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**SECTION 1: COMPANY AND PRODUCT INFORMATION**

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**1.1 Product identifiers**

Product name : L-Tyrosine  
Product code : 42000024  
CAS number : 60-18-4  
Synonyms : (S)-2-Amino-3-(4-hydroxyphenyl)propionic acid  
3-(4-Hydroxyphenyl)-L-alanine

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : Laboratory chemicals, manufacture of substances

**1.3 Details of the supplier of the safety data sheet**

Address : Genelix International Inc, dba bioWORLD  
4150 Tuller Rd. Suite 228  
Dublin, OH 43017  
Email : tech@bio-world.com  
Phone : 614-792-8680

**1.4 Emergency telephone number**

CHEMTREC USA : 1-800-424-9300  
CHEMTREC International : +1-703-537-3887

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**SECTION 2: HAZARDS IDENTIFICATION**

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**2.1 Classification of substance or mixture**

Substance/mixture is not classified as hazardous.

**2.2 GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Not classified as hazardous under the GHS.

**2.3 Label elements and precautionary statements**

Pictogram :   
Signal word : Warning  
Hazard statement(s) : Not available  
Precautionary statement(s) : No applicable precautionary statements.

**2.4 Hazards not otherwise classified (HNOC) or not covered by GHS**

No unclassified hazards known.

**2.5 NFPA Rating**

Health hazard : 0

Fire hazard : 0

Reactivity hazard : 0

## 2.6 HMIS Rating

Health hazard : 0

Chronic health hazard : 0

Reactivity hazard : 0

Flammability : 0

Physical hazard : 0

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## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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### 3.1 Substances

Substance	CAS#	EC#	Concentration
L-Tyrosine M.F: C <sub>9</sub> H <sub>11</sub> NO <sub>3</sub> M.W: 181.19 g/mol	60-18-4	200-460-4	95-100%

### 3.2 Hazardous components & classification

Not available

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## SECTION 4: FIRST AID MEASURES

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### 4.1 Description of first aid measures

#### General advice

Move out of dangerous area.

#### In case of inhalation

If inhaled, move person to fresh air and monitor breathing. If not breathing, give artificial ventilation. Consult a physician if symptoms are severe or persistent.

#### In case of skin contact

Wash off with soap and plenty of water.

#### In case of eye contact

Flush eyes with water or eye wash solution as a precaution for 15 minutes. Consult a physician if symptoms are severe or persistent.

#### In case of ingestion

Never give anything by mouth to an unconscious person. Rinse mouth with water.

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

All known important symptoms are described in Section 2 and/or Section 11. No other important symptoms to report.

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

No special treatment indicated. Provide treatment in accordance with exhibited systems.

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## SECTION 5: FIREFIGHTING MEASURES

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### 5.1 Suitable extinguishing media

Water spray, alcohol-resistant foam, dry chemical, and carbon dioxide are suitable

## 5.2 Unsuitable extinguishing media

Not available

## 5.3 Special hazards arising from the substance

Carbon oxides, Nitrogen oxides (NO<sub>x</sub>)

## 5.4 Advice for firefighters

Wear protective gear, such as self-contained breathing apparatus, if necessary

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

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### 6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing vapors, mist or gas.

**For personal protection see section 8**

### 6.2 Environmental precautions

No special environmental precautions required.

### 6.3 Methods and material for containment and cleaning up

Sweep up and shovel. Keep in suitable, closed containers for disposal.

**For proper disposal see section 13**

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## SECTION 7: HANDLING AND STORAGE

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### 7.1 Precautions for safe handling

Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed.

**For precautions see section 2**

### 7.2 Conditions for safe storage, including any incompatibilities

Storage conditions : Store in cool, well ventilated area. Keep container tightly closed. Light Sensitive. Product is hygroscopic. Take precautions to avoid contact with atmospheric moisture. Store under Argon. Store at -20 °C

Incompatible materials : Strong oxidizing agents

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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### 8.1 Control parameters

Contains no substances with occupational exposure limit values.

