appearance                                                | White crystalline powder |
| Assay                                                     | 98.5 - 101.5%            |
| Specific optical rotation ([ $\alpha$ ] <sub>20/D</sub> ) | +24 deg to +26 deg       |

|                                 |             |
|---------------------------------|-------------|
| Residue on ignition             | Max 0.1%    |
| Identification                  | Passes test |
| Chloride (Cl)                   | Max 0.02%   |
| Sulphate (SO4)                  | Max 0.03%   |
| Iron (Fe)                       | Max 0.001%  |
| Lead (Pb)                       | Max 0.001%  |
| Loss on dryig (at 105°C; 3 hrs) | Max 0.5%    |

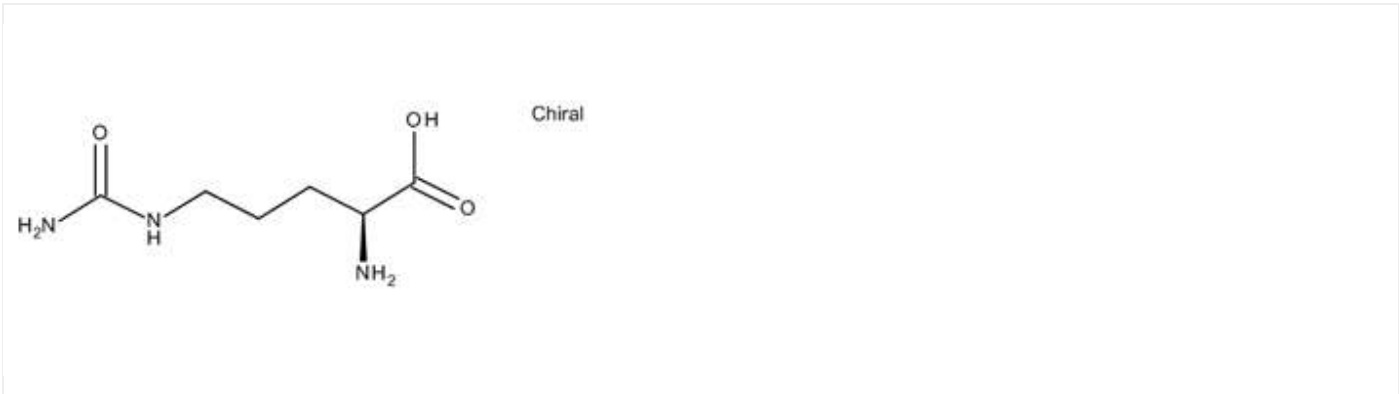
Safety Information and Hazard Symbols

|                                                                                                                |
|----------------------------------------------------------------------------------------------------------------|
|                               |
| Symbol: GHS07<br>Signal Word: Warning<br>Hazardous Statement: H319<br>Precaution Statement: P305 + P351 + P338 |

L-CITRULLINE 99+% FOR BIOCHEMISTRY

(S)-2-Amino-5-ureidopentanoic acid, L-2-Amino-5-ureidovaleric acid

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 00826      | Grade            |           |
| Purity            | 98%        | CAS No.          | 372-75-8  |
| Molecular Formula | C6H13N3O2  | Molecular Weight | 175.19    |
| H.S.Code          | 2924.19000 | Shelf Life       | 60 Months |



Physical Properties

|                         |       |        |                   |       |          |
|-------------------------|-------|--------|-------------------|-------|----------|
| Physical state at 20 °C | Solid | Colour | White crystalline | Odour | Odorless |
|-------------------------|-------|--------|-------------------|-------|----------|

Packaging

|  |
|--|
|  |
|--|

Specification

|                                                                                |                           |
|--------------------------------------------------------------------------------|---------------------------|
| Appearance                                                                     | White to off-white powder |
| Assay (by HClO4 titration)                                                     | Min 98%                   |
| Specific optical rotation ([α] <sub>D</sub> <sup>20</sup> ; 2% in 1 mol/L HCl) | +22.0 to +23.0 deg        |
| Heavy metal (as Pb)                                                            | Max 0.001%                |
| Ammonium (NH4)                                                                 | Max 0.01%                 |
| Foreign amino acids                                                            | Max 0.3%                  |
| Other ninhydrin positive substances (as glycine)                               | Max 0.1%                  |

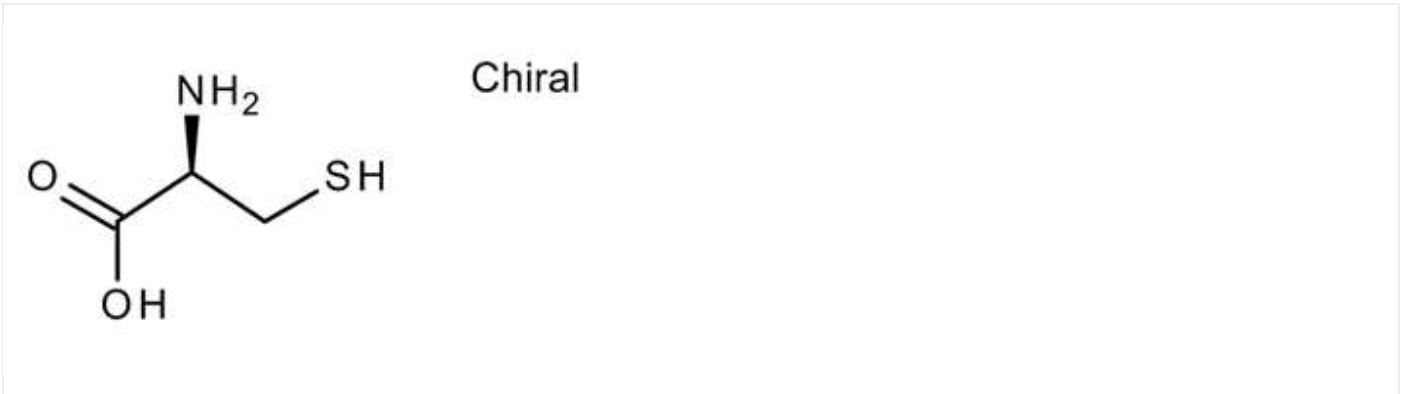
Safety Information and Hazard Symbols

|  |
|--|
|  |
|--|



L-CYSTEINE 99% FOR BIOCHEMISTRY  
(R)-2-Amino-3-mercaptopropionic acid

|                   |            |                  |                  |
|-------------------|------------|------------------|------------------|
| Product Code.     | 00923      | Grade            | For Biochemistry |
| Purity            | 99%        | CAS No.          | 52-90-4          |
| Molecular Formula | C3H7NO2S   | Molecular Weight | 121.16           |
| H.S.Code          | 2930.90400 | Shelf Life       | 60 Months        |



Physical Properties

|                                |                     |        |                       |                                    |        |
|--------------------------------|---------------------|--------|-----------------------|------------------------------------|--------|
| Physical state at 20 °C        | Solid               | Colour | Colorless crystalline | Melting point/ Freezing point [°C] | 220 °C |
| Solubility in water [% weight] | Appreciable (> 10%) |        |                       |                                    |        |

Packaging

|  |
|--|
|  |
|--|

Specification

|                                     |                              |
|-------------------------------------|------------------------------|
| Appearance                          | Colorless crystalline powder |
| Assay                               | Min. 99.0%                   |
| Specific optical rotation ([?]20/D) | +8.0° to +9.0°               |
| UV absorbance                       | Max. 0.5                     |
| Loss on dryig (at 105°C; 4 hrs)     | Max. 0.3%                    |
| Chloride (Cl)                       | Max. 0.002%                  |
| Sulphate (SO4)                      | Max. 0.01%                   |

|                                                  |             |
|--------------------------------------------------|-------------|
| Heavy metal (as Pb)                              | Max. 0.001% |
| Ammonium (NH4)                                   | Max. 0.01%  |
| Foreign amino acids                              | Max. 0.5%   |
| Other ninhydrin positive substances (as glycine) | Max. 0.1%   |

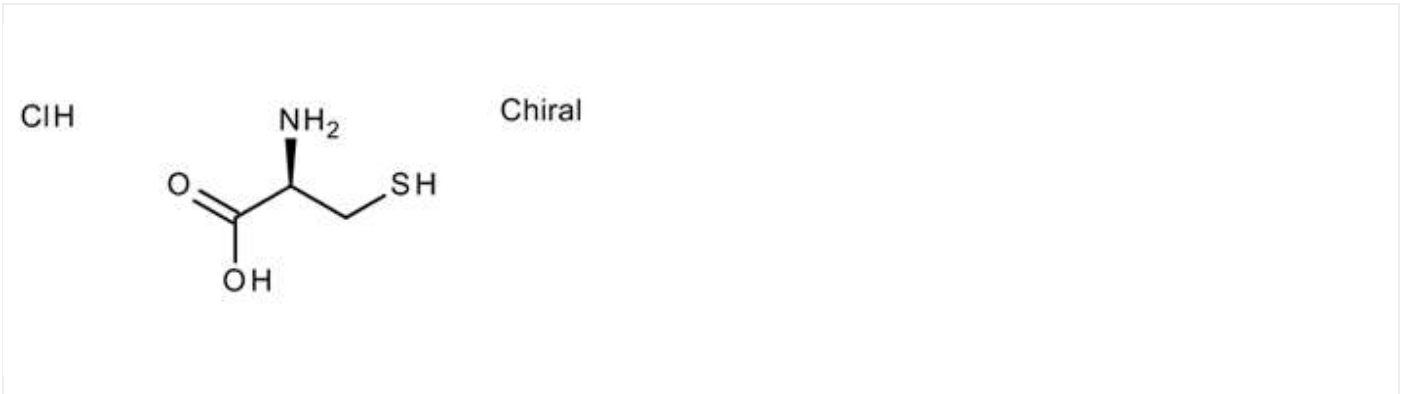
Safety Information and Hazard Symbols

|                                                                                   |
|-----------------------------------------------------------------------------------|
|  |
| Symbol: GHS07<br>Signal Word: Warning<br>Hazardous Statement: H302                |

L-CYSTEINE HYDROCHLORIDE MONOHYDRATE 98.5% FOR BIOCHEMISTRY

Confirms to USP (Stereospecific,irreversible inhibitor of histidene,ammonia-lyase.)

|                   |                |                  |                  |
|-------------------|----------------|------------------|------------------|
| Product Code.     | 00924          | Grade            | For Biochemistry |
| Purity            | 98.5%          | CAS No.          | 7048-04-6        |
| Molecular Formula | C3H8CINO2S.H2O | Molecular Weight | 175.64           |
| H.S.Code          | 2930.90400     | Shelf Life       | 60 Months        |



Physical Properties

|                                    |       |                                |                   |          |       |
|------------------------------------|-------|--------------------------------|-------------------|----------|-------|
| Physical state at 20 °C            | Solid | Colour                         | Colorless crstals | pH value | 1 - 2 |
| Melting point/ Freezing point [°C] | 176°C | Solubility in water [% weight] | 100 g/l at 25 °C  |          |       |

