# Аминокислоты

## Технические характеристики


По вопросам продаж и поддержки обращайтесь:

Алматы (727)3454704
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
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Вологда (8172)26-41-59
Воронеж (473)204-51-73
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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
Нижний Новгород (831)429-08-12
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
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# L-Arginine Hydrochloride (Ph. Eur., USP) pure, pharma grade

Assay (titr., calc. on dried subst.): 98.5 - 101.0 %

| | |
|---|---|
| CODE | **A1700** |
| CAS | **1119-34-2** |
| MOLECULAR FORMULA | **$C_6H_{14}N_4O_2 \cdot HCl$** |
| MOLAR MASS | **210.66 g/mol** |

## Packs sizes (2)

| | CODE | PACKAGING SIZE |
|---|---|---|
|  | CODE<br>A1700,1000 | PACKAGING SIZE<br>1 kg |
|  | CODE<br>A1700,9015 | PACKAGING SIZE<br>15 kg |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 900 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A1700 |
| PRODUCT NAME: | L-Arginine Hydrochloride (Ph. Eur., USP) pure, pharma grade |

| | |
|---|---|
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 98.5 - 101.0 %<br>α20°C/D; 8 %, 6 M HCl: +21.4° - +23.6°<br>Appearance of solution: passes test<br>Identity: passes test<br>Heavy metals (as Pb): max. 0.002 %<br>Sulfated ash: max. 0.1 %<br>Loss on drying (2 h; 105°C): max. 0.2 %<br>α20°C/D; 8 %, 250 g/L HCl, calc. on dried subst.: +21.0° - +23.5°<br>Ammonium: max. 0.02 %<br>Chloride: 16.5 - 17.1 %<br>Sulfate: max. 0.03 %<br>Fe: max. 0.001 %<br>Ninhydrin positive substances (HPLC)<br>each individual impurity: max. 0.2 %<br>Total impurities: max. 0.5 %<br>Ninhydrin positive substances (TLC)<br>Each individual impurity: max. 0.5 %<br>Total impurities: max. 2 %<br>Elemental impurities (according to ICH Q3D):<br>Class 1 (Cd): max. 0.5 ppm<br>Class 2B (Au): max. 10 ppm<br>Class 2B (Rh): max. 10 ppm<br>Class 2A (Co): max. 5 ppm<br>Class 3 (Li): max. 55 ppm<br>Class 1 (Pb): max. 0.5 ppm<br>Class 1 (As): max. 1.5 ppm<br>Class 1 (Hg): max. 1.5 ppm<br>Class 2A (V): max. 10 ppm<br>Class 2A (Ni): max. 20 ppm<br>Class 2B (Tl): max. 0.8 ppm<br>Class 2B (Pd): max. 10 ppm<br>Class 2B (Ir): max. 10 ppm<br>Class 2B (Os): max. 10 ppm<br>Class 2B (Ru): max. 10 ppm<br>Class 2B (Pt): max. 10 ppm<br>Class 2B (Se): max. 15 ppm<br>Class 2B (Ag): max. 15 ppm<br>Class 3 (Sb): max. 120 ppm<br>Class 3 (Ba): max. 140 ppm<br>Class 3 (Mo): max. 25 ppm |

| | |
|---|---|
| | Class 3 (Cr): max. 25 ppm<br>Class 3 (Cu): max. 250 ppm<br>Class 3 (Sn): max. 600 ppm |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 214-275-1 |
| CS: | 29224985 |

# L-Arginine Hydrochloride *BioChemica*

Assay (titr.): min. 99 %

| | |
|---|---|
| CODE | **A3709** |
| CAS | **1119-34-2** |
| MOLECULAR FORMULA | **$C_6H_{14}N_4O_2 \cdot HCl$** |
| MOLAR MASS | **210.66 g/mol** |

## Packs sizes (1)

| CODE | PACKAGING SIZE |
|---|---|
| CODE<br>A3709,1000 | PACKAGING SIZE<br>1 kg |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 900 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A3709 |
| PRODUCT NAME: | L-Arginine Hydrochloride *BioChemica* |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr.): min. 99 %<br>α20°C/D; 8 %, 6 M HCl: +21.4° - +23.5°<br>Heavy metals (as Pb): max. 0.001 %<br>Ammonia: max. 0.1 % |

| | |
|---|---|
| | Other amino acids: max. 0.5 %<br>Sulfate: max. 0.02 %<br>A (1 cm/0.1 M in $H_2O$)<br>260 nm: max. 0.2<br>280 nm: max. 0.1 |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 214-275-1 |
| CS: | 29224985 |

# L-Alanine (Ph. Eur., USP) pure, pharma grade

Assay (titr., calc. on dried subst.): 98.5 - 101.0 %

| | |
|---|---|
| CODE | **A1688** |
| CAS | **56-41-7** |
| MOLECULAR FORMULA | **$CH_3CH(NH_2)COOH$** |
| MOLAR MASS | **89.09 g/mol** |

## Packs sizes (1)

| CODE | PACKAGING SIZE |
|---|---|
| CODE<br>A1688,0100 | PACKAGING SIZE<br>100 g |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 166.5 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A1688 |
| PRODUCT NAME: | L-Alanine (Ph. Eur., USP) pure, pharma grade |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 98.5 - 101.0 %<br>α25°C/D; 10 %, 6 M HCl: +13.7° - +15.1° |

| | |
|---|---|
| | Appearance of solution: passes test<br>Heavy metals (as Pb): max. 0.0015 %<br>Sulfated ash: max. 0.1 %<br>Loss on drying (3 h; 105°C): max. 0.2 %<br>Identity: passes test<br>α20°C/D; 10 %, HCl 250 g/L, calc. on dried subst.: +13.5° - +15.5°<br>pH (5 %; $H_2O$; 25°C): 5.5 - 7.0<br>Ammonium: max. 0.02 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.03 %<br>Fe: max. 0.001 %<br>Ninhydrin positive substances (HPLC)<br>Any ninhydrin-pos. Subst.: max. 0.1 %<br>Total impurities: max. 0.5 %<br>Ninhydrin positive substances (TLC)<br>Each individual impurity: max. 0.5 %<br>Total impurities: max. 2 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-273-8 |
| CS: | 29224985 |

# L-Arginine base (Ph. Eur., USP) pure, pharma grade

Assay (titr., calc. on dried subst.): 98.5 - 101.0 %

| | |
|---|---|
| CODE | **A1345** |
| CAS | **74-79-3** |
| MOLECULAR FORMULA | **$C_6H_{14}N_4O_2$** |
| MOLAR MASS | **174.20 g/mol** |

## Packs sizes (3)

| | CODE | PACKAGING SIZE |
|---|---|---|
|  | CODE<br>A1345,0500 | PACKAGING SIZE<br>500 g |
|  | CODE<br>A1345,1000 | PACKAGING SIZE<br>1 kg |
|  | CODE<br>A1345,9010 | PACKAGING SIZE<br>10 kg |

