

# SAFETY DATA SHEET

Preparation Date: 7/2/15

Revision Date: 7/2/15

Revision Number: G1

## 1. IDENTIFICATION

### Product identifier

Product code: T1153  
Product Name: TYROSINE, USP

### Other means of identification

Synonyms: (-)-alpha-Amino-p-hydroxyhydrocinnamic acid  
(S)-Tyrosine  
(S)-alpha-Amino-4-hydroxybenzenepropanoic acid  
2-Amino-3-(4-hydroxyphenyl)propanoic acid, (S)-  
4-Hydroxy-L-phenylalanine  
Benzenepropanoic acid, alpha-amino-4-hydroxy-, (S)-  
L-2-Amino-3-p-hydroxyphenylpropanoic acid  
L-Phenylalanine, 4-hydroxy-  
L-Tyrosine  
L-p-Tyrosine  
Propanoic acid, 2-amino-3-(4-hydroxyphenyl)-, (S)-  
alpha-Amino-4-hydroxybenzenepropanoic acid, (S)-  
alpha-Amino-beta-(4-hydroxyphenyl)propionic acid  
alpha-Amino-p-hydroxyhydrocinnamic acid, (-)-  
L-beta-(p-Hydroxyphenyl)alanine  
p-Tyrosine  
Tyrosine, L-  
alpha-Amino-p-hydroxyhydrocinnamic acid  
CAS #: 60-18-4  
RTECS # YP2275600  
CI#: Not available

### Recommended use of the chemical and restrictions on use

Recommended use: Dietary supplement.  
Uses advised against: No information available

Supplier: Spectrum Chemical Mfg. Corp  
14422 South San Pedro St.  
Gardena, CA 90248  
(310) 516-8000

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number: Chemtrec 1-800-424-9300  
Contact Person: Martin LaBenz (West Coast)  
Contact Person: Ibad Tirmiz (East Coast)

## 2. HAZARDS IDENTIFICATION

### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|                                                  |             |
|--------------------------------------------------|-------------|
| Skin corrosion/irritation                        | Category 2  |
| Serious eye damage/eye irritation                | Category 2A |
| Specific target organ toxicity (single exposure) | Category 3  |

#### **Label elements**

##### **Warning**

##### **Hazard statements**

Causes skin irritation

Causes serious eye irritation

May cause respiratory irritation



##### **Hazards not otherwise classified (HNOC)**

Not Applicable

##### **Other hazards**

Not available

##### **Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling

Avoid breathing dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area

Wear protective gloves

Wear eye/face protection

##### **Precautionary Statements - Response**

*Specific treatment (see .? on this label)*

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

IF ON SKIN: Wash with plenty of soap and water

If skin irritation occurs: Get medical advice/attention

Take off contaminated clothing and wash before reuse

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

##### **Precautionary Statements - Storage**

Store in a well-ventilated place. Keep container tightly closed

Store locked up

##### **Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

| <b>Components</b>     | <b>CAS-No.</b> | <b>Weight %</b> | <b>Trade Secret</b> |
|-----------------------|----------------|-----------------|---------------------|
| L-Tyrosine<br>60-18-4 | 60-18-4        | 100             | *                   |

## 4. FIRST AID MEASURES

### First aid measures

#### **General Advice:**

Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126)

#### **Skin Contact:**

Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention. If skin irritation persists, call a physician.

#### **Eye Contact:**

Flush eye with water for 15 minutes. Get medical attention.

#### **Inhalation:**

Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

#### **Ingestion:**

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

### Most important symptoms and effects, both acute and delayed

#### **Symptoms**

Causes serious eye irritation. Causes skin irritation. May cause respiratory irritation .

### Indication of any immediate medical attention and special treatment needed

#### **Notes to Physician:**

Treat symptomatically

### Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

## 5. FIRE-FIGHTING MEASURES

### Extinguishing Media

#### **Suitable Extinguishing Media:**

Dry powder. Carbon dioxide (CO<sub>2</sub>). Water spray mist or foam.

#### **Unsuitable Extinguishing Media:**

No information available.