Packaging

|  |
|--|
|  |
|--|

Specification

|                            |                                      |
|----------------------------|--------------------------------------|
| Appearance                 | White crystals or crystalline powder |
| Assay (on anhydrous basis) | 98.5 - 101.5%                        |
| Identity (IR)              | Passes test                          |
| Residue on ignition        | Max. 0.4%                            |
| Sulphate (SO4)             | Max. 0.03%                           |
| Iron (Fe)                  | Max. 0.003%                          |
| Heavy metal (as Pb)        | Max. 0.0015%                         |
| Related compounds          | Passes test                          |

|                                                                |                |
|----------------------------------------------------------------|----------------|
| Individual impurities                                          | Max. 0.5%      |
| Total impurities                                               | Max. 2.0%      |
| Specific optical rotation ( $[\alpha]_{20/D}$ )                | +5.7° to +6.8° |
| Loss on drying (at R.T.; pressure max 5 mm of mercury; 24 hrs) | 8.0 - 12.0%    |

## Safety Information and Hazard Symbols



Symbol: GHS07

Signal Word: Warning

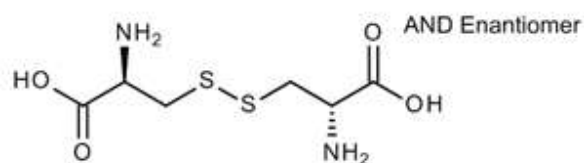
Hazardous Statement: H315-H319-H335

Precaution Statement: P261-P305 + P351 + P338

# L-CYSTINE 98.5% FOR BIOCHEMISTRY

(R,R)-3,3'-Dithiobis(2-aminopropionicacid)

|                   |             |                  |           |
|-------------------|-------------|------------------|-----------|
| Product Code.     | 00925       | Grade            |           |
| Purity            | 98.5%       | CAS No.          | 56-89-3   |
| Molecular Formula | C6H12N2O4S2 | Molecular Weight | 240.30    |
| H.S.Code          | 2930.90400  | Shelf Life       | 60 Months |



## Physical Properties

|                                |                  |        |                       |                                    |          |
|--------------------------------|------------------|--------|-----------------------|------------------------------------|----------|
| Physical state at 20 °C        | Solid            | Colour | Colorless crystalline | Melting point/ Freezing point [°C] | > 240 °C |
| Solubility in water [% weight] | Soluble in water |        |                       |                                    |          |

## Packaging

|  |
|--|
|  |
|--|

## Specification

|                                                                                                      |                           |
|------------------------------------------------------------------------------------------------------|---------------------------|
| Appearance                                                                                           | White to off white powder |
| Assay                                                                                                | 98.5 - 101%               |
| Specific optical rotation ([ $\alpha$ ] <sub>20/D</sub> ; 20 g/L in 1 mol/L HCl; on dried substance) | -218 to -224°             |
| Chloride (Cl)                                                                                        | Max 0.05%                 |
| Sulphate (SO <sub>4</sub> )                                                                          | Max 0.03%                 |
| Ammonium (NH <sub>4</sub> )                                                                          | Max 0.02%                 |
| Ninhydrin positive substance                                                                         | Max 0.2%                  |

|                          |            |
|--------------------------|------------|
| Loss on dryig (at 110°C) | Max 0.5%   |
| Sulphated ash            | Max 0.1%   |
| Iron (Fe)                | Max 0.002% |
| Lead (Pb)                | Max 0.001% |

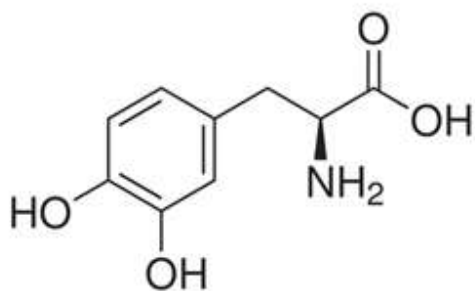
Safety Information and Hazard Symbols

|  |
|--|
|  |
|  |

# L-DOPA 99+% FOR BIOCHEMISTRY

3,4-Dihydroxy-L-phenylalanine ; L-DOPA

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 01012      | Grade            |           |
| Purity            | 99%        | CAS No.          | 59-92-7   |
| Molecular Formula | C9H11NO4   | Molecular Weight | 197.19    |
| H.S.Code          | 2922.29900 | Shelf Life       | 60 Months |



## Physical Properties

|                                |                            |        |              |                                    |              |
|--------------------------------|----------------------------|--------|--------------|------------------------------------|--------------|
| Physical state at 20 °C        | Solid                      | Colour | White powder | Melting point/ Freezing point [°C] | 276 - 278 °C |
| Solubility in water [% weight] | Partially soluble in water |        |              |                                    |              |

## Specification

|                  |                  |
|------------------|------------------|
| Appearance       | White powder     |
| Assay            | Min 99%          |
| Melting range    | 276 - 278 deg C  |
| Optical rotation | -13.5 to -12 deg |

## Safety Information and Hazard Symbols



Symbol: GHS07

Signal Word: Warning

Hazardous Statement: H302-H315-H319-H335

Precaution Statement: P261-P305 + P351 + P338

# L-GLUTAMIC ACID 99% FOR BACTERIOLOGY & TISSUE CULTURE

Pyrogen free, for bacteriology and tissue culture. (S)-2-Aminopentanedioic acid; Glu

|                   |            |                  |                  |
|-------------------|------------|------------------|------------------|
| Product Code.     | 01284      | Grade            | for biochemistry |
| Purity            | 99%        | CAS No.          | 58-86-0          |
| Molecular Formula | C5H9NO4    | Molecular Weight | 147.13           |
| H.S.Code          | 2922.42100 | Shelf Life       | 60 Months        |

## Physical Properties

|                                    |                           |                    |              |                 |          |
|------------------------------------|---------------------------|--------------------|--------------|-----------------|----------|
| Physical state at 20 °C            | Solid                     | Colour             | White powder | Odour           | Odorless |
| Melting point/ Freezing point [°C] | 205 °C                    | Boiling point [°C] | 247°C        | Density [g/cm3] | 1.538    |
| Solubility in water [% weight]     | Slightly soluble in water |                    |              |                 |          |

## Packaging

|  |
|--|
|  |
|--|

## Specification

|                                                                                                         |                    |
|---------------------------------------------------------------------------------------------------------|--------------------|
| Appearance                                                                                              | A white powder     |
| Assay (acidimetric)                                                                                     | Min 99%            |
| Specific optical rotation ([α] <sub>D</sub> <sup>20</sup> ; 100 g/L in 1 mol/L HCl; on dried substance) | +30.5 to +32.5 deg |
| Chloride (Cl)                                                                                           | Max 0.02%          |
| Sulphate (SO <sub>4</sub> )                                                                             | Max 0.03%          |
| Heavy metal (as Pb)                                                                                     | Max 0.001%         |
| Iron (Fe)                                                                                               | Max 0.001%         |
| Ammonium (NH <sub>4</sub> )                                                                             | Max 0.02%          |
| Ninhydrin positive substance (TLC)                                                                      | Max 0.5%           |
| Sulphated ash (at 600°C)                                                                                | Max 0.1%           |
| Loss on drying (at 105°C)                                                                               | Max 0.5%           |

## Safety Information and Hazard Symbols

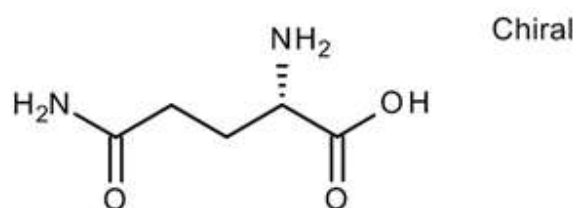
|  |
|--|
|  |
|--|



## L-GLUTAMINE 99% FOR BIOCHEMISTRY

Pyrogen free for bacteriology and tissue culture. Used as a substrate in determination of glutamyl transferase. S)-2,5-Diamino-5-oxopentanoic acid, L-Glutamic acid 5-amide

|                   |            |                  |                  |
|-------------------|------------|------------------|------------------|
| Product Code.     | 01285      | Grade            | For Biochemistry |
| Purity            | 99%        | CAS No.          | 56-85-9          |
| Molecular Formula | C5H10N2O3  | Molecular Weight | 146.15           |
| H.S.Code          | 2924.19000 | Shelf Life       | 60 Months        |



## Physical Properties

|                                                       |                            |                                    |              |                                |                                        |
|-------------------------------------------------------|----------------------------|------------------------------------|--------------|--------------------------------|----------------------------------------|
| Physical state at 20 °C                               | Solid                      | Colour                             | White powder | Odour                          | Odorless                               |
| pH value                                              | 5 - 6 at 14.6 g/l at 25 °C | Melting point/ Freezing point [°C] | 185 °C       | Solubility in water [% weight] | 14.6 g/l at 20 °C - completely soluble |
| Partition coefficient Log Pow octanol / water at 20°C | -4.069                     |                                    |              |                                |                                        |

## Packaging



## Specification

|                            |                |
|----------------------------|----------------|
| Appearance                 | A white powder |
| Assay (by HClO4 titration) | Min 99%        |

|                                                  |                    |
|--------------------------------------------------|--------------------|
| Specific optical rotation ( $[\alpha]_{20/D}$ )  | +32.3 to +33.3 deg |
| Heavy metal (as Pb)                              | Max 0.001%         |
| Ammonium (NH <sub>4</sub> )                      | Max 0.1%           |
| Foreign amino acids                              | Max 0.3%           |
| Other ninhydrin positive substances (as glycine) | Max 0.1%           |