## ⓘ Technical data

| | |
|---|---|
| SOLUBILITY: | 150 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |

| | |
|---|---|
| PRODUCT CODE: | A1345 |
| PRODUCT NAME: | L-Arginine base (Ph. Eur., USP) pure, pharma grade |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 98.5 - 101.0 %<br>α25°C/D; 8 %, 6 M HCl: +26.3° - +27.7°<br>Appearance of solution: passes test<br>Identity: passes test<br>Heavy metals (as Pb): max. 0.0015 %<br>Sulfated ash: max. 0.1 %<br>Loss on drying (3 h; 105°C): max. 0.5 %<br>α20°C/D; 8 %, HCl 250 g/L, calc. on dried subst.: +25.5° - +28.5°<br>Ammonium: max. 0.02 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.03 %<br>Fe: max. 0.001 %<br>Ninhydrin positive substances (HPLC)<br>Each individual impurity: max. 0.2 %<br>Total impurities: max. 0.5 %<br>Ninhydrin positive substances (TLC)<br>Each individual impurity: max. 0.5 %<br>Total impurities: max. 2.0 % |
| HAZARD PICTOGRAMS |  |
| WGK: | 1 |
| STORAGE: | RT |
| SIGNAL WORD: | Attention |
| GHS SYMBOLS: | GHS07 |
| H PHRASES: | H319 |
| P PHRASES: | P264 |

| | |
|---|---|
| | P280<br>P305+P351+P338<br>P337+P313 |
| EINECS: | 200-811-1 |
| CS: | 29224985 |

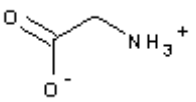
# Glycine for molecular biology

Assay (titr.): min. 99.5 %

| | |
|---|---|
| CODE | **A1067** |
| CAS | **56-40-6** |
| MOLECULAR FORMULA | **$H_2NCH_2COOH$** |
| MOLAR MASS | **75.07 g/mol** |

## Packs sizes (2)

| | CODE | PACKAGING SIZE |
|---|---|---|
|  | CODE<br>A1067,1000 | PACKAGING SIZE<br>1 kg |
|  | CODE<br>A1067,5000 | PACKAGING SIZE<br>5 kg |




## Technical data

| | |
|---|---|
| SOLUBILITY: | 225 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |

| | |
|---|---|
| PRODUCT CODE: | A1067 |
| PRODUCT NAME: | Glycine for molecular biology |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | DNases/RNases/Proteases: not detectable<br>Assay (titr.): min. 99.5 %<br>pH (5 %; $H_2O$): 5.9 - 6.4<br>Loss on drying: max. 0.1 %<br>Heavy metals (as Pb): max. 0.001 %<br>Other amino acids: max. 0.1 %<br>Ammonium: max. 0.02 %<br>Chloride: max. 0.004 %<br>Sulfate: max. 0.005 %<br>Fe: max. 0.0005 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-272-2 |
| CS: | 29224985 |

# L-Glutamine (DAB, USP) pure, pharma grade

Assay (titr., calc. on dried subst.): 99.0 - 101.0 %

| | |
|---|---|
| CODE | **A1420** |
| CAS | **56-85-9** |
| MOLECULAR FORMULA | **$C_5H_{10}N_2O_3$** |
| MOLAR MASS | **146.15 g/mol** |

## Packs sizes (3)

| | CODE | PACKAGING SIZE |
|---|---|---|
|  | CODE<br>A1420,0250 | PACKAGING SIZE<br>250 g |
|  | CODE<br>A1420,1000 | PACKAGING SIZE<br>1 kg |
|  | CODE<br>A1420,9025 | PACKAGING SIZE<br>25 kg |

## ⓘ Technical data

| | |
|---|---|
| SOLUBILITY: | 100 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |

| | |
|---|---|
| PRODUCT CODE: | A1420 |
| PRODUCT NAME: | L-Glutamine (DAB, USP) pure, pharma grade |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 99.0 - 101.0 %<br>α20°C/D; 10 %, 2 M HCl, calc. on dried subst.: +31.5° - +33.0°<br>α20°C/D; 4 %, $H_2O$: +6.3° - +7.3°<br>Appearance of solution: passes test<br>Identity: passes test<br>pH (25 g/L; $H_2O$): 4.0 - 6.0<br>Sulfated ash: max. 0.1 %<br>Loss on drying (3 h; 105°C): max. 0.3 %<br>Ninhydrin positive substances: max. 0.5 %<br>Ammonium: max. 0.1 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.02 %<br>Fe: max. 0.001 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-292-1 |
| CS: | 29241900 |

# L-Cysteine Hydrochloride 1-hydrate (Ph. Eur., USP) pure, pharma grade

Assay (titr., calc. on dried subst.): 98.5 - 101.0 %

| | |
|---|---|
| CODE | **A1702** |
| CAS | **7048-04-6** |
| MOLECULAR FORMULA | **$C_3H_7NO_2S \cdot HCl \cdot H_2O$** |
| MOLAR MASS | **175.64 g/mol** |

## Packs sizes (1)

| CODE | PACKAGING SIZE |
|---|---|
| CODE<br>A1702,1000 | PACKAGING SIZE<br>1 kg |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 650 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A1702 |
| PRODUCT NAME: | L-Cysteine Hydrochloride 1-hydrate (Ph. Eur., USP) pure, pharma grade |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 98.5 - 101.0 % |

| | |
|---|---|
| | α25°C/D; 8 %, 6 M HCl: +5.7° - +6.8°<br>Appearance of solution: passes test<br>Identity: passes test<br>Heavy metals (as Pb): max. 0.0015 %<br>Sulfated ash: max. 0.1 %<br>Loss on drying: 8.0 - 12.0 %<br>α20°C/D; 8 %, HCl 250 g/L, calc. on dried subst.: +5.5° - +7.0°<br>Ammonium: max. 0.02 %<br>Sulfate: max. 0.03 %<br>Fe: max. 0.002 %<br>Ninhydrin positive substances (HPLC)<br>Any other ninhydrin-pos. Subst.: max. 0.2 %<br>Total impurities: max. 1.0 %<br>Cystine: max. 0.5 %<br>Ninhydrin positive substances (TLC)<br>Each individual impurity: max. 0.5 %<br>Total impurities: max. 2 % |
| HAZARD PICTOGRAMS |  |
| WGK: | 1 |
| STORAGE: | RT |
| SIGNAL WORD: | Attention |
| GHS SYMBOLS: | GHS07 |
| H PHRASES: | H319 |
| P PHRASES: | P264<br>P280<br>P305+P351+P338<br>P337+P313 |
| EINECS: | 200-157-7 |
| CS: | 29309016 |

# L-Asparagine 1-hydrate (Ph. Eur.) pure, pharma grade

Assay (titr., dried subst.): 99.0 - 101.0 %

| | |
|---|---|
| CODE | **A1668** |
| CAS | **5794-13-8** |
| MOLECULAR FORMULA | **$C_4H_8N_2O_3 \cdot H_2O$** |
| MOLAR MASS | **150.14 g/mol** |