### Specific hazards arising from the chemical

#### **Hazardous Combustion Products:**

Carbon Monoxide. Carbon Dioxide. Nitrogen Oxides.

#### **Specific hazards:**

May be combustible at high temperatures

### Special Protective Actions for Firefighters

#### **Specific Methods:**

No information available.

#### **Special Protective Equipment for Firefighters:**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions:** Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Avoid dust formation. Remove all sources of ignition.

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

### Methods and material for containment and cleaning up

**Methods for containment** Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

**Methods for cleaning up** Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

#### Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. Keep away from incompatible materials.

#### Safe Handling Advice

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not breathe vapours/dust. Do not ingest. Handle in accordance with good industrial hygiene and safety practice.

### Conditions for safe storage, including any incompatibilities

#### Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

#### Incompatible Materials:

Strong oxidizing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### National occupational exposure limits

##### United States

| Components            | OSHA | NIOSH | ACGIH | AIHA WHEEL |
|-----------------------|------|-------|-------|------------|
| L-Tyrosine<br>60-18-4 | None | None  | None  | None       |

##### Canada

| Components            | Alberta | British Columbia | Ontario | Quebec |
|-----------------------|---------|------------------|---------|--------|
| L-Tyrosine<br>60-18-4 | None    | None             | None    | None   |

##### Australia and Mexico

| Components            | Australia | Mexico |
|-----------------------|-----------|--------|
| L-Tyrosine<br>60-18-4 | None      | None   |

## Appropriate engineering controls

**Engineering measures to reduce exposure:** Ensure adequate ventilation, especially in confined areas.

## Individual protection measures, such as personal protective equipment

### Personal Protective Equipment

|                                  |                                                                                                                                                                                      |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye protection:</b>           | Goggles or Safety glasses with side-shields                                                                                                                                          |
| <b>Skin and body protection:</b> | Chemical resistant apron. Long sleeved clothing. Gloves.                                                                                                                             |
| <b>Respiratory protection:</b>   | Effective dust mask. or. Wear respirator with dust filter.                                                                                                                           |
| <b>Hygiene measures:</b>         | Avoid contact with the skin and the eyes. Wash hands before breaks and immediately after handling the product. Wash off with soap and water. When using, do not eat, drink or smoke. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

|                                                                   |                                                                        |                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Physical state:</b><br>Solid.                                  | <b>Appearance:</b><br>Crystals. Crystalline powder. Crystalline solid. | <b>Color:</b><br>White.                                                                                                                                                                                                                       |
| <b>Odor:</b><br>Odorless.                                         | <b>Taste</b><br>No information available                               | <b>Molecular/Formula weight:</b><br>181.19 g/mole                                                                                                                                                                                             |
| <b>Formula:</b><br>C <sub>9</sub> H <sub>11</sub> NO <sub>3</sub> | <b>Flammability:</b><br>No information available                       | <b>Flash point (°C):</b><br>176                                                                                                                                                                                                               |
| <b>Flashpoint (°C/°F):</b><br>176°C (348.8°F)                     | <b>Flash Point Tested according to:</b><br>Closed cup                  | <b>Autoignition Temperature (°C/°F):</b><br>No information available                                                                                                                                                                          |
| <b>Lower Explosion Limit (%):</b><br>No information available     | <b>Upper Explosion Limit (%):</b><br>No information available          | <b>pH:</b><br>5.66 (at isoelectric point)                                                                                                                                                                                                     |
| <b>Melting point/range(°C/°F):</b><br>343-344°C (649-651.2°F)     | <b>Boiling point/range(°C/°F):</b><br>No information available         | <b>Decomposition temperature(°C/°F):</b><br>344°C (651.2°F)                                                                                                                                                                                   |
| <b>Bulk density:</b><br>No information available                  | <b>Density (g/cm<sup>3</sup>):</b><br>1.456                            | <b>Specific gravity:</b><br>No information available                                                                                                                                                                                          |
| <b>Vapor pressure @ 20°C (kPa):</b><br>No information available   | <b>Evaporation rate:</b><br>No information available                   | <b>Vapor density:</b><br>No information available                                                                                                                                                                                             |
| <b>VOC content (g/L):</b><br>No information available             | <b>Odor threshold (ppm):</b><br>No information available               | <b>Partition coefficient (n-octanol/water):</b><br>2.26                                                                                                                                                                                       |
| <b>Viscosity:</b><br>No information available                     | <b>Miscibility:</b><br>No information available                        | <b>Solubility:</b><br>Very slightly soluble in cold water<br>Solubility in water: 0.453 g/l @25°C<br>Insoluble in diethyl ether, acetone.<br>Insoluble in absolute alcohol.<br>Soluble alkaline solutions.<br>Slightly soluble in acetic acid |