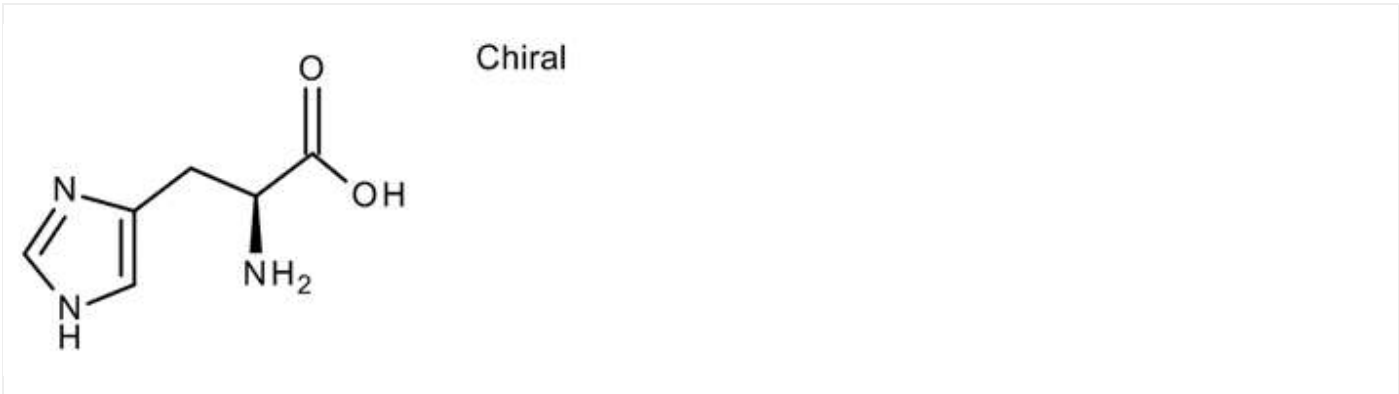
Safety Information and Hazard Symbols

|  |
|--|
|  |
|--|

# L-HISTIDINE 99% FOR BIOCHEMISTRY

(S)-2-Amino-3-(4-imidazolyl)propionic acid

|                   |            |                  |                  |
|-------------------|------------|------------------|------------------|
| Product Code.     | 01360      | Grade            | For Biochemistry |
| Purity            | 99%        | CAS No.          | 71-00-1          |
| Molecular Formula | C6H9N3O2   | Molecular Weight | 155.16           |
| H.S.Code          | 2933.29900 | Shelf Life       | 60 Months        |



## Physical Properties

|                                    |        |                                |                                        |          |                            |
|------------------------------------|--------|--------------------------------|----------------------------------------|----------|----------------------------|
| Physical state at 20 °C            | Solid  | Colour                         | White powder                           | pH value | 7 - 8 at 15.5 g/l at 25 °C |
| Melting point/ Freezing point [°C] | 282 °C | Solubility in water [% weight] | 15.5 g/l at 20 °C - completely soluble |          |                            |

## Packaging

|  |
|--|
|  |
|--|

## Specification

|                                        |                           |
|----------------------------------------|---------------------------|
| Appearance                             | White to off-white powder |
| Assay (by HClO <sub>4</sub> titration) | Min 99.0%                 |
| Heavy metal (as Pb)                    | Max 0.001%                |
| Ammonium (NH <sub>4</sub> )            | Max 0.01%                 |
| Foreign amino acids                    | Max 0.3%                  |

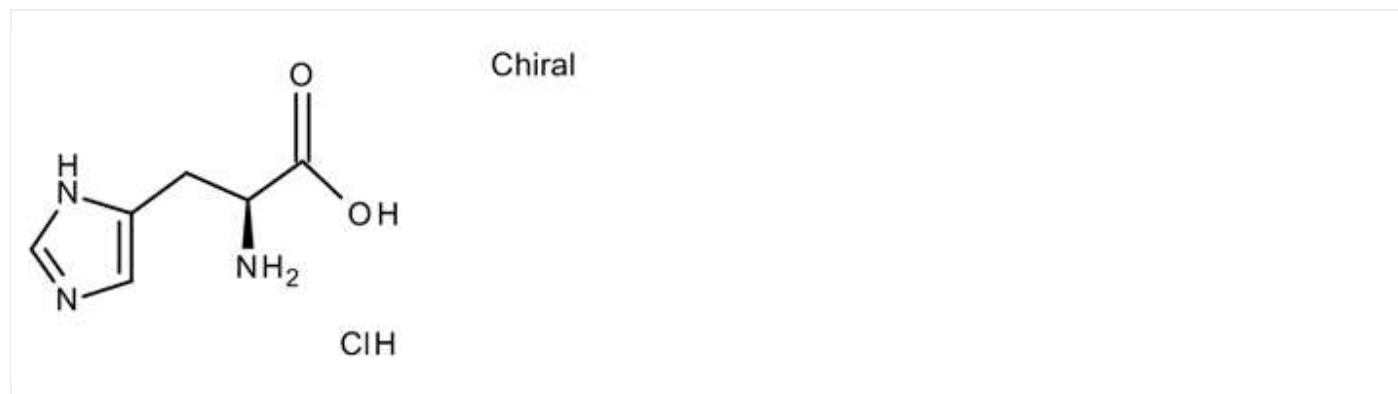
## Safety Information and Hazard Symbols

|  |
|--|
|  |
|--|

# L-HISTIDINE HYDROCHLORIDE MONOHYDRATE 99% FOR BIOCHEMISTRY

## L-a-Amino-β-(4-imidazolyl)propionic acid monohydrochloride

|                   |                 |                  |           |
|-------------------|-----------------|------------------|-----------|
| Product Code.     | 01361           | Grade            |           |
| Purity            | 99%             | CAS No.          | 5934-29-2 |
| Molecular Formula | C6H10ClN3O2.H2O | Molecular Weight | 209.63    |
| H.S.Code          | 2933.29900      | Shelf Life       | 60 Months |



### Physical Properties

|                                    |        |                                |                                       |          |                           |
|------------------------------------|--------|--------------------------------|---------------------------------------|----------|---------------------------|
| Physical state at 20 °C            | Solid  | Colour                         | White crystalline                     | pH value | 3 - 4 at 105 g/l at 25 °C |
| Melting point/ Freezing point [°C] | 254 °C | Solubility in water [% weight] | 105 g/l at 20 °C - completely soluble |          |                           |

### Packaging

|  |
|--|
|  |
|--|

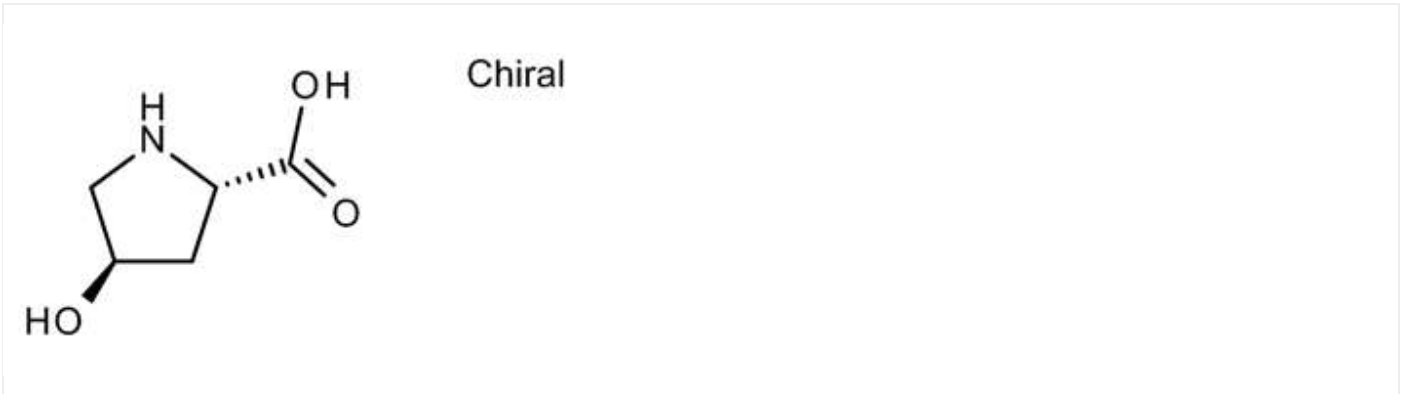
### Specification

|                                                  |                          |
|--------------------------------------------------|--------------------------|
| Appearance                                       | White crystalline powder |
| Assay (argentometric; on anhydrous basis)        | Min 99%                  |
| Specific optical rotation ([α] <sub>20/D</sub> ) | +8.5 to +9.5 deg         |
| Heavy metal (as Pb)                              | Max 0.001%               |
| Ammonium (NH <sub>4</sub> )                      | Max 0.01%                |
| Foreign amino acids                              | Max 0.3%                 |
| Other ninhydrin positive substances (as glycine) | Max 0.1%                 |

# L-HYDROXYPROLINE 99% FOR SYNTHESIS

4-Hydroxypyrrolidin-2-carbons ure

|                   |            |                  |                  |
|-------------------|------------|------------------|------------------|
| Product Code.     | 01419      | Grade            | for biochemistry |
| Purity            | 99%        | CAS No.          | 51-35-4          |
| Molecular Formula | C5H9NO3    | Molecular Weight | 131.13           |
| H.S.Code          | 2933.99000 | Shelf Life       | 60 Months        |



## Physical Properties

|                                    |        |                |              |                                |                  |
|------------------------------------|--------|----------------|--------------|--------------------------------|------------------|
| Physical state at 20 °C            | Solid  | Colour         | White powder | Odour                          | Odorless         |
| Melting point/ Freezing point [°C] | 273 °C | Vapour density | 4.5          | Solubility in water [% weight] | Soluble in water |

## Packaging

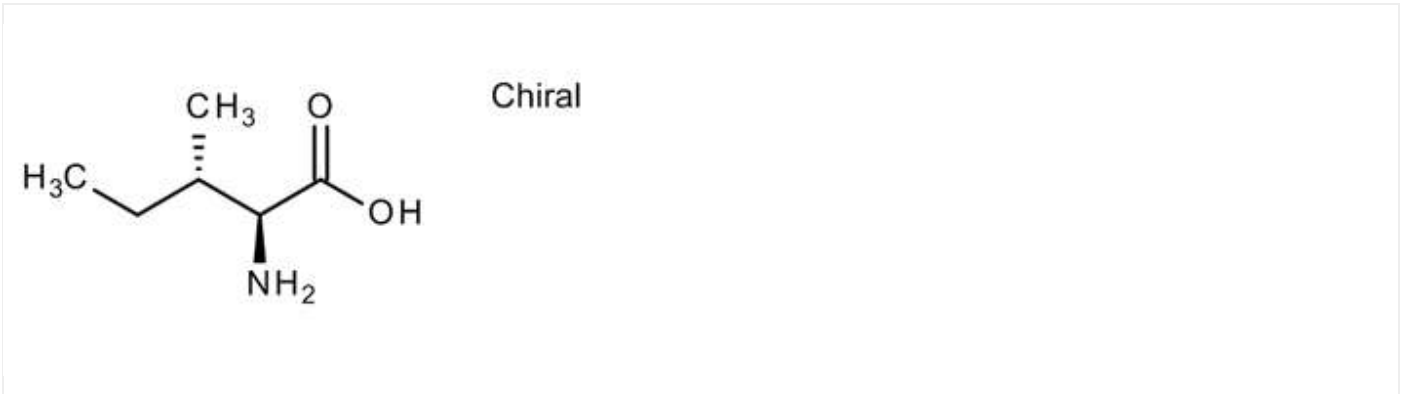
## Specification

|            |                          |
|------------|--------------------------|
| Appearance | White crystalline powder |
| Assay      | Min 99.0%                |

## Safety Information and Hazard Symbols

L-ISOLEUCINE 99% FOR BIOCHEMISTRY  
(2S,3S)-2-Amino-3-methylpentanoic acid

|                   |            |                  |                  |
|-------------------|------------|------------------|------------------|
| Product Code.     | 01538      | Grade            | For Biochemistry |
| Purity            | 99%        | CAS No.          | 73-32-5          |
| Molecular Formula | C6H13NO2   | Molecular Weight | 131.18           |
| H.S.Code          | 2922.49900 | Shelf Life       | 60 Months        |