## Packs sizes (3)

| | CODE | PACKAGING SIZE | |
|---|---|---|---|
|  | CODE<br>A1668,0100 | PACKAGING SIZE<br>100 g | Product active until stock lasts. |
|  | CODE<br>A1668,1000 | PACKAGING SIZE<br>1 kg | |
|  | CODE<br>A1668,9025 | PACKAGING SIZE<br>25 kg | |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 30 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |

| | |
|---|---|
| PRODUCT CODE: | A1668 |
| PRODUCT NAME: | L-Asparagine 1-hydrate (Ph. Eur.) pure, pharma grade |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., dried subst.): 99.0 - 101.0 %<br>α20°C/D; 10 %, 3 N HCl, dried subst.: +33.7° - +36.0°<br>Appearance of solution: passes test<br>Identity: passes test<br>Sulfated ash: max. 0.1 %<br>Loss on drying: 10.5 - 12.5 %<br>pH (2 %; $H_2O$): 4.0 - 6.0<br>Ammonium: max. 0.1 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.02 %<br>Fe: max. 0.001 %<br>Related subst. (HPLC)<br>Impurity A: max. 0.5 %<br>Impurity C: max. 0.1 %<br>Each unspecified impurity: max. 0.05 %<br>Total impurities: max. 0.8 %<br>Elemental impurities (according to ICH Q3D):<br>Class 1 (Cd): max. 0.5 ppm<br>Class 2B (Au): max. 10 ppm<br>Class 2B (Rh): max. 10 ppm<br>Class 2A (Co): max. 5 ppm<br>Class 3 (Li): max. 55 ppm<br>Class 1 (Pb): max. 0.5 ppm<br>Class 1 (As): max. 1.5 ppm<br>Class 1 (Hg): max. 1.5 ppm<br>Class 2A (V): max. 10 ppm<br>Class 2A (Ni): max. 20 ppm<br>Class 2B (Tl): max. 1 ppm<br>Class 2B (Pd): max. 10 ppm<br>Class 2B (Ir): max. 10 ppm<br>Class 2B (Os): max. 10 ppm<br>Class 2B (Ru): max. 10 ppm<br>Class 2B (Pt): max. 10 ppm<br>Class 2B (Se): max. 15 ppm<br>Class 2B (Ag): max. 15 ppm |

| | |
|---|---|
| | Class 3 (Sb): max. 120 ppm<br>Class 3 (Ba): max. 140 ppm<br>Class 3 (Mo): max. 25 ppm<br>Class 3 (Cr): max. 25 ppm<br>Class 3 (Cu): max. 250 ppm<br>Class 3 (Sn): max. 600 ppm |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-735-9 |
| CS: | 29241900 |

# L-Asparagine 1-hydrate *BioChemica*

Assay (titr.): min. 99 %

| | |
|---|---|
| CODE | **A3721** |
| CAS | **5794-13-8** |
| MOLECULAR FORMULA | **$C_4H_8N_2O_3 \cdot H_2O$** |
| MOLAR MASS | **150.14 g/mol** |

## Packs sizes (2)

| | CODE | PACKAGING SIZE |
|---|---|---|
|  | CODE<br>A3721,0100 | PACKAGING SIZE<br>100 g |
|  | CODE<br>A3721,1000 | PACKAGING SIZE<br>1 kg |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 30 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A3721 |
| PRODUCT NAME: | L-Asparagine 1-hydrate *BioChemica* |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |

| | |
|---|---|
| SPECIFICATIONS: | Assay (titr.): min. 99 %<br>α20°C/D; 10 %, 3 M HCl: +33.7° - +36°<br>Heavy metals (as Pb): max. 0.001 %<br>Other amino acids: max. 0.5 %<br>Ammonium: max. 0.1 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.02 %<br>A (1 cm/0.1 M in HCl)<br>260 nm: max. 0.2<br>280 nm: max. 0.1 |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-735-9 |
| CS: | 29241900 |

# L-Asparagine anhydrous (USP-NF) pure, pharma grade

Assay (titr., calc. on dried subst.): 98.0 - 101.5 %

| | |
|---|---|
| CODE | **147755** |
| CAS | **70-47-3** |
| MOLECULAR FORMULA | **$C_4H_8N_2O_3$** |
| MOLAR MASS | **132.12 g/mol** |

## Packs sizes (1)

| CODE | PACKAGING SIZE |
|---|---|
| CODE<br>147755.0914 | PACKAGING SIZE<br>5 kg |

## Technical data

| | |
|---|---|
| PRODUCT CODE: | 147755 |
| PRODUCT NAME: | L-Asparagine anhydrous (USP-NF) pure, pharma grade |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 98.0 - 101.5 %<br>α20°C/D; 1 %, 6 M HCl: +33.0° - +36.5°<br>Colony count (yeasts & moulds): max. 100 CFU/g<br>Total aerobic microbial count: max. 1000 CFU/g<br>Identity: passes test<br>Loss on drying (3 h; 130°C): max. 1.0 % |

| | |
|---|---|
| | Residue on ignition: max. 0.1 %<br>Pb: max. 0.0005 %<br>Ninhydrin positive substances (TLC)<br>Each individual impurity: max. 0.5 %<br>Total impurities: max. 1.0 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-735-9 |
| CS: | 29241900 |

# L-Cysteine (DAB) pure, pharma grade

Assay (titr., calc. on dried subst.): 98.0 - 101.0 %

| | |
|---|---|
| CODE | **A1425** |
| CAS | **52-90-4** |
| MOLECULAR FORMULA | **$C_3H_7NO_2S$** |
| MOLAR MASS | **121.16 g/mol** |

## Packs sizes (1)

| CODE | PACKAGING SIZE |
|---|---|
| CODE<br>A1425,1000 | PACKAGING SIZE<br>1 kg |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 280 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A1425 |
| PRODUCT NAME: | L-Cysteine (DAB) pure, pharma grade |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 98.0 - 101.0 %<br>α20°C/D; 12 %, HCl, calc. on dried subst.: +8.0° - +9.5°<br>Appearance of solution: passes test |

| | |
|---|---|
| | Identity: passes test<br>pH (2.5 %; $H_2O$): 4.5 - 6.0<br>Heavy metals (as Pb): max. 0.001 %<br>Sulfated ash: max. 0.1 %<br>Loss on drying: max. 0.5 %<br>Ninhydrin positive substances: max. 0.5 %<br>Ammonium: max. 0.02 %<br>Chloride: max. 0.04 %<br>Sulfate: max. 0.03 %<br>Fe: max. 0.002 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-158-2 |
| CS: | 29309013 |

# L-Cysteine *BioChemica*

Assay (titr.): min. 99 %

| | |
|---|---|
| CODE | **A3694** |
| CAS | **52-90-4** |
| MOLECULAR FORMULA | **$C_3H_7NO_2S$** |
| MOLAR MASS | **121.16 g/mol** |

## Packs sizes (1)

| CODE | PACKAGING SIZE |
|---|---|
| CODE<br>A3694,0100 | PACKAGING SIZE<br>100 g |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 280 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A3694 |
| PRODUCT NAME: | L-Cysteine *BioChemica* |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr.): min. 99 %<br>α20°C/D; 5 %, HCl: +8° - +9.5°<br>Heavy metals (as Pb): max. 0.001 %<br>Insoluble matter: passes test |

| | |
|---|---|
| | Other amino acids: max. 0.5 %<br>Ammonium: max. 0.1 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.02 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-158-2 |
| CS: | 29309013 |

# L-Aspartic Acid (Ph. Eur., USP) pure, pharma grade

Assay (titr., calc. on dried subst.): 98.5 - 101.5 %

| | |
|---|---|
| CODE | **A1701** |
| CAS | **56-84-8** |
| MOLECULAR FORMULA | **$C_4H_7NO_4$** |
| MOLAR MASS | **133.10 g/mol** |

## Packs sizes (3)

| | CODE | PACKAGING SIZE |
|---|---|---|
|  | A1701,9050 | 50 kg |
|  | A1701,1000 | 1 kg |
|  | A1701,5000 | 5 kg |