## 10. STABILITY AND REACTIVITY

### Reactivity

Reactive with strong oxidizing agents

**Chemical stability**

**Stability:** Stable under recommended storage conditions

**Possibility of Hazardous Reactions:** Hazardous polymerization does not occur

**Conditions to avoid:** Heat. Ignition sources. Avoid dust formation. Incompatible materials.

**Incompatible Materials:** Strong oxidizing agents.

**Hazardous decomposition products:** Carbon monoxide. Carbon dioxide. Nitrogen oxides (NOx).

**Other Information**

**Corrosivity:** No information available

**Special Remarks on Corrosivity:** No information available

**11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure****Principal Routes of Exposure:**

Ingestion. Inhalation. Skin. Eyes.

**Acute Toxicity****Component Information**

*L-Tyrosine - 60-18-4*

**LD50/oral/rat** = No information available

**LD50/oral/mouse** = No information available

**LD50/dermal/rat** = No information available

**LD50/dermal/rabbit** = No information available

**LC50/inhalation/rat** = No information available

**LC50/inhalation/mouse** = No information available

**Other LD50 or LC50 information** = No information available

**Product Information**

**LD50/oral/rat =**

**VALUE- Acute Tox Oral** = No information available

**LD50/oral/mouse =**

**Value - Acute Tox Oral** = No information available

**LD50/dermal/rabbit**

**VALUE-Acute Tox Dermal** = No information available

**LD50/dermal/rat**

**VALUE -Acute Tox Dermal** = No information available

**LC50/inhalation/rat**

**VALUE-Vapor** = No information available

**VALUE-Gas** = No information available

**VALUE-Dust/Mist** = No information available

**LC50/Inhalation/mouse****VALUE-Vapor** = No information available**VALUE - Gas** = No information available**VALUE - Dust/Mist** = No information available**Symptoms****Skin Contact:** Causes skin irritation.**Eye Contact:** Causes serious eye irritation.**Inhalation** Irritating to respiratory system.**Ingestion** No information available. Health injuries are not known or expected under normal use.**Aspiration hazard** No information available**Delayed and immediate effects as well as chronic effects from short and long-term exposure****Chronic Toxicity** No information available**Sensitization:** No information available**Mutagenic Effects:** No information available**Carcinogenic effects:** Not considered carcinogenic

| Components | IARC       | ACGIH - Carcinogens | NTP        | OSHA HCS - Carcinogens | Australia - Prohibited Carcinogenic Substances | Australia - Notifiable Carcinogenic Substances |
|------------|------------|---------------------|------------|------------------------|------------------------------------------------|------------------------------------------------|
| L-Tyrosine | Not listed | Not listed          | Not listed | Not listed             | Not listed                                     | Not listed                                     |

**Reproductive toxicity** No data is available**Reproductive Effects:** No information available**Developmental Effects:** May cause adverse developmental effects based on animal data

May cause adverse effects on newborn based on animal data

**Teratogenic Effects:** No information available**Specific Target Organ Toxicity****STOT - single exposure** STOT - single exposure. Respiratory Tract.**STOT - repeated exposure** No information available**Target Organs:** No information available**12. ECOLOGICAL INFORMATION****Ecotoxicity****Ecotoxicity effects:** No data available.**Persistence and degradability:** No information available**Bioaccumulative potential:** No information available

**Mobility:** No information available

### 13. DISPOSAL CONSIDERATIONS

#### Disposal Methods

**Waste from residues / unused products:**

Waste must be disposed of in accordance with Federal, State and Local regulation.