Physical Properties

|                                    |        |                                |                            |       |          |
|------------------------------------|--------|--------------------------------|----------------------------|-------|----------|
| Physical state at 20 °C            | Solid  | Colour                         | White powder               | Odour | Odorless |
| Melting point/ Freezing point [°C] | 288 °C | Solubility in water [% weight] | Partially soluble in water |       |          |

Packaging

Specification

|                                                                                             |                    |
|---------------------------------------------------------------------------------------------|--------------------|
| Appearance                                                                                  | White powder       |
| Assay (by HClO4 titration)                                                                  | Min 99%            |
| Specific optical rotation ([α] <sub>20</sub> /D; 40 g/L in 250 g/L HCl; on dried substance) | +40 to +43 deg     |
| Specific optical rotation ([α] <sub>25</sub> /D; 40 g/L in 6M HCl; on dried substance)      | +38.9 to +41.8 deg |
| pH (1% solution in CO2 free water)                                                          | 5.5 - 7.0          |
| Chloride (Cl)                                                                               | Max 0.02%          |
| Sulphate (SO4)                                                                              | Max 0.03%          |

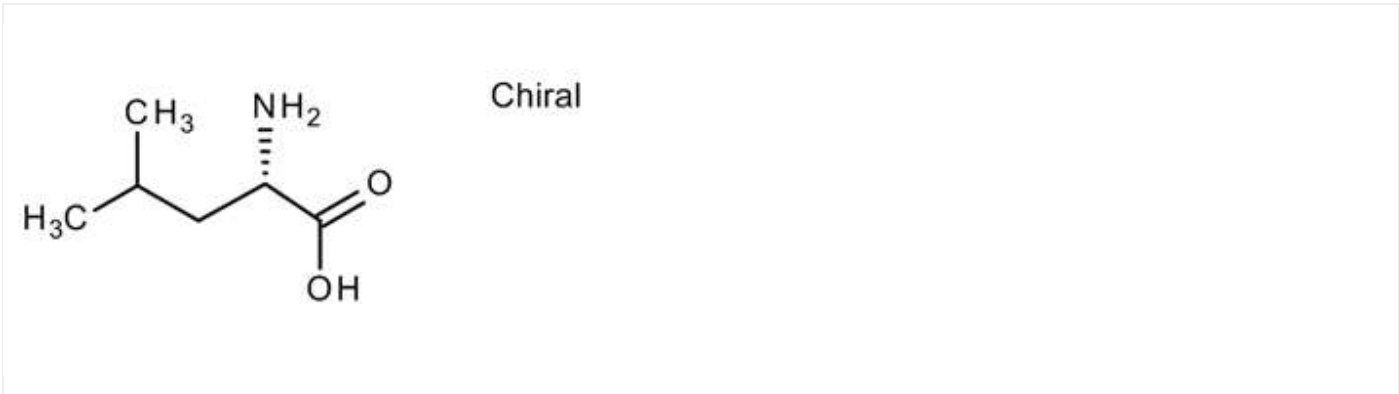
|                                                  |            |
|--------------------------------------------------|------------|
| Iron (Fe)                                        | Max 0.001% |
| Heavy metal (as Pb)                              | Max 0.001% |
| Ammonium (NH4)                                   | Max 0.02%  |
| Foreign amino acids                              | Max 0.5%   |
| Other ninhydrin positive substances (as glycine) | Max 0.1%   |

Safety Information and Hazard Symbols

|  |
|--|
|  |
|--|

L-LEUCINE 99+% FOR BIOCHEMISTRY  
(S)-2-Amino-4-methylpentanoic acid

|                   |            |                  |                  |
|-------------------|------------|------------------|------------------|
| Product Code.     | 01538A     | Grade            | For Biochemistry |
| Purity            | 99%        | CAS No.          | 61-90-5          |
| Molecular Formula | C6H13NO2   | Molecular Weight | 131.18           |
| H.S.Code          | 2922.49900 | Shelf Life       | 60 Months        |



Physical Properties

|                         |       |                                |                      |                                    |          |
|-------------------------|-------|--------------------------------|----------------------|------------------------------------|----------|
| Physical state at 20 °C | Solid | Colour                         | White shining powder | Melting point/ Freezing point [°C] | > 300 °C |
| Density [g/cm3]         | 1.293 | Solubility in water [% weight] | Soluble in water     |                                    |          |

Packaging

Specification

|                                                                                                 |                          |
|-------------------------------------------------------------------------------------------------|--------------------------|
| Appearance                                                                                      | White crystalline powder |
| Assay (by HClO4 titration)                                                                      | Min 99.0%                |
| Specific optical rotation ([α] <sub>D</sub> <sup>20</sup> ; c=4 in 6 M HCl; on dried substance) | +14.9 to +16.50 °        |
| pH (1% solution)                                                                                | 5.5 - 7.0                |
| Appearance of solution                                                                          | Passes test              |
| Insoluble matter in HCl 1 mol/L                                                                 | Passes test              |
| Loss on drying (at 105°C)                                                                       | Max 0.2%                 |



|                                                  |            |
|--------------------------------------------------|------------|
| Residue on ignition (as SO4)                     | Max 0.1%   |
| Chloride (Cl)                                    | Max 0.02%  |
| Sulphate (SO4)                                   | Max 0.03%  |
| Iron (Fe)                                        | Max 0.001% |
| Heavy metal (as Pb)                              | Max 0.001% |
| Ammonium (NH4)                                   | Max 0.02%  |
| Foreign amino acids                              | Max 0.3%   |
| Other ninhydrin positive substances (as glycine) | Max 0.1%   |

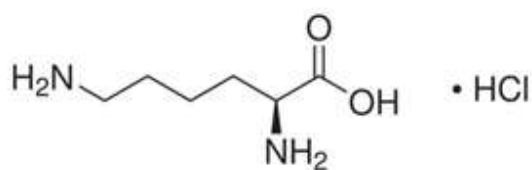
Safety Information and Hazard Symbols

|  |
|--|
|  |
|--|

# L-LYSINE MONOHYDROCHLORIDE 98.5% FOR SYNTHESIS

Confirms to USP (S)-2,6-Diaminohexanoic acid monohydrochloride

|                   |                                                                |                  |                  |
|-------------------|----------------------------------------------------------------|------------------|------------------|
| Product Code.     | 01576                                                          | Grade            | for biochemistry |
| Purity            | 98.5%                                                          | CAS No.          | 657-27-2         |
| Molecular Formula | C <sub>6</sub> H <sub>15</sub> ClN <sub>2</sub> O <sub>2</sub> | Molecular Weight | 182.65           |
| H.S.Code          | 2922.41000                                                     | Shelf Life       | 60 Months        |



## Physical Properties

|                                    |        |                          |                   |                                |                            |
|------------------------------------|--------|--------------------------|-------------------|--------------------------------|----------------------------|
| Physical state at 20 °C            | Solid  | Colour                   | White crystalline | pH value                       | 5 - 6 at 91,3 g/l at 25 °C |
| Melting point/ Freezing point [°C] | 263 °C | Decomposition point [°C] | 240 °C            | Solubility in water [% weight] | Soluble in water           |

## Packaging

|  |
|--|
|  |
|--|

## Specification

|                                                                                             |                          |
|---------------------------------------------------------------------------------------------|--------------------------|
| Appearance                                                                                  | White crystalline powder |
| Assay (by HClO <sub>4</sub> titration; on anhydrous basis)                                  | 98.5 - 101%              |
| Identification                                                                              | To comply USP test       |
| Chloride content                                                                            | 19.0 -19.6%              |
| Specific optical rotation ([α] <sub>D</sub> <sup>20</sup> ; c=8 in HCl; on dried substance) | +20.4 to +21.4°          |
| Loss on dryig (at 105°C; 3 hrs)                                                             | Max 0.4%                 |
| Residue on ignition                                                                         | Max 0.1%                 |

|                                  |                         |
|----------------------------------|-------------------------|
| Iron (Fe)                        | Max 0.003%              |
| Heavy metal (as Pb)              | Max 0.0015%             |
| Sulphate (SO4)                   | Max 0.03%               |
| Chromatographic purity (by HPLC) | To comply USP test      |
| Residual solvents                | To meet the requirement |

Safety Information and Hazard Symbols

|  |
|--|
|  |
|--|

L-METHIONINE 99% FOR BIOCHEMISTRY

(S)-2-Amino-4-(methylmercapto)butyric acid; L-2-Amino-4-(methylthio)butanoic acid

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 01698      | Grade            |           |
| Purity            | 98%        | CAS No.          | 63-68-3   |
| Molecular Formula | C5H11NO2S  | Molecular Weight | 149.21    |
| H.S.Code          | 2930.40000 | Shelf Life       | 60 Months |



Physical Properties

|                         |           |                                    |                 |                          |              |
|-------------------------|-----------|------------------------------------|-----------------|--------------------------|--------------|
| Physical state at 20 °C | Solid     | Colour                             | White powder    | Odour                    | Slight odour |
| pH value                | 5.6 - 6.1 | Melting point/ Freezing point [°C] | 284°C           | Decomposition point [°C] | 276°C        |
| Flash point [°C]        | 284°C     | Solubility in water [% weight]     | 56.6 g/L @ 25°C |                          |              |

Packaging

Specification

|                                                             |                   |
|-------------------------------------------------------------|-------------------|
| Appearance                                                  | White powder      |
| Assay (by HClO4 titration)                                  | Min 99%           |
| Specific optical rotation ([α] <sub>D</sub> <sup>20</sup> ) | +22.5 to + 24 deg |
| pH (2.5% solution)                                          | 5.5 - 6.5         |
| Loss on drying (at 105°C)                                   | Max 0.3%          |
| Residue on ignition (as SO4)                                | Max 0.1%          |
| Chloride (Cl)                                               | Max 0.02%         |

|                                                  |            |
|--------------------------------------------------|------------|
| Sulphate (SO4)                                   | Max 0.03%  |
| Iron (Fe)                                        | Max 0.001% |
| Heavy metal (as Pb)                              | Max 0.001% |
| Ammonium (NH4)                                   | Max 0.01%  |
| Foreign amino acids                              | Max 0.3%   |
| Other ninhydrin positive substances (as glycine) | Max 0.1%   |