## ⓘ Technical data

| | |
|---|---|
| SOLUBILITY: | 5 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |

| | |
|---|---|
| PRODUCT CODE: | A1701 |
| PRODUCT NAME: | L-Aspartic Acid (Ph. Eur., USP) pure, pharma grade |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 98.5 - 101.5 %<br>α20°C/D; 8 %, 6 M HCl: +24.0° - +26.0°<br>Appearance of solution: passes test<br>D-Aspartic Acid: max. 0.3 %<br>Identity: passes test<br>Sulfated ash: max. 0.1 %<br>Loss on drying (3 h; 105°C): max. 0.5 %<br>Ammonium: max. 0.02 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.03 %<br>Fe: max. 0.001 %<br>Related substances (Ph. Eur.)<br>Maleic acid: max. 0.10 %<br>Malic acid: max. 0.2 %<br>Fumaric acid: max. 0.10 %<br>Any unspecified impurity: max. 0.10 %<br>Total unspecified impurities: max. 0.3 %<br>Related substances (USP)<br>Maleic acid: max. 0.05 %<br>Malic acid: max. 0.20 %<br>Any unspecified impurity: max. 0.05 %<br>Total unspecified impurities: max. 0.10 %<br>Ninhydrin positive substances (HPLC)<br>Glutamic Acid: max. 0.2 %<br>Alanine: max. 0.2 %<br>Asparagine: max. 0.2 %<br>Total impurities: max. 1.0 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-291-6 |
| CS: | 29224985 |

# L-Proline (Ph. Eur., USP) pure, pharma grade

Assay (titr., calc. on dried subst.): 98.5 - 101.0 %

| | |
|---|---|
| CODE | **A1707** |
| CAS | **147-85-3** |
| MOLECULAR FORMULA | **$C_5H_9NO_2$** |
| MOLAR MASS | **115.13 g/mol** |

## Packs sizes (3)

| | CODE | PACKAGING SIZE |
|---|---|---|
|  | CODE<br>A1707,0100 | PACKAGING SIZE<br>100 g |
|  | CODE<br>A1707,1000 | PACKAGING SIZE<br>1 kg |
|  | CODE<br>A1707,9020 | PACKAGING SIZE<br>20 kg |

## ⓘ Technical data

| | |
|---|---|
| SOLUBILITY: | 1500 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |

| | |
|---|---|
| PRODUCT CODE: | A1707 |
| PRODUCT NAME: | L-Proline (Ph. Eur., USP) pure, pharma grade |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 98.5 - 101.0 %<br>α25°C/D; 4 %, $H_2O$: -84.3° - -86.3°<br>Appearance of solution: passes test<br>Identity: passes test<br>Heavy metals (as Pb): max. 0.0015 %<br>Sulfated ash: max. 0.1 %<br>Loss on drying (3 h; 105°C): max. 0.4 %<br>α20°C/D; 4 %, $H_2O$, calc. on dried subst.: -84.0° - -86.0°<br>Ammonium: max. 0.02 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.03 %<br>Fe: max. 0.001 %<br>Ninhydrin positive substances (HPLC)<br>Each individual impurity: max. 0.2 %<br>Total impurities: max. 0.5 %<br>Ninhydrin positive substances (TLC)<br>Each individual impurity: max. 0.5 %<br>Total impurities: max. 2 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 205-702-2 |
| CS: | 29339980 |

# L-Isoleucine (Ph. Eur., USP) pure, pharma grade

Assay (titr., calc. on dried subst.): 98.5 - 101.0 %

| | |
|---|---|
| CODE | **A1440** |
| CAS | **73-32-5** |
| MOLECULAR FORMULA | **$C_6H_{13}NO_2$** |
| MOLAR MASS | **131.18 g/mol** |

## Packs sizes (1)

| CODE | PACKAGING SIZE |
|---|---|
| CODE<br>A1440,1000 | PACKAGING SIZE<br>1 kg |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 32 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A1440 |
| PRODUCT NAME: | L-Isoleucine (Ph. Eur., USP) pure, pharma grade |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 98.5 - 101.0 %<br>α20°C/D; 4 %; 250 g/L HCl; calc. on dried subst.: |

| | |
|---|---|
| | +40.0° - +43.0°<br>Appearance of solution: passes test<br>Identity: passes test<br>Heavy metals (as Pb): max. 0.0015 %<br>Sulfated ash: max. 0.1 %<br>Loss on drying (3 h; 105°C): max. 0.3 %<br>α25°C/D; 4 %; 6 N HCl: +38.9° - +41.8°<br>pH (1 %; $H_2O$): 5.5 - 7.0<br>Ammonium: max. 0.02 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.03 %<br>Fe: max. 0.001 %<br>Ninhydrin positive substances (HPLC)<br>Valine: max. 0.3 %<br>Leucine: max. 0.3 %<br>Any other ninhydrin-pos. Subst.: max. 0.2 %<br>Total impurities: max. 1.0 %<br>Ninhydrin positive substances (TLC)<br>Valine: max. 0.5 %<br>Total impurities: max. 2 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-798-2 |
| CS: | 29224985 |

# L-Histidine Hydrochloride 1-hydrate *BioChemica*

Assay (GC): min. 99 %

| | |
|---|---|
| CODE | **A3733** |
| CAS | **5934-29-2** |
| MOLECULAR FORMULA | **$C_6H_9N_3O_2 \cdot HCl \cdot H_2O$** |
| MOLAR MASS | **209.63 g/mol** |

## Packs sizes (1)

| CODE | PACKAGING SIZE |
|---|---|
| CODE<br>A3733,0100 | PACKAGING SIZE<br>100 g |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 400 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A3733 |
| PRODUCT NAME: | L-Histidine Hydrochloride 1-hydrate *BioChemica* |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (GC): min. 99 %<br>α20°C/D; 10 %, HCl: +9.2° - +10.6° |

| | |
|---|---|
| | Heavy metals (as Pb): max. 0.001 %<br>Insoluble matter: passes test<br>Other amino acids: max. 0.5 %<br>Ammonium: max. 0.1 %<br>Sulfate: max. 0.02 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 211-438-9 |
| CS: | 29332990 |

# L-Histidine base *BioChemica*

Assay (titr.): min. 99 %

| | |
|---|---|
| CODE | **A3738** |
| CAS | **71-00-1** |
| MOLECULAR FORMULA | **$C_6H_9N_3O_2$** |
| MOLAR MASS | **155.16 g/mol** |

## Packs sizes (2)

| | CODE | PACKAGING SIZE |
|---|---|---|
|  | CODE<br>A3738,0100 | PACKAGING SIZE<br>100 g |
|  | CODE<br>A3738,1000 | PACKAGING SIZE<br>1 kg |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 42 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A3738 |
| PRODUCT NAME: | L-Histidine base *BioChemica* |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |

| | |
|---|---|
| SPECIFICATIONS: | Assay (titr.): min. 99 %<br>α20°C/D; 11 %, HCl 120 g/l: +11.8° - +12.8°<br>Heavy metals (as Pb): max. 0.001 %<br>Insoluble matter: passes test<br>Other amino acids: max. 0.5 %<br>Ammonium: max. 0.1 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.02 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-745-3 |
| CS: | 29332990 |

# L-Glutamine for cell culture

Assay (titr.): min. 99 %

| | |
|---|---|
| CODE | **A3704** |
| CAS | **56-85-9** |
| MOLECULAR FORMULA | **$C_5H_{10}N_2O_3$** |
| MOLAR MASS | **146.15 g/mol** |

## Packs sizes (1)

| CODE | PACKAGING SIZE |
|---|---|
| CODE<br>A3704,1000 | PACKAGING SIZE<br>1 kg |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 100 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A3704 |
| PRODUCT NAME: | L-Glutamine for cell culture |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Endotoxins: max. 6.0 EU/g<br>Assay (titr.): min. 99 %<br>α20°C/D; 10 %, 7 % HCl: +31.5° - +33.0°<br>Other amino acids: max. 0.5 % |

| | |
|---|---|
| | Ammonium: max. 0.1 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.02 %<br>As: max. 0.0001 %<br>Fe: max. 0.001 %<br>Pb: max. 0.001 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-292-1 |
| CS: | 29241900 |