**Contaminated packaging:**

Empty containers should be taken for local recycling, recovery or waste disposal

| Components | RCRA - F Series Wastes | RCRA - K Series Wastes | RCRA - P Series Wastes | RCRA - U Series Wastes |
|------------|------------------------|------------------------|------------------------|------------------------|
| L-Tyrosine | None                   | None                   | None                   | None                   |

### 14. TRANSPORT INFORMATION

**DOT**

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** None  
**ERG No:** No information available  
**Marine Pollutant** No data available  
**DOT RQ (lbs):** No information available

**TDG (Canada)**

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Description:** No information available

**ADR**

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Packing Group:** No information available  
**Subsidiary Risk:** No information available  
**Classification Code:** No information available  
**Description:** No information available  
**CEFIC Tremcard No:** No information available

**IMO / IMDG**

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Description:** No information available  
**IMDG Page:** No information available  
**Marine Pollutant** No information available

## 14. TRANSPORT INFORMATION

**MFAG:** No information available  
**Maximum Quantity:** No information available

### RID

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Classification Code:** No information available  
**Description:** No information available

### ICAO

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Description:** No information available

### IATA

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Description:** No information available

## 15. REGULATORY INFORMATION

### International Inventories

| Components        | U.S. TSCA | KOREA KECL       | Philippines (PICCS) | Japan ENCS       | CHINA   | Australia (AICS) | EINECS-No.        |
|-------------------|-----------|------------------|---------------------|------------------|---------|------------------|-------------------|
| <i>L-Tyrosine</i> | Present   | Present KE-01396 | Present             | Present (9)-1596 | Present | Present          | Present 200-460-4 |

### U.S. Regulations

*L-Tyrosine*

**FDA - Direct Food Additives** 21 CFR 172.320

**FDA - 21 CFR - Total Food Additives** 172.320

### California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

#### Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

#### Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

| Components        | Carcinogen | Developmental Toxicity | Male Reproductive Toxicity | Female Reproductive Toxicity: |
|-------------------|------------|------------------------|----------------------------|-------------------------------|
| <i>L-Tyrosine</i> | Not Listed | Not Listed             | Not Listed                 | Not Listed                    |

### CERCLA/SARA

| Components | CERCLA - Hazardous Substances and their Reportable Quantities | Section 302 Extremely Hazardous Substances and TPQs | Section 302 Extremely Hazardous Substances and RQs | Section 313 - Chemical Category | Section 313 - Reporting <i>de minimis</i> |
|------------|---------------------------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------|-------------------------------------------|
| L-Tyrosine | None                                                          | None                                                | None                                               | None                            | None                                      |

#### U.S. TSCA

| Components | TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS) | TSCA 8(d) -Health and Safety Reporting |
|------------|-----------------------------------------------------------------------|----------------------------------------|
| L-Tyrosine | Not Applicable                                                        | Not Applicable                         |

#### Canada

##### WHMIS hazard class:

Non-controlled

##### L-Tyrosine

Uncontrolled product according to WHMIS classification criteria

##### Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

#### Inventory

| Components | Canada (DSL) | Canada (NDSL) |
|------------|--------------|---------------|
| L-Tyrosine | Present      | Not Listed    |

| Components | CEPA Schedule I - Toxic Substances | CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting |
|------------|------------------------------------|-------------------------------------------------------------|
| L-Tyrosine | Not listed                         | Not listed                                                  |

#### EU Classification

##### R-phrase(s)

not determined (not applicable)

##### S -phrase(s)

none

| Components | Classification | Concentration Limits: | Safety Phrases |
|------------|----------------|-----------------------|----------------|
| L-Tyrosine |                | No information        |                |

The product is classified in accordance with Annex VI to Directive 67/548/EEC

##### Indication of danger:

None.

## 16. OTHER INFORMATION

**Preparation Date:** 7/2/15  
**Revision Date:** 7/2/15  
**Prepared by:** Sonia Owen

**Disclaimer:** All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

**End of Safety Data Sheet**