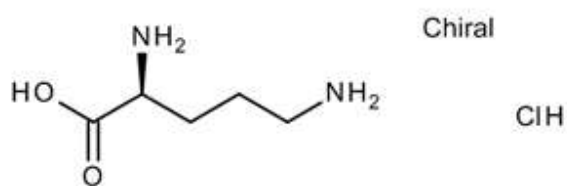
Safety Information and Hazard Symbols

|  |
|--|
|  |
|--|

# L-ORNITHINE MONOHYDROCHLORIDE 99% FOR BIOCHEMISTRY

(S)-2,5-Diaminopentanoic acid monohydrochloride

|                   |             |                  |                  |
|-------------------|-------------|------------------|------------------|
| Product Code.     | 01897       | Grade            | For Biochemistry |
| Purity            | 99%         | CAS No.          | 3184-13-2        |
| Molecular Formula | C5H13ClN2O2 | Molecular Weight | 168.62           |
| H.S.Code          | 2922.49900  | Shelf Life       | 60 Months        |



## Physical Properties

|                                    |        |                          |              |                                |                  |
|------------------------------------|--------|--------------------------|--------------|--------------------------------|------------------|
| Physical state at 20 °C            | Solid  | Colour                   | White powder | Odour                          | Odorless         |
| Melting point/ Freezing point [°C] | 245 °C | Decomposition point [°C] | 233 °C       | Solubility in water [% weight] | Soluble in water |

## Specification

|                                                                                    |                                            |
|------------------------------------------------------------------------------------|--------------------------------------------|
| Appearance                                                                         | White powder                               |
| Assay                                                                              | Min 99.0%                                  |
| Solubility (0.05% in water)                                                        | A clear colorless to faint yellow solution |
| Specific optical rotation ([ $\alpha$ ] <sub>D</sub> <sup>20</sup> ; c= 2; 5M HCl) | 21.8 - 23.2 °                              |

## Safety Information and Hazard Symbols

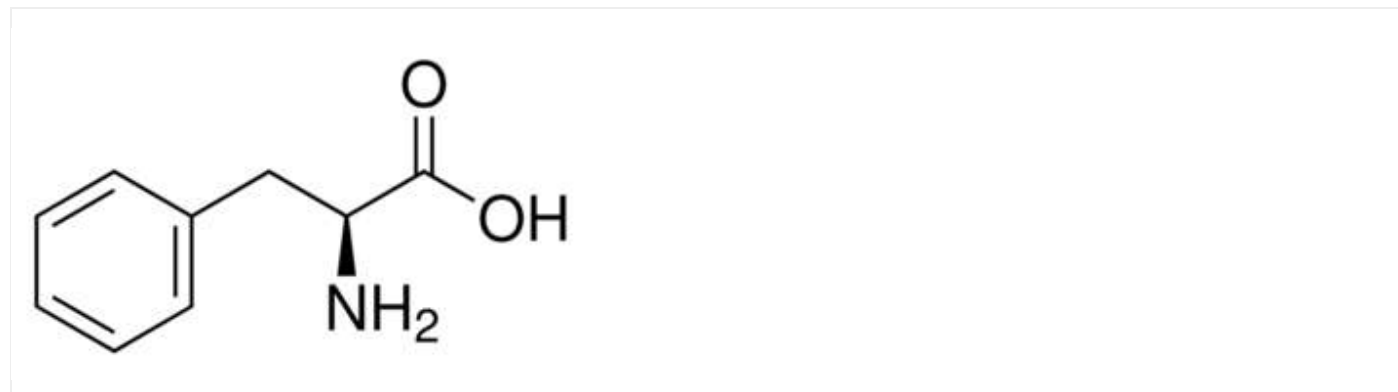


Symbol: GHS07  
Signal Word: Warning  
Hazardous Statement: H319  
Precaution Statement: P305 + P351 + P338

# L-PHENYLALANINE 99% FOR BIOCHEMISTRY

(S)-2-Amino-3-phenylpropionic acid

|                   |                                                |                  |                  |
|-------------------|------------------------------------------------|------------------|------------------|
| Product Code.     | 01983                                          | Grade            | For Biochemistry |
| Purity            | 98%                                            | CAS No.          | 63-91-2          |
| Molecular Formula | C <sub>9</sub> H <sub>11</sub> NO <sub>2</sub> | Molecular Weight | 165.19           |
| H.S.Code          | 2922.49900                                     | Shelf Life       | 60 Months        |



## Physical Properties

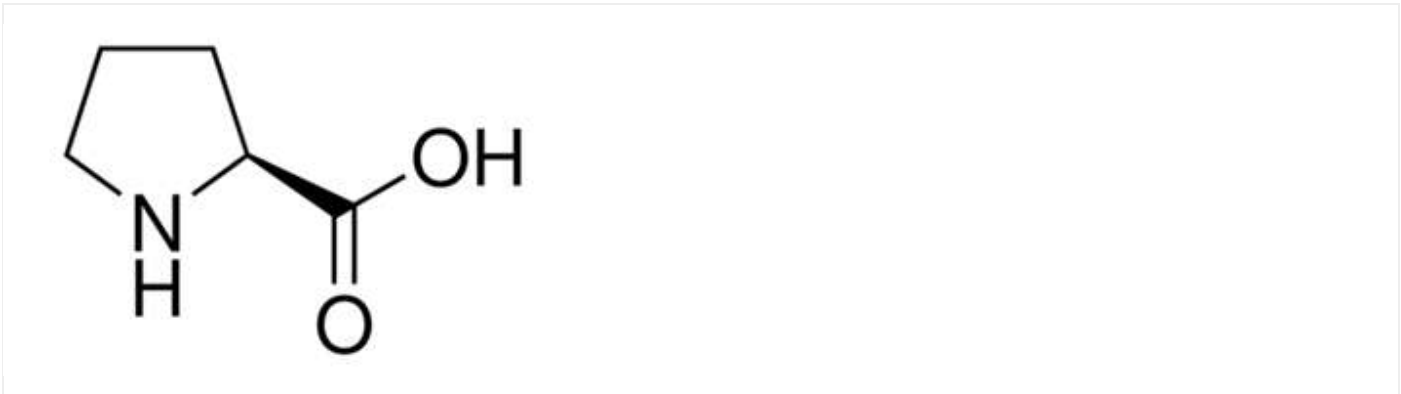
|                                |                                        |                                    |                   |                              |          |
|--------------------------------|----------------------------------------|------------------------------------|-------------------|------------------------------|----------|
| Physical state at 20 °C        | Solid                                  | Colour                             | White crystalline | Odour                        | Odorless |
| pH value                       | 5 - 7 at 16.5 g/l at 25 °C             | Melting point/ Freezing point [°C] | 270 - 275 °C      | Density [g/cm <sup>3</sup> ] | 1.29     |
| Solubility in water [% weight] | 16.5 g/l at 20 °C - completely soluble |                                    |                   |                              |          |

## Specification

|                                                                                                            |                                          |
|------------------------------------------------------------------------------------------------------------|------------------------------------------|
| Appearance                                                                                                 | White or almost white crystalline powder |
| Assay (by HClO <sub>4</sub> titration)                                                                     | Min 99%                                  |
| Specific optical rotation ([α] <sub>D</sub> <sup>20</sup> ; 20 g/L; water; calculated on dried substances) | -33.0° to -34.7°                         |
| Heavy metal (as Pb)                                                                                        | Max 0.001%                               |
| Ammonium (NH <sub>4</sub> )                                                                                | Max 0.01%                                |
| Foreign amino acids                                                                                        | Max 0.3%                                 |
| Other ninhydrin positive substances (as glycine)                                                           | Max 0.1%                                 |

L-PROLINE 99% FOR BIOCHEMISTRY  
(S)-Pyrrolidine-2-carboxylic acid

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 02191      | Grade            |           |
| Purity            | 99%        | CAS No.          | 147-85-3  |
| Molecular Formula | C5H9NO2    | Molecular Weight | 115.13    |
| H.S.Code          | 2933.99000 | Shelf Life       | 60 Months |



Physical Properties

|                                    |        |                          |                   |                                |                                       |
|------------------------------------|--------|--------------------------|-------------------|--------------------------------|---------------------------------------|
| Physical state at 20 °C            | Solid  | Colour                   | White crystalline | pH value                       | 6 - 7 at 115 g/l at 25 °C             |
| Melting point/ Freezing point [°C] | 228 °C | Decomposition point [°C] | 233 °C            | Solubility in water [% weight] | 115 g/l at 20 °C - completely soluble |

Packaging

|  |
|--|
|  |
|--|

Specification

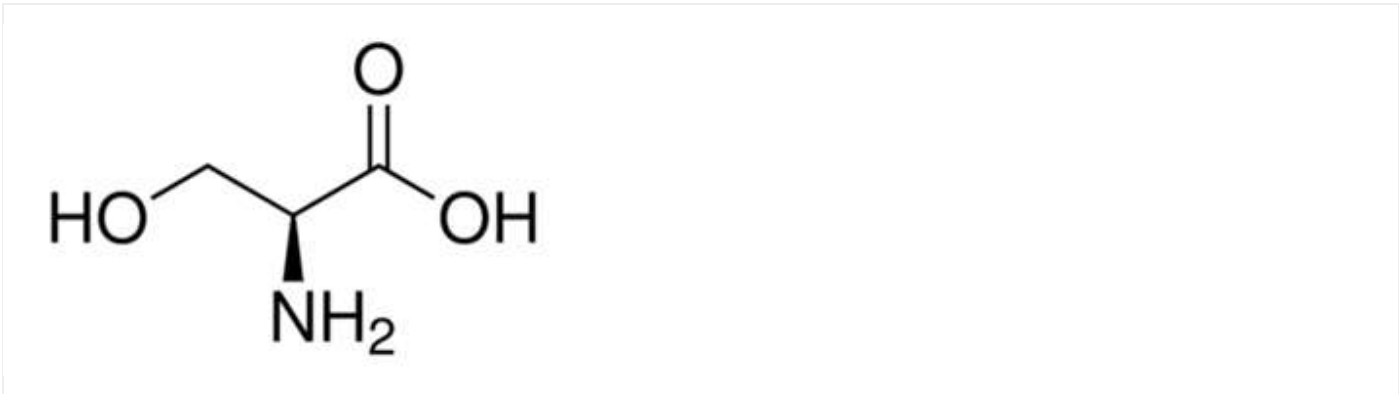
|                                                  |                          |
|--------------------------------------------------|--------------------------|
| Appearance                                       | White crystalline powder |
| Assay (by HClO4 titration)                       | Min 99%                  |
| Heavy metal (as Pb)                              | Max 0.001%               |
| Ammonium (NH4)                                   | Max 0.01%                |
| Foreign amino acids                              | Max 0.3%                 |
| Other ninhydrin positive substances (as glycine) | Max 0.1%                 |



L-SERINE 99%

(S)-2-Amino-3-hydroxypropionic acid

|                   |            |                  |                  |
|-------------------|------------|------------------|------------------|
| Product Code.     | 02295      | Grade            | For Biochemistry |
| Purity            | 99%        | CAS No.          | 56-45-1          |
| Molecular Formula | C3H7NO3    | Molecular Weight | 105.09           |
| H.S.Code          | 2922.50900 | Shelf Life       | 60 Months        |