# L-Glutamic Acid (Ph. Eur., USP) pure, pharma grade

Assay (titr., calc. on dried subst.): 98.5 - 100.5 %

| | |
|---|---|
| CODE | **A1704** |
| CAS | **56-86-0** |
| MOLECULAR FORMULA | **$C_5H_9NO_4$** |
| MOLAR MASS | **147.13 g/mol** |

## Packs sizes (2)

| | CODE | PACKAGING SIZE |
|---|---|---|
|  | CODE<br>A1704,1000 | PACKAGING SIZE<br>1 kg |
|  | CODE<br>A1704,9025 | PACKAGING SIZE<br>25 kg |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 11 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A1704 |
| PRODUCT NAME: | L-Glutamic Acid (Ph. Eur., USP) pure, pharma grade |

| | |
|---|---|
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 98.5 - 100.5 %<br>α20°C/D; 10 %, 1 M HCl, calc. on dried subst.: +30.5° - +32.5°<br>Appearance of solution: passes test<br>Identity: passes test<br>Sulfated ash: max. 0.1 %<br>Loss on drying (3 h; 105°C): max. 0.1 %<br>α20°C/D; 10 %, 2 M HCl: +31.5° - +32.5°<br>Ninhydrin positive substances: max. 0.5 %<br>Ammonium: max. 0.02 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.02 %<br>Fe: max. 0.001 %<br>Elemental impurities (according to ICH Q3D): passes test |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-293-7 |
| CS: | 29224200 |

# L-Cystine (Ph. Eur.) pure, pharma grade

Assay (titr., calc. on dried subst.): 98.5 - 101.0 %

| | |
|---|---|
| CODE | **A1703** |
| CAS | **56-89-3** |
| MOLECULAR FORMULA | **$C_6H_{12}N_2O_4S_2$** |
| MOLAR MASS | **240.30 g/mol** |

## Packs sizes (4)

| | CODE | PACKAGING SIZE | |
|---|---|---|---|
|  | CODE A1703,0100 | PACKAGING SIZE 100 g | |
|  | CODE A1703,0500 | PACKAGING SIZE 500 g | Product discontinued. Alternative A1703,0100 (please check specifications). |
|  | CODE A1703,1000 | PACKAGING SIZE 1 kg | |
|  | CODE A1703,5000 | PACKAGING SIZE 5 kg | |

## ⓘ Technical data

| | |
|---|---|
| SOLUBILITY: | 0.11 g/L ($H_2O$) |

| | |
|---|---|
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A1703 |
| PRODUCT NAME: | L-Cystine (Ph. Eur.) pure, pharma grade |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 98.5 - 101.0 %<br>α20°C/D; 2 %, 1 M HCl, calc. on dried subst.: -224° - -218°<br>Appearance of solution: passes test<br>Identity: passes test<br>Sulfated ash: max. 0.1 %<br>Loss on drying: max. 0.5 %<br>Ammonium: max. 0.02 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.03 %<br>Fe: max. 0.001 %<br>Ninhydrin positive substances (HPLC)<br>Any other ninhydrin-pos. Subst.: max. 0.2 %<br>Total impurities: max. 0.5 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-296-3 |
| CS: | 29309013 |

# L-Lysine 1-hydrate (DAB) pure, pharma grade

Assay (titr., calc. on dried subst.): 98.5 - 101.5 %

| | |
|---|---|
| CODE | **A1342** |
| CAS | **39665-12-8** |
| MOLECULAR FORMULA | **$C_6H_{14}N_2O_2 \cdot H_2O$** |
| MOLAR MASS | **164.21 g/mol** |

## Packs sizes (3)

| | CODE | PACKAGING SIZE |
|---|---|---|
|  | CODE<br>A1342,0100 | PACKAGING SIZE<br>100 g |
|  | CODE<br>A1342,0250 | PACKAGING SIZE<br>250 g |
|  | CODE<br>A1342,9010 | PACKAGING SIZE<br>10 kg |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 300 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |

| | |
|---|---|
| PRODUCT CODE: | A1342 |
| PRODUCT NAME: | L-Lysine 1-hydrate (DAB) pure, pharma grade |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 98.5 - 101.5 %<br>α20°C/D; 8 %, 6 M HCl, calc. on dried subst.: +25.5° - +27.0°<br>Appearance of solution: passes test<br>Identity: passes test<br>pH (2.5 %; $H_2O$): 9.0 - 10.5<br>Heavy metals (as Pb): max. 0.001 %<br>Sulfated ash: max. 0.1 %<br>Ninhydrin positive substances: max. 0.5 %<br>Water (K.F.): 10.0 - 11.5 %<br>Ammonium: max. 0.02 %<br>Chloride: max. 0.03 %<br>Sulfate: max. 0.02 %<br>Fe: max. 0.001 %<br>Elemental impurities (according to ICH Q3D):<br>Class 1 (Cd): max. 0.5 ppm<br>Class 2B (Au): max. 10 ppm<br>Class 2B (Rh): max. 10 ppm<br>Class 2A (Co): max. 5 ppm<br>Class 3 (Li): max. 55 ppm<br>Class 1 (Pb): max. 0.5 ppm<br>Class 1 (As): max. 1.5 ppm<br>Class 1 (Hg): max. 1.5 ppm<br>Class 2A (V): max. 10 ppm<br>Class 2A (Ni): max. 20 ppm<br>Class 2B (Tl): max. 0.8 ppm<br>Class 2B (Pd): max. 10 ppm<br>Class 2B (Ir): max. 10 ppm<br>Class 2B (Os): max. 10 ppm<br>Class 2B (Ru): max. 10 ppm<br>Class 2B (Pt): max. 10 ppm<br>Class 2B (Se): max. 15 ppm<br>Class 2B (Ag): max. 15 ppm<br>Class 3 (Sb): max. 120 ppm<br>Class 3 (Ba): max. 140 ppm<br>Class 3 (Mo): max. 25 ppm<br>Class 3 (Cr): max. 25 ppm |

| | |
|---|---|
| | Class 3 (Cu): max. 250 ppm<br>Class 3 (Sn): max. 600 ppm |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-294-2 |
| CS: | 29224100 |

# L-Leucine (Ph. Eur., USP) pure, pharma grade

Assay (titr., calc. on dried subst.): 98.5 - 101.0 %

| | |
|---|---|
| CODE | **A1426** |
| CAS | **61-90-5** |
| MOLECULAR FORMULA | **$C_6H_{13}NO_2$** |
| MOLAR MASS | **131.18 g/mol** |

## Packs sizes (1)

| CODE | PACKAGING SIZE |
|---|---|
| CODE<br>A1426,1000 | PACKAGING SIZE<br>1 kg |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 24.5 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A1426 |
| PRODUCT NAME: | L-Leucine (Ph. Eur., USP) pure, pharma grade |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 98.5 - 101.0 %<br>α25°C/D; 4 %, 6 N HCl: +14.9° - +17.3° |

| | |
|---|---|
| | Appearance of solution: passes test<br>Identity: passes test<br>pH (1 %; $H_2O$; 25°C): 5.5 - 7.0<br>Heavy metals (as Pb): max. 0.0015 %<br>Sulfated ash: max. 0.1 %<br>Loss on drying (3 h; 105°C): max. 0.2 %<br>α20°C/D; 4 %, HCl 250 g/L, calc. on dried subst.: +14.5° - +16.5°<br>Ammonium: max. 0.02 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.03 %<br>Fe: max. 0.001 %<br>Ninhydrin positive substances (HPLC)<br>Isoleucine: max. 0.8 %<br>Any other ninhydrin-pos. Subst.: max. 0.2 %<br>Total impurities: max. 1.0 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-522-0 |
| CS: | 29224985 |