Physical Properties

|                                    |        |                 |                   |                                |                  |
|------------------------------------|--------|-----------------|-------------------|--------------------------------|------------------|
| Physical state at 20 °C            | Solid  | Colour          | White crystalline | Odour                          | Odorless         |
| Melting point/ Freezing point [°C] | 222 °C | Density [g/cm3] | 1.537             | Solubility in water [% weight] | Soluble in water |

Packaging

|  |
|--|
|  |
|--|

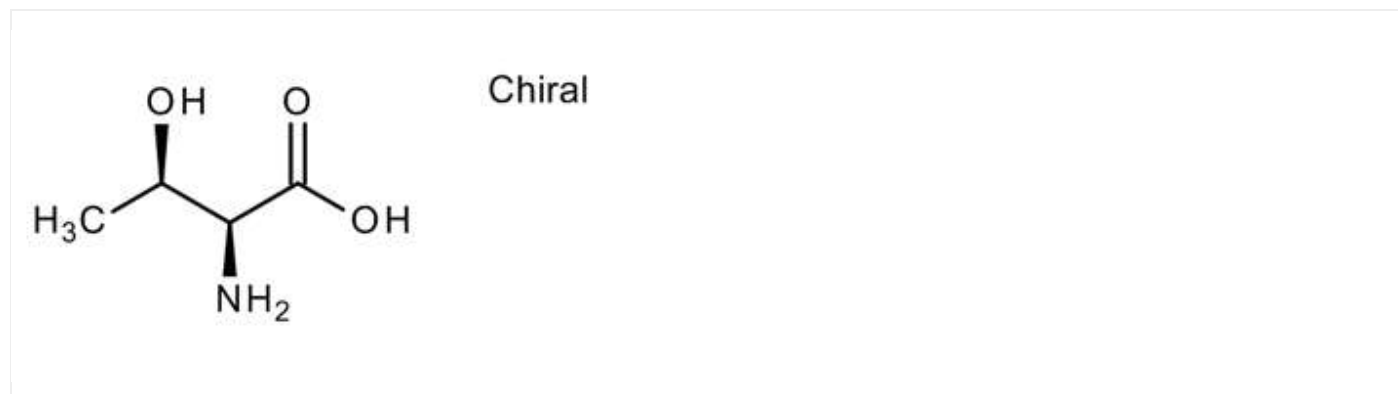
Specification

|                                                    |                          |
|----------------------------------------------------|--------------------------|
| Appearance                                         | White crystalline powder |
| Assay                                              | Min 99%                  |
| Specific optical rotation ([?]20/D; c=10; 2 M HCl) | +14° to +16°             |
| Sulphated ash                                      | Max 0.1%                 |
| Iron (Fe)                                          | Max 0.001%               |
| Heavy metal (as Pb)                                | Max 0.001%               |
| Loss on drying (at 105°C)                          | Max 0.5%                 |

# L-THREONINE 99% FOR BIOCHEMISTRY

Allo-free pyrogen free for bacteriology and tissue culture. (2S,3R)-2-Amino-3-hydroxybutyric acid

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 02693      | Grade            |           |
| Purity            | 99%        | CAS No.          | 72-19-5   |
| Molecular Formula | C4H9NO3    | Molecular Weight | 119.12    |
| H.S.Code          | 2922.50900 | Shelf Life       | 60 Months |



## Physical Properties

|                                    |        |                                |                                      |          |                          |
|------------------------------------|--------|--------------------------------|--------------------------------------|----------|--------------------------|
| Physical state at 20 °C            | Solid  | Colour                         | White crystalline                    | pH value | 5 - 6 at 60 g/l at 25 °C |
| Melting point/ Freezing point [°C] | 256 °C | Solubility in water [% weight] | 60 g/l at 20 °C - completely soluble |          |                          |

## Packaging

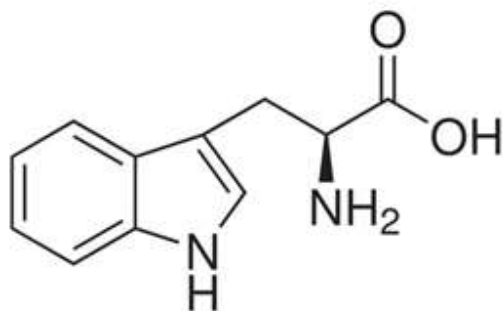
## Specification

|                                                  |                          |
|--------------------------------------------------|--------------------------|
| Appearance                                       | White crystalline powder |
| Assay (by HClO <sub>4</sub> titration)           | Min 99%                  |
| Heavy metal (as Pb)                              | Max 0.001%               |
| Ammonium (NH <sub>4</sub> )                      | Max 0.01%                |
| Foreign amino acids                              | Max 0.3%                 |
| Other ninhydrin positive substances (as glycine) | Max 0.1%                 |

## L-TRYPTOPHAN 99% FOR BIOCHEMISTRY

Used as a substrate in determination of tryptophanase. (S)-2-Amino-3-(3-indolyl)propionic acid; L-a-Amino-3-indolepropionic acid

|                   |                                                               |                  |                  |
|-------------------|---------------------------------------------------------------|------------------|------------------|
| Product Code.     | 02793                                                         | Grade            | For Biochemistry |
| Purity            | 99%                                                           | CAS No.          | 73-22-3          |
| Molecular Formula | C <sub>11</sub> H <sub>12</sub> N <sub>2</sub> O <sub>2</sub> | Molecular Weight | 204.23           |
| H.S.Code          | 2933.99000                                                    | Shelf Life       | 60 Months        |



### Physical Properties

|                         |           |                                    |                   |                                |                            |
|-------------------------|-----------|------------------------------------|-------------------|--------------------------------|----------------------------|
| Physical state at 20 °C | Solid     | Colour                             | White crystalline | Odour                          | Odorless                   |
| pH value                | 5.5 - 7.0 | Melting point/ Freezing point [°C] | 280 - 285 °C      | Solubility in water [% weight] | Partially soluble in water |

### Packaging

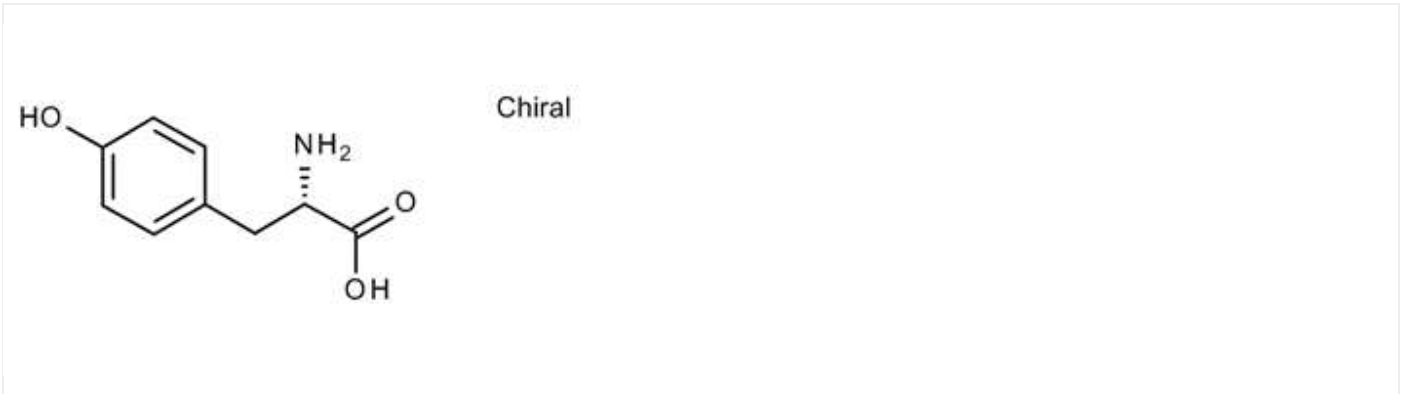
### Specification

|                                                  |                          |
|--------------------------------------------------|--------------------------|
| Appearance                                       | White crystalline powder |
| Assay (by HClO <sub>4</sub> titration)           | Min 99%                  |
| Heavy metal (as Pb)                              | Max 0.001%               |
| Ammonium (NH <sub>4</sub> )                      | Max 0.01%                |
| Foreign amino acids                              | Max 0.3%                 |
| Other ninhydrin positive substances (as glycine) | Max 0.1%                 |

# L-TYROSINE 99% FOR BIOCHEMISTRY

L-3-(4-Hydroxyphenyl) alanine disodium salt hydrate

|                   |            |                  |                  |
|-------------------|------------|------------------|------------------|
| Product Code.     | 02803      | Grade            | For Biochemistry |
| Purity            | 99%        | CAS No.          | 60-18-4          |
| Molecular Formula | C9H11NO3   | Molecular Weight | 181.19           |
| H.S.Code          | 2922.50150 | Shelf Life       | 60 Months        |



## Physical Properties

|                                    |                    |                                                       |                   |                 |          |
|------------------------------------|--------------------|-------------------------------------------------------|-------------------|-----------------|----------|
| Physical state at 20 °C            | Solid              | Colour                                                | White crystalline | Odour           | Odorless |
| Melting point/ Freezing point [°C] | 343 °C             | Flash point [°C]                                      | 176°C             | Density [g/cm3] | 1.456    |
| Solubility in water [% weight]     | 0.479 g/l at 25 °C | Partition coefficient Log Pow octanol / water at 20°C | -2.26             |                 |          |

## Packaging

|  |
|--|
|  |
|--|

## Specification

|                                                  |                          |
|--------------------------------------------------|--------------------------|
| Appearance                                       | White crystalline powder |
| Assay (by HClO4 titration)                       | Min 99%                  |
| Heavy metal (as Pb)                              | Max 0.001%               |
| Ammonium (NH4)                                   | Max 0.01%                |
| Foreign amino acids                              | Max 0.3%                 |
| Other ninhydrin positive substances (as glycine) | Max 0.1%                 |

## Safety Information and Hazard Symbols



Symbol: GHS07

Signal Word: Warning

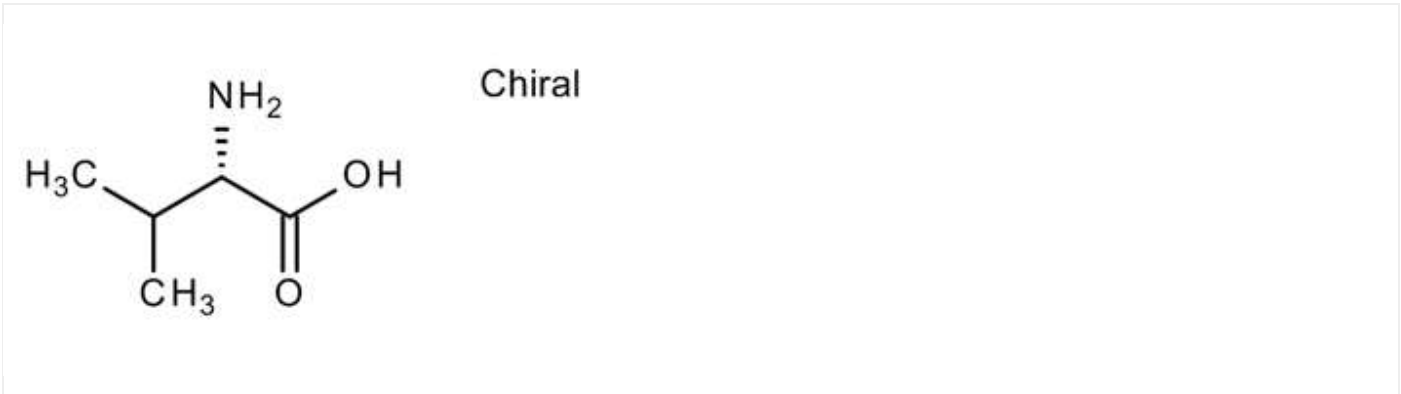
Hazardous Statement: H315-H319-H335

Precaution Statement: P261-P305 + P351 + P338

L-VALINE 99 +% FOR BIOCHEMISTRY

(S)-a-Aminoisovaleric acid, L-2-Amino-3-methylbutanoic acid

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 02818      | Grade            |           |
| Purity            | 99%        | CAS No.          | 72-18-4   |
| Molecular Formula | C5H11NO2   | Molecular Weight | 117.15    |
| H.S.Code          | 2922.49900 | Shelf Life       | 60 Months |



Physical Properties

|                         |       |                                |                            |                                    |              |
|-------------------------|-------|--------------------------------|----------------------------|------------------------------------|--------------|
| Physical state at 20 °C | Solid | Colour                         | White crystalline          | Melting point/ Freezing point [°C] | 295 - 300 °C |
| Density [g/cm3]         | 1.23  | Solubility in water [% weight] | Partially soluble in water |                                    |              |

Packaging

|  |
|--|
|  |
|--|

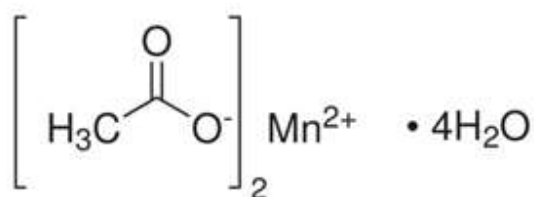
Specification

|                                                  |                          |
|--------------------------------------------------|--------------------------|
| Appearance                                       | White crystalline powder |
| Assay                                            | Min 99%                  |
| Heavy metal (as Pb)                              | Max 0.001%               |
| Ammonium (NH4)                                   | Max 0.01%                |
| Foreign amino acids                              | Max 0.3%                 |
| Other ninhydrin positive substances (as glycine) | Max 0.1%                 |

# MANGANESE (II) ACETATE TETRAHYDRATE 98.5% EXTRAPURE

Manganous acetate

|                   |                                                         |                  |           |
|-------------------|---------------------------------------------------------|------------------|-----------|
| Product Code.     | 01625                                                   | Grade            |           |
| Purity            | 98.5%                                                   | CAS No.          | 6156-78-1 |
| Molecular Formula | (CH <sub>3</sub> COO) <sub>2</sub> Mn.4H <sub>2</sub> O | Molecular Weight | 245.09    |
| H.S.Code          | 2915.29300                                              | Shelf Life       | 60 Months |



## Physical Properties

|                                    |          |                              |                  |                                |                  |
|------------------------------------|----------|------------------------------|------------------|--------------------------------|------------------|
| Physical state at 20 °C            | Solid    | Colour                       | Pink crystalline | Odour                          | Odorless         |
| Melting point/ Freezing point [°C] | > 300 °C | Density [g/cm <sup>3</sup> ] | 1.589            | Solubility in water [% weight] | Soluble in water |

## Specification

|                              |                                  |
|------------------------------|----------------------------------|
| Appearance                   | Slightly pink crystalline powder |
| Assay                        | Min 98.5%                        |
| Substance insoluble in water | Max 0.025%                       |
| Chloride (Cl)                | Max 0.01%                        |
| Sulphate (SO <sub>4</sub> )  | Max 0.05%                        |
| Iron (Fe)                    | Max 0.005%                       |

## Safety Information and Hazard Symbols



Symbol: GHS07

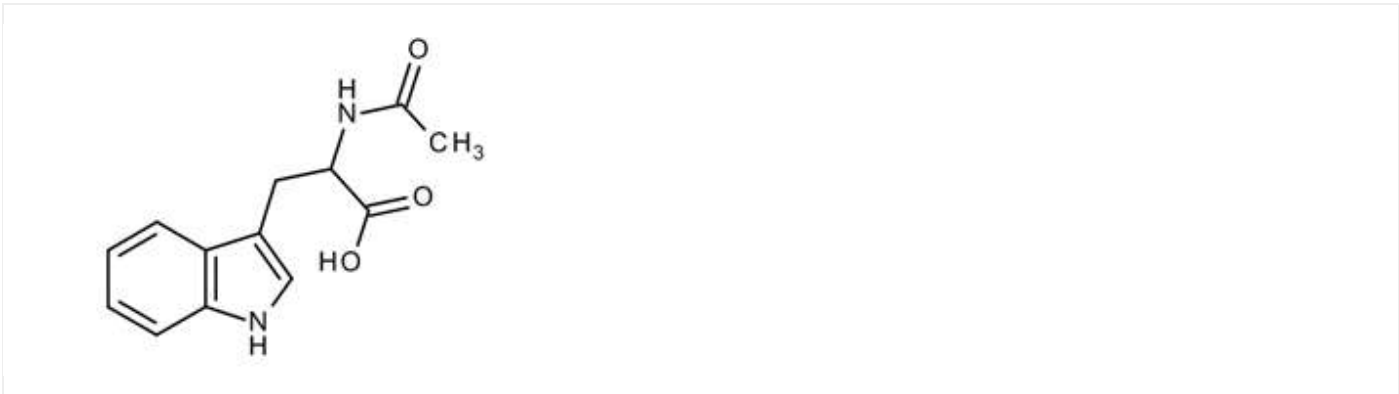
Signal Word: Warning

Hazardous Statement: H315-H319-H335

Precaution Statement: P261-P305 + P351 + P338

# N-ACETYL-DL-TRYPTOPHAN 99% FOR BIOCHEMISTRY

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 00053      | Grade            |           |
| Purity            | 99%        | CAS No.          | 87-32-1   |
| Molecular Formula | C13H14N2O3 | Molecular Weight | 246.27    |
| H.S.Code          | 2933.99000 | Shelf Life       | 60 Months |



## Physical Properties

|                         |       |        |                |
|-------------------------|-------|--------|----------------|
| Physical state at 20 °C | Solid | Colour | White to beige |
|-------------------------|-------|--------|----------------|

## Packaging



## Specification

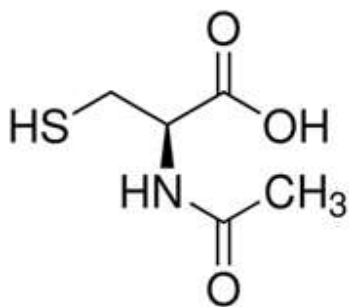
|                     |                                            |
|---------------------|--------------------------------------------|
| Appearance          | White to off white with yellow cast powder |
| Assay (acidimetric) | Min 99%                                    |
| Heavy metal (as Pb) | Max 0.001%                                 |
| Ammonium (NH4)      | Max 0.001%                                 |
| Melting range       | 204 - 206 deg C                            |



# N-ACETYL-L-CYSTEINE 99% FOR BIOCHEMISTRY

## LNAC; NAC

|                   |            |                  |                  |
|-------------------|------------|------------------|------------------|
| Product Code.     | 00047      | Grade            | For Biochemistry |
| Purity            | 99%        | CAS No.          | 616-91-1         |
| Molecular Formula | C5H9NO3S   | Molecular Weight | 163.20           |
| H.S.Code          | 2930.90400 | Shelf Life       | 60 Months        |



## Physical Properties

|                         |          |                                    |                   |       |                         |
|-------------------------|----------|------------------------------------|-------------------|-------|-------------------------|
| Physical state at 20 °C | Solid    | Colour                             | White crystalline | Odour | Slight acetic acid odor |
| pH value                | 2 - 2.75 | Melting point/ Freezing point [°C] | 106 - 108 °C      |       |                         |

## Packaging



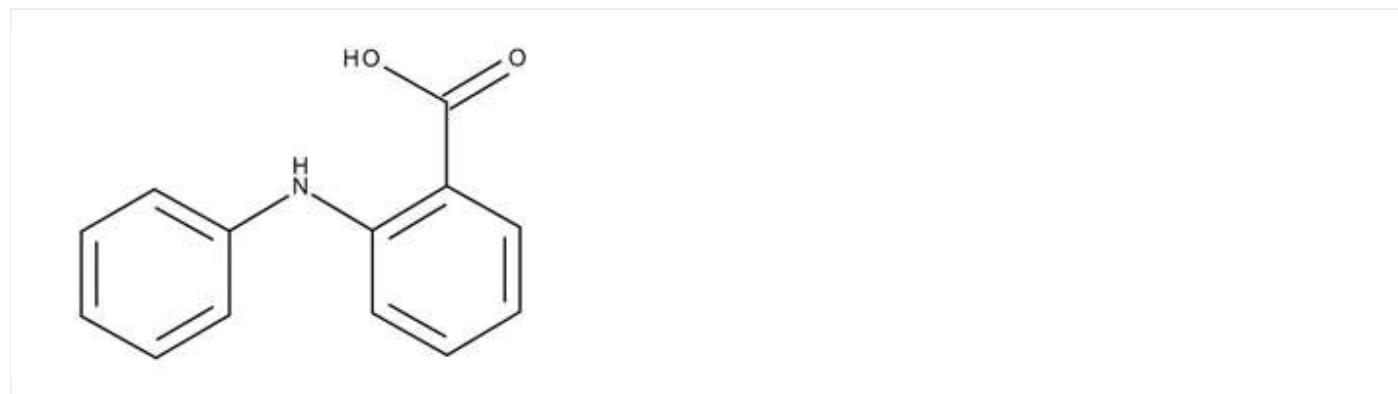
## Specification

|                               |                            |
|-------------------------------|----------------------------|
| Appearance                    | A white crystalline powder |
| Assay                         | Min 99.0%                  |
| Solubility in water           | Min 10 mg/ml               |
| pH (100 g/L in water at 20°C) | 1.5 - 2.5                  |
| Melting point                 | 108-110 °C                 |