# L-Hydroxyproline pure

Assay (titr.): 99.0 - 101.0 %

| | |
|---|---|
| CODE | **A1705** |
| CAS | **51-35-4** |
| MOLECULAR FORMULA | **$C_5H_9NO_3$** |
| MOLAR MASS | **131.1 g/mol** |

## Packs sizes (1)

| CODE | PACKAGING SIZE |
|---|---|
| CODE<br>A1705,0250 | PACKAGING SIZE<br>250 g |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 361 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A1705 |
| PRODUCT NAME: | L-Hydroxyproline pure |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr.): 99.0 - 101.0 %<br>α20°C/D; 5 %, $H_2O$: -74° - -77°<br>Heavy metals (as Pb): max. 0.001 %<br>Sulfated ash: max. 0.1 % |

| | |
|---|---|
| | Loss on drying: max. 0.2 %<br>Other amino acids: max. 0.5 %<br>Ammonium: max. 0.02 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.02 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-091-9 |
| CS: | 29339980 |

# L-Histidine base (Ph. Eur., USP) pure, pharma grade

Assay (titr., calc. on dried subst.): 98.5 - 101.0 %

| | |
|---|---|
| CODE | **A1341** |
| CAS | **71-00-1** |
| MOLECULAR FORMULA | **$C_6H_9N_3O_2$** |
| MOLAR MASS | **155.16 g/mol** |

## Packs sizes (3)

| | CODE | PACKAGING SIZE | |
|---|---|---|---|
|  | CODE<br>A1341,0100 | PACKAGING SIZE<br>100 g | Product active until stock lasts. |
|  | CODE<br>A1341,1000 | PACKAGING SIZE<br>1 kg | |
|  | CODE<br>A1341,5000 | PACKAGING SIZE<br>5 kg | |

## ⓘ Technical data

| | |
|---|---|
| SOLUBILITY: | 42 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |

| | |
|---|---|
| PRODUCT CODE: | A1341 |
| PRODUCT NAME: | L-Histidine base (Ph. Eur., USP) pure, pharma grade |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 98.5 - 101.0 %<br>α20°C/D; 11 %, HCl 120 g/L; calc. on dried subst.: +11.4° - +12.4°<br>α25°C/D; 11 %, 6 M HCl; calc. on dried subst.: +12.6° - +14.0°<br>Appearance of solution: passes test<br>Identity: passes test<br>pH (2 %; $H_2O$; 25°C): 7.0 - 8.5<br>Sulfated ash: max. 0.1 %<br>Loss on drying (3 h; 105°C): max. 0.2 %<br>Heavy metals (as Pb): max. 0.0015 %<br>Ammonium: max. 0.02 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.03 %<br>Fe: max. 0.001 %<br>Ninhydrin positive substances (HPLC)<br>Each individual impurity: max. 0.2 %<br>Total impurities: max. 0.5 %<br>Ninhydrin positive substances (TLC)<br>Each individual impurity: max. 0.5 %<br>Total impurities: max. 2 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-745-3 |
| CS: | 29332990 |

# L-Histidine Hydrochloride 1-hydrate (Ph. Eur.) pure, pharma grade

Assay (titr., calc. on dried subst.): 98.5 - 101.0 %

| | |
|---|---|
| CODE | **A1591** |
| CAS | **5934-29-2** |
| MOLECULAR FORMULA | **$C_6H_9N_3O_2 \cdot HCl \cdot H_2O$** |
| MOLAR MASS | **209.63 g/mol** |

## Packs sizes (3)

| | CODE | PACKAGING SIZE |
|---|---|---|
|  | CODE<br>A1591,0100 | PACKAGING SIZE<br>100 g |
|  | CODE<br>A1591,0500 | PACKAGING SIZE<br>500 g |
|  | CODE<br>A1591,1000 | PACKAGING SIZE<br>1 kg |

## ⓘ Technical data

| | |
|---|---|
| SOLUBILITY: | 400 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |

| | |
|---|---|
| PRODUCT CODE: | A1591 |
| PRODUCT NAME: | L-Histidine Hydrochloride 1-hydrate (Ph. Eur.) pure, pharma grade |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 98.5 - 101.0 %<br>α20°C/D; 11 %, HCl 120 g/L; calc. on dried subst.: +9.2° - +10.6°<br>Appearance of solution: passes test<br>Identity: passes test<br>pH (5 %; $H_2O$): 3.0 - 5.0<br>Sulfated ash: max. 0.1 %<br>Loss on drying: 7.0 - 10.0 %<br>Ammonium: max. 0.02 %<br>Sulfate: max. 0.03 %<br>Fe: max. 0.001 %<br>Ninhydrin positive substances (HPLC)<br>Each individual impurity: max. 0.2 %<br>Total impurities: max. 0.5 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 211-438-9 |
| CS: | 29332990 |

# L-Serine (Ph. Eur., USP) pure, pharma grade

Assay (titr., calc. on dried subst.): 98.5 - 101.0 %

| | |
|---|---|
| CODE | **A1708** |
| CAS | **56-45-1** |
| MOLECULAR FORMULA | **$C_3H_7NO_3$** |
| MOLAR MASS | **105.09 g/mol** |

## Packs sizes (2)

| | CODE | PACKAGING SIZE |
|---|---|---|
|  | CODE<br>A1708,0100 | PACKAGING SIZE<br>100 g |
|  | CODE<br>A1708,1000 | PACKAGING SIZE<br>1 kg |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 364 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A1708 |
| PRODUCT NAME: | L-Serine (Ph. Eur., USP) pure, pharma grade |
| HEADLINE COMMENT: | |

| | |
|---|---|
| | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 98.5 - 101.0 %<br>α20°C/D; 10 %, 2 M HCl, calc. on dried subst.: +14.0° - +16.0°<br>α25°C/D; 10 %, 2 N HCl: +14.0° - +15.6°<br>Appearance of solution: passes test<br>Identity: passes test<br>Heavy metals (as Pb): max. 0.0015 %<br>Sulfated ash: max. 0.1 %<br>Loss on drying (3 h; 105°C): max. 0.2 %<br>Ammonium: max. 0.02 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.03 %<br>Fe: max. 0.001 %<br>Ninhydrin positive substances (HPLC)<br>each individual impurity: max. 0.2 %<br>Total impurities: max. 0.5 %<br>Ninhydrin positive substances (TLC)<br>Each individual impurity: max. 0.5 %<br>Total impurities: max. 2 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-274-3 |
| CS: | 29225000 |

# L-Phenylalanine (Ph. Eur., USP) pure, pharma grade

Assay (titr., calc. on dried subst.): 98.5 - 101.0 %

| | |
|---|---|
| CODE | **A1344** |
| CAS | **63-91-2** |
| MOLECULAR FORMULA | **$C_9H_{11}NO_2$** |
| MOLAR MASS | **165.19 g/mol** |