## N-PHENYLANTHRANILIC ACID 97% AR

Redox indicator: Colourless to Pinkish violet 2-(Phenylamino)benzoic acid, Diphenylamine-2-carboxylic acid, DpC

|                   |            |                  |           |
|-------------------|------------|------------------|-----------|
| Product Code.     | 01985      | Grade            | AR        |
| Purity            | 97%        | CAS No.          | 91-40-7   |
| Molecular Formula | C13H11NO2  | Molecular Weight | 213.24    |
| H.S.Code          | 2922.43000 | Shelf Life       | 60 Months |



### Physical Properties

|                                    |              |                                |                    |       |          |
|------------------------------------|--------------|--------------------------------|--------------------|-------|----------|
| Physical state at 20 °C            | Solid        | Colour                         | Yellow powder      | Odour | Odorless |
| Melting point/ Freezing point [°C] | 182 - 185 °C | Solubility in water [% weight] | Insoluble in water |       |          |

### Specification

|                   |                            |
|-------------------|----------------------------|
| Appearance        | White to Faint Grey powder |
| Assay (titration) | 97.0-103.0%                |
| Melting point     | 182.0 - 185.0°C            |
| Ash content       | Max 0.05%                  |

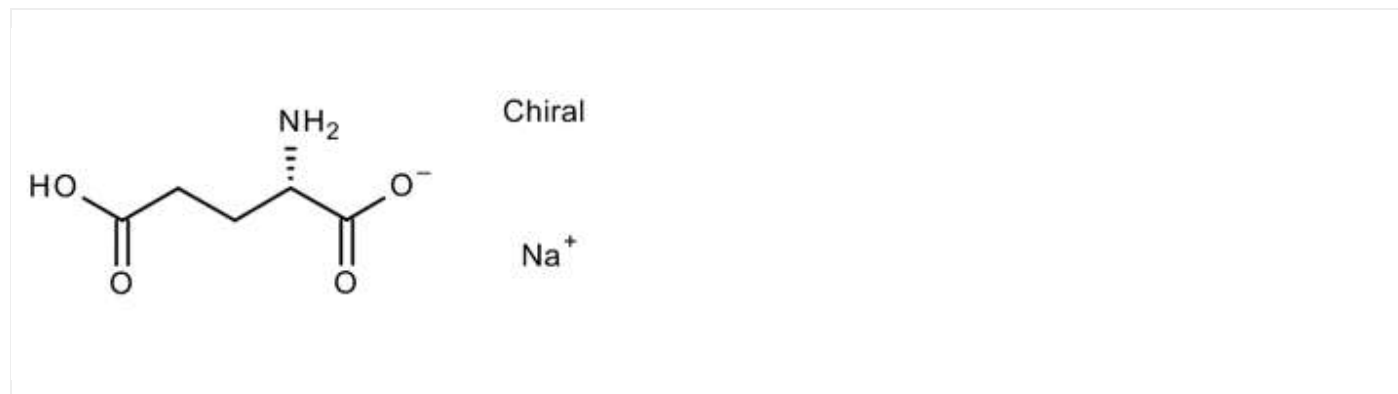
### Safety Information and Hazard Symbols

|                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------|
|                                            |
| Symbol: GHS07<br>Signal Word: Warning<br>Hazardous Statement: H315-H319-H335<br>Precaution Statement: P261-P305 + P351 + P338 |

## SODIUM-L-GLUTAMATE (MONOHYDRATE) 98%

(S)-2-Aminopentanedioic acid; L-Glutamic acid monosodium salt; Glu; MSG; Monosodium glutamate  
L-glutamic acid mono sodium salt

|                   |               |                  |           |
|-------------------|---------------|------------------|-----------|
| Product Code.     | 02414         | Grade            |           |
| Purity            | 99%           | CAS No.          | 6106-04-3 |
| Molecular Formula | C5H8NNaO4.H2O | Molecular Weight | 187.13    |
| H.S.Code          | 2922.42200    | Shelf Life       | 60 Months |



### Physical Properties

|                         |       |                                    |                |                                |                  |
|-------------------------|-------|------------------------------------|----------------|--------------------------------|------------------|
| Physical state at 20 °C | Solid | Colour                             | White crystals | Odour                          | Odorless         |
| pH value                | 7     | Melting point/ Freezing point [°C] | 232 °C         | Solubility in water [% weight] | Soluble in water |

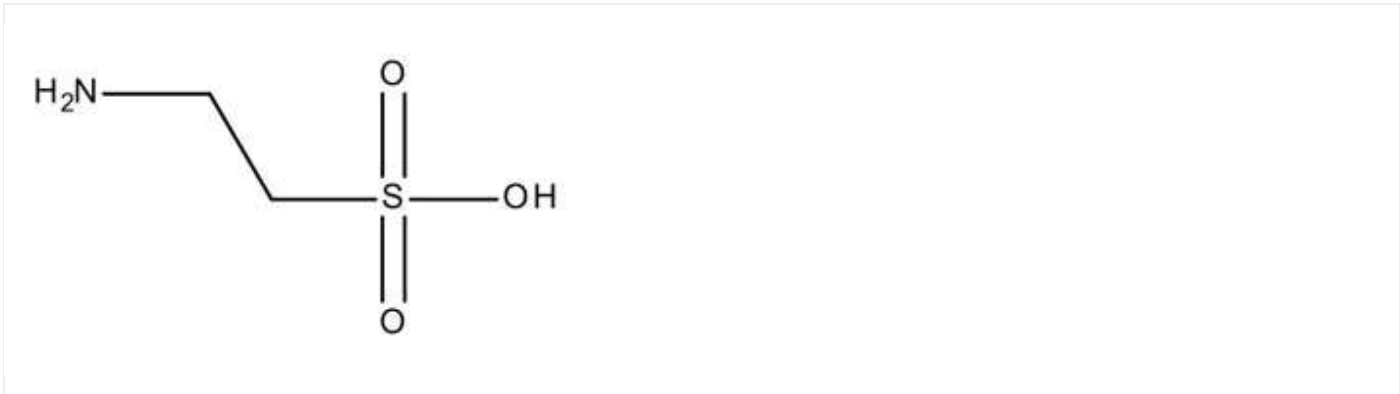
### Specification

|                             |                              |
|-----------------------------|------------------------------|
| Appearance                  | White needle shaped crystals |
| Assay                       | Min 99%                      |
| Chloride (Cl)               | Max 0.2%                     |
| Ammonium (NH <sub>4</sub> ) | Max 0.01%                    |
| Arsenic (As)                | Max 0.0003%                  |
| Lead (Pb)                   | Max 0.001%                   |
| Copper (Cu)                 | Max 0.001%                   |
| Zinc (Zn)                   | Max 0.0001%                  |
| Water (H <sub>2</sub> O)    | 9.2-10%                      |

# TAURINE 99% FOR SYNTHESIS

2-Aminoethanesulfonic acid

|                   |            |                  |               |
|-------------------|------------|------------------|---------------|
| Product Code.     | 02623      | Grade            | For Synthesis |
| Purity            | 99%        | CAS No.          | 107-35-7      |
| Molecular Formula | C2H7NO3S   | Molecular Weight | 125.15        |
| H.S.Code          | 2921.19900 | Shelf Life       | 60 Months     |



## Physical Properties

|                         |                              |                                    |                   |                                |                                        |
|-------------------------|------------------------------|------------------------------------|-------------------|--------------------------------|----------------------------------------|
| Physical state at 20 °C | Solid                        | Colour                             | White crystalline | Odour                          | Odorless                               |
| pH value                | 4.5 - 6 at 62.6 g/l at 25 °C | Melting point/ Freezing point [°C] | > 300 °C          | Solubility in water [% weight] | 62.6 g/l at 20 °C - completely soluble |

## Packaging

## Specification

|                                  |                          |
|----------------------------------|--------------------------|
| Appearance                       | White crystalline powder |
| Assay                            | Min 99%                  |
| Melting point                    | 328 - 329°C              |
| Solubility (1 gm in 10 mL water) | Clear                    |
| pH (0.5 M solution in water)     | 4.5 - 6.0                |
| Loss on dryig (at 110°C)         | Max 1%                   |
| Residue on ignition (as SO4)     | Max 0.1%                 |

## Safety Information and Hazard Symbols



Symbol: GHS07

Signal Word: Warning

Hazardous Statement: H315-H319-H335

Precaution Statement: P261-P305 + P351 + P338

## По вопросам продаж и поддержки обращайтесь:

Алматы (7273)495-231  
Ангарск (3955)60-70-56  
Архангельск (8182)63-90-72  
Астрахань (8512)99-46-04  
Барнаул (3852)73-04-60  
Белгород (4722)40-23-64  
Благовещенск (4162)22-76-07  
Брянск (4832)59-03-52  
Владивосток (423)249-28-31  
Владикавказ (8672)28-90-48  
Владимир (4922)49-43-18  
Волгоград (844)278-03-48  
Вологда (8172)26-41-59  
Воронеж (473)204-51-73  
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06  
Ижевск (3412)26-03-58  
Иркутск (395)279-98-46  
Казань (843)206-01-48  
Калининград (4012)72-03-81  
Калуга (4842)92-23-67  
Кемерово (3842)65-04-62  
Киров (8332)68-02-04  
Коломна (4966)23-41-49  
Кострома (4942)77-07-48  
Краснодар (861)203-40-90  
Красноярск (391)204-63-61  
Курск (4712)77-13-04  
Курган (3522)50-90-47  
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13  
Москва (495)268-04-70  
Мурманск (8152)59-64-93  
Набережные Челны (8552)20-53-41  
Новокузнецк (3843)20-46-81  
Ноябрьск (3496)41-32-12  
Новосибирск (383)227-86-73  
Омск (3812)21-46-40  
Орел (4862)44-53-42  
Оренбург (3532)37-68-04  
Пенза (8412)22-31-16  
Петрозаводск (8142)55-98-37  
Псков (8112)59-10-37  
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15  
Рязань (4912)46-61-64  
Самара (846)206-03-16  
Санкт-Петербург (812)309-46-40  
Саратов (845)249-38-78  
Севастополь (8692)22-31-93  
Саранск (8342)22-96-24  
Симферополь (3652)67-13-56  
Смоленск (4812)29-41-54  
Сочи (862)225-72-31  
Ставрополь (8652)20-65-13  
Сургут (3462)77-98-35  
Сыктывкар (8212)25-95-17  
Тамбов (4752)50-40-97  
Тверь (4822)63-31-35

Тольятти (8482)63-91-07  
Томск (3822)98-41-53  
Тула (4872)33-79-87  
Тюмень (3452)66-21-18  
Ульяновск (8422)24-23-59  
Улан-Удэ (3012)59-97-51  
Уфа (347)229-48-12  
Хабаровск (4212)92-98-04  
Чебоксары (8352)28-53-07  
Челябинск (351)202-03-61  
Череповец (8202)49-02-64  
Чита (3022)38-34-83  
Якутск (4112)23-90-97  
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47

эл.почта: [pva@nt-rt.ru](mailto:pva@nt-rt.ru) || сайт: <https://pallav.nt-rt.ru/>