## Packs sizes (1)

| CODE | PACKAGING SIZE |
|---|---|
| CODE<br>A1344,1000 | PACKAGING SIZE<br>1 kg |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 27 g/L |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A1344 |
| PRODUCT NAME: | L-Phenylalanine (Ph. Eur., USP) pure, pharma grade |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 98.5 - 101.0 % |

| | |
|---|---|
| | α25°C/D; 2 %, $H_2O$: -32.7° - -34.7°<br>Appearance of solution: passes test<br>Identity: passes test<br>pH (1 %; $H_2O$; 25°C): 5.4 - 6.0<br>Heavy metals (as Pb): max. 0.0015 %<br>Loss on drying (3 h; 105°C): max. 0.3 %<br>α20°C/D; 2 %, $H_2O$, calc. on dried subst.: -35.5° - -33.0°<br>Sulfated ash: max. 0.1 %<br>Ammonium: max. 0.02 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.03 %<br>Fe: max. 0.001 %<br>Ninhydrin positive substances (HPLC)<br>each individual impurity: max. 0.2 %<br>Total impurities: max. 0.5 %<br>Ninhydrin positive substances (TLC)<br>Each individual impurity: max. 0.5 %<br>Total impurities: max. 2 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-568-1 |
| CS: | 29224985 |

# L-Ornithine Hydrochloride (DAB) pure, pharma grade

Assay (titr., calc. on dried subst.): 99.0 - 102.0 %

| | |
|---|---|
| CODE | **A1343** |
| CAS | **3184-13-2** |
| MOLECULAR FORMULA | **$C_5H_{12}N_2O_2 \cdot HCl$** |
| MOLAR MASS | **168.62 g/mol** |

## Packs sizes (1)

| CODE | PACKAGING SIZE |
|---|---|
| CODE<br>A1343,1000 | PACKAGING SIZE<br>1 kg |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 100 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A1343 |
| PRODUCT NAME: | L-Ornithine Hydrochloride (DAB) pure, pharma grade |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 99.0 - 102.0 % |

| | |
|---|---|
| | α20°C/D; 4 %, 6 M HCl: +23° - +25°<br>Appearance of solution: passes test<br>Identity: passes test<br>pH (2.5 %; $H_2O$): 5.0 - 6.0<br>Heavy metals (as Pb): max. 0.001 %<br>Sulfated ash: max. 0.1 %<br>Loss on drying: max. 0.5 %<br>Ninhydrin positive substances: max. 0.5 %<br>Ammonium: max. 0.02 %<br>Sulfate: max. 0.02 %<br>Fe: max. 0.001 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 221-678-6 |
| CS: | 29224985 |

# L-Methionine (Ph. Eur., USP) pure, pharma grade

Assay (titr.): 99.0 - 101.0 %

| | |
|---|---|
| CODE | **A1340** |
| CAS | **63-68-3** |
| MOLECULAR FORMULA | **$C_5H_{11}NO_2S$** |
| MOLAR MASS | **149.21 g/mol** |

## Packs sizes (2)

| | CODE | PACKAGING SIZE |
|---|---|---|
|  | CODE<br>A1340,0100 | PACKAGING SIZE<br>100 g |
|  | CODE<br>A1340,1000 | PACKAGING SIZE<br>1 kg |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 48 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A1340 |
| PRODUCT NAME: | L-Methionine (Ph. Eur., USP) pure, pharma grade |
| HEADLINE COMMENT: | |

| | |
|---|---|
| | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr.): 99.0 - 101.0 %<br>α25°C/D; 2 %, 6 M HCl: +22.4° - +24.7°<br>Appearance of solution: passes test<br>Identity: passes test<br>pH (1 %; $H_2O$): 5.6 - 6.1<br>Sulfated ash: max. 0.1 %<br>Loss on drying (3 h; 105°C): max. 0.3 %<br>α20°C/D; 2 %, 250 g/L HCl (calc. on dried subst.): +22.5° - +24.0°<br>pH (2.5 %; $H_2O$): 5.5 - 6.5<br>Ammonium: max. 0.02 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.03 %<br>Fe: max. 0.001 %<br>Related substances (Ph. Eur.)<br>Each individual impurity: max. 0.1 %<br>Total impurities: max. 0.3 %<br>Related substances (USP)<br>Methionine sulfoxide: max. 0.1 %<br>N-Acetyl-D,L- methionine: max. 0.2 %<br>Any unspecified impurity: max. 0.1 %<br>Total unspecified impurities: max. 0.30 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-562-9 |
| CS: | 29304010 |

# L-Lysine Monohydrochloride (Ph. Eur., USP) pure, pharma grade

Assay (titr., calc. on dried subst.): 98.5 - 101.0 %

| | |
|---|---|
| CODE | **A1706** |
| CAS | **657-27-2** |
| MOLECULAR FORMULA | **$C_6H_{14}N_2O_2 \cdot HCl$** |
| MOLAR MASS | **182.65 g/mol** |

## Packs sizes (2)

| | CODE | PACKAGING SIZE |
|---|---|---|
|  | CODE<br>A1706,1000 | PACKAGING SIZE<br>1 kg |
|  | CODE<br>A1706,9025 | PACKAGING SIZE<br>25 kg |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 420 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A1706 |
| PRODUCT NAME: | L-Lysine Monohydrochloride (Ph. Eur., USP) pure, pharma grade |

| | |
|---|---|
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 98.5 - 101.0 %<br>α25°C/D; 8 %, 6 M HCl: +20.4° - +21.4°<br>Appearance of solution: passes test<br>Identity: passes test<br>Sulfated ash: max. 0.1 %<br>Loss on drying (3 h; 105°C): max. 0.4 %<br>α20°C/D; 8 %, HCl 250 g/L, calc. on dried subst.: +21.0° - +22.5°<br>Ammonium: max. 0.02 %<br>Chloride: 19.0 - 19.6 %<br>Sulfate: max. 0.03 %<br>Fe: max. 0.003 %<br>Ninhydrin positive substances (HPLC)<br>Each individual impurity: max. 0.2 %<br>Total impurities: max. 1.0 %<br>Ninhydrin positive substances (TLC)<br>Each individual impurity: max. 0.5 %<br>Total impurities: max. 2 %<br>Elemental impurities (according to ICH Q3D): passes test |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 211-519-9 |
| CS: | 29224100 |

# L-Valine (Ph. Eur., USP) pure, pharma grade

Assay (titr., calc. on dried subst.): 98.5 - 101.0 %

| | |
|---|---|
| CODE | **A1637** |
| CAS | **72-18-4** |
| MOLECULAR FORMULA | **$C_5H_{11}NO_2$** |
| MOLAR MASS | **117.15 g/mol** |

## Packs sizes (1)

| CODE | PACKAGING SIZE |
|---|---|
| CODE<br>A1637,1000 | PACKAGING SIZE<br>1 kg |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 85 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A1637 |
| PRODUCT NAME: | L-Valine (Ph. Eur., USP) pure, pharma grade |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 98.5 - 101.0 %<br>α20°C/D; 8 %, 250 g/L HCl, calc. on dried subst.: |

| | |
|---|---|
| | +26.5° - +29.0°<br>Appearance of solution: passes test<br>Identity: passes test<br>pH (5 %; $H_2O$): 5.5 - 7.0<br>Heavy metals (as Pb): max. 0.0015 %<br>Sulfated ash: max. 0.1 %<br>Loss on drying (3 h; 105°C): max. 0.3 %<br>α25°C/D; 8 %, 6 M HCl: +26.6° - +28.8°<br>Ammonium: max. 0.02 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.03 %<br>Fe: max. 0.001 %<br>Ninhydrin positive substances (HPLC)<br>Isoleucine: max. 0.4 %<br>Any other ninhydrin-pos. Subst.: max. 0.2 %<br>Total impurities: max. 1.0 %<br>Related subst. (TLC)<br>Any unspecified impurity: max. 0.2 %<br>Sum of other amino acids: max. 1.0 %<br>Isoleucine: max. 0.2 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-773-6 |
| CS: | 29224985 |

# L-Tyrosine (Ph. Eur., USP) pure, pharma grade

Assay (titr., calc. on dried subst.): 99.0 - 101.0 %

| | |
|---|---|
| CODE | **A1677** |
| CAS | **60-18-4** |
| MOLECULAR FORMULA | **$C_9H_{11}NO_3$** |
| MOLAR MASS | **181.19 g/mol** |

## Packs sizes (1)

| CODE | PACKAGING SIZE |
|---|---|
| CODE<br>A1677,1000 | PACKAGING SIZE<br>1 kg |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 0.4 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A1677 |
| PRODUCT NAME: | L-Tyrosine (Ph. Eur., USP) pure, pharma grade |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 99.0 - 101.0 %<br>α20°C/D; 5 %, 1 N HCl, calc. on dried subst.: -12.3° |

| | |
|---|---|
| | - -11.0°<br>Appearance of solution: passes test<br>Identity: passes test<br>Heavy metals (as Pb): max. 0.0015 %<br>Sulfated ash: max. 0.1 %<br>Loss on drying (3 h; 105°C): max. 0.3 %<br>α25°C/D; 5 %, 1 N HCl: -11.2° - -9.8°<br>Ammonium: max. 0.02 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.03 %<br>Fe: max. 0.001 %<br>Ninhydrin positive substances (HPLC)<br>Phenylalanine: max. 0.5 %<br>Any other ninhydrin-pos. Subst.: max. 0.2 %<br>Total impurities: max. 0.6 %<br>Ninhydrin positive substances (TLC)<br>Each individual impurity: max. 0.5 %<br>Total impurities: max. 2 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-460-4 |
| CS: | 29225000 |

# L-Tyrosine for cell culture

Assay (titr.): min. 99 %

| | |
|---|---|
| CODE | **A3401** |
| CAS | **60-18-4** |
| MOLECULAR FORMULA | **$C_9H_{11}NO_3$** |
| MOLAR MASS | **181.19 g/mol** |

## Packs sizes (1)

| | CODE | PACKAGING SIZE | |
|---|---|---|---|
|  | CODE<br>A3401,1000 | PACKAGING SIZE<br>1 kg | Product active until stock lasts. |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 0.4 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A3401 |
| PRODUCT NAME: | L-Tyrosine for cell culture |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Pyrogen test: passes test<br>Assay (titr.): min. 99 %<br>α20°C/D; 5 %, 1 N HCl, calc. on dried subst.: -12.3° - -11.0° |

| | |
|---|---|
| | Other amino acids: max. 0.5 %<br>Ammonium: max. 0.1 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.02 %<br>As: max. 0.0001 %<br>Fe: max. 0.001 %<br>Pb: max. 0.001 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-460-4 |
| CS: | 29225000 |

# L-Tryptophan (Ph. Eur., USP) pure, pharma grade

Assay (titr., calc. on dried subst.): 98.5 - 101.0 %

| | |
|---|---|
| CODE | **A1645** |
| CAS | **73-22-3** |
| MOLECULAR FORMULA | **$C_{11}H_{12}N_2O_2$** |
| MOLAR MASS | **204.23 g/mol** |

## Packs sizes (3)

| | CODE | PACKAGING SIZE |
|---|---|---|
|  | CODE<br>A1645,0100 | PACKAGING SIZE<br>100 g |
|  | CODE<br>A1645,0500 | PACKAGING SIZE<br>500 g |
|  | CODE<br>A1645,1000 | PACKAGING SIZE<br>1 kg |

## ⓘ Technical data

| | |
|---|---|
| SOLUBILITY: | 10 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |

| | |
|---|---|
| PRODUCT CODE: | A1645 |
| PRODUCT NAME: | L-Tryptophan (Ph. Eur., USP) pure, pharma grade |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 98.5 - 101.0 %<br>α20°C/D; 1 %, $H_2O$, calc. on dried subst.: -33.0° - -30.0°<br>Appearance of solution: passes test<br>Identity: passes test<br>pH (1 %; $H_2O$; 20°C): 5.5 - 7.0<br>Heavy metals (as Pb): max. 0.0015 %<br>Sulfated ash: max. 0.1 %<br>Loss on drying (3 h; 105°C): max. 0.3 %<br>α25°C/D; 1 %, $H_2O$: -32.8° - -29.4°<br>Ammonium: max. 0.02 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.03 %<br>Fe: max. 0.002 %<br>Ninhydrin positive substances (HPLC)<br>each individual impurity: max. 0.2 %<br>Total impurities: max. 0.5 %<br>Impurity A and other related subst. (HPLC)<br>Total impurity befor Tryptophan: max. 0.01 %<br>Total impurity afterTryptophan: max. 0.03 %<br>Impurity A: max. 0.001 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-795-6 |
| CS: | 29339980 |

# L-Threonine (Ph. Eur., USP) pure, pharma grade

Assay (titr., calc. on dried subst.): 99.0 - 101.0 %

| | |
|---|---|
| CODE | **A1419** |
| CAS | **72-19-5** |
| MOLECULAR FORMULA | **$C_4H_9NO_3$** |
| MOLAR MASS | **119.12 g/mol** |

## Packs sizes (1)

| CODE | PACKAGING SIZE |
|---|---|
| CODE<br>A1419,1000 | PACKAGING SIZE<br>1 kg |

## Technical data

| | |
|---|---|
| SOLUBILITY: | 90 g/L ($H_2O$) |
| PHYSICAL DESCRIPTION: | Solid |
| PRODUCT CODE: | A1419 |
| PRODUCT NAME: | L-Threonine (Ph. Eur., USP) pure, pharma grade |
| HEADLINE COMMENT: | • All amino acids from AppliChem are of non-animal origin! |
| SPECIFICATIONS: | Assay (titr., calc. on dried subst.): 99.0 - 101.0 %<br>α20°C/D; 6 %, $H_2O$, calc. on dried subst.: -27.6° - |

| | |
|---|---|
| | -29.0°<br>Appearance of solution: passes test<br>Identity: passes test<br>pH (2.5 %; $H_2O$): 5.0 - 6.5<br>Heavy metals (as Pb): max. 0.0015 %<br>Sulfated ash: max. 0.1 %<br>Loss on drying (3 h; 105°C): max. 0.2 %<br>α25°C/D; 6 %, $H_2O$: -26.7° - -29.1°<br>pH (5 %; $H_2O$): 5.0 - 6.5<br>Ammonium: max. 0.02 %<br>Chloride: max. 0.02 %<br>Sulfate: max. 0.03 %<br>Fe: max. 0.001 %<br>Ninhydrin positive substances (HPLC)<br>each individual impurity: max. 0.2 %<br>Total impurities: max. 0.5 %<br>Ninhydrin positive substances (TLC)<br>Each individual impurity: max. 0.5 %<br>Total impurities: max. 2 % |
| WGK: | 1 |
| STORAGE: | RT |
| EINECS: | 200-774-1 |
| CS: | 29225000 |

По вопросам продаж и поддержки обращайтесь:

Алматы (727)3454704
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
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
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