### 8.2 Engineering controls

General industrial hygiene practice.

### 8.3 Personal protective equipment

Eye/face protection : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection	: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Body protection	: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Respiratory protection	: Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Control of environmental exposure	: No special environmental precautions required.
General hygiene considerations	: Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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### 9.1 Information on basic physical and chemical properties

a)	Appearance	: Form: Fine crystals and fragments, Color: white
b)	Physical states	: Solid
c)	Odor	: Not available
d)	Odor threshold	: Not available
e)	Melting point	: 343 °C (649 °F)
f)	Boiling point range	: Not available
g)	pH	: Not available
h)	Density	: Not available
i)	Flash point	: Not available
j)	Evaporation rate	: Not available
k)	Flammability	: Not available
l)	Upper/lower flammability or explosive limits:	: Not available
m)	Vapor pressure	: Not available
n)	Vapor density	: Not available
o)	Relative density	: Not available
p)	Water solubility	: 0.479 g/l at 25 °C (77 °F)
q)	Partition coefficient:n-octanol/water	: -2.259 at 25 °C (77 °F)
r)	Autoignition temperature	: Not available

- s) Decomposition temperature : Not available
- t) Kinematic viscosity : Not available
- u) Explosive properties : Not available
- v) Oxidizing properties : Not available
- w) Solubility in other solvents : Not available
- x) Surface tension : Not available

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## SECTION 10: STABILITY AND REACTIVITY

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### 10.1 Reactivity

No special reactivity is known. Non-reactive under normal use.

### 10.2 Chemical stability

Product is stable when stored as recommended.

### 10.3 Stability note(s)

No special or unusual instability known.

### 10.4 Polymerization

No known polymerization possible.

### 10.5 Possibility of hazardous reactions

No known hazardous reactions are possible.

### 10.6 Incompatible materials

Strong oxidizing agents

### 10.7 Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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## SECTION 11: TOXICOLOGICAL INFORMATION

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### 11.1 Acute toxicity

LD50 Oral : No toxicity data available.

LD50 Dermal : No toxicity data available.

LC50 Inhalation : No toxicity data available.

### 11.2 Skin corrosion/irritation

No skin/corrosion irritation data available.

### 11.3 Serious eye damage/eye irritation

No eye damage/irritation data available.

### 11.4 Respiratory or skin sensitization

No sensitization data available.

### 11.5 Germ cell mutagenicity

No mutagenicity data available.

### 11.6 Carcinogenicity

IARC	: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP	: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA	: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

#### **11.7 Reproductive toxicity**

No reproductive toxicity data available.

#### **11.8 Specific target organ toxicity – single exposure**

No specific organ toxicity data available.

#### **11.9 Specific target organ toxicity – repeated exposure**

No specific organ toxicity data available.

#### **11.10 Aspiration hazard**

No aspiration hazard data available.

#### **11.11 Additional Information**

Not available

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### **SECTION 12: ECOLOGICAL INFORMATION**

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#### **12.1 Toxicity**

No ecological toxicity data available.

#### **12.2 Aquatic toxicity**

No aquatic toxicity data available.

#### **12.3 Persistence and degradability**

No persistence/degradability data available.

#### **12.4 Bioaccumulative potential**

No bioaccumulation data available.

#### **12.5 Mobility in soil**

No soil mobility data available.

#### **12.6 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment is not required/was not conducted.

#### **12.7 Other adverse effect**

No other adverse effect data available.

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### **SECTION 13: DISPOSAL CONSIDERATIONS**

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#### **13.1 Product**

Offer surplus and non-recyclable solutions to a licensed disposal company.

### 13.2 Packaging

Dispose of as unused product.

### 13.3 Recommendation

Disposal must be made according to official regulations.

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## SECTION 14: TRANSPORTATION INFORMATION

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### 14.1 DOT (US)

Not dangerous goods

### 14.2 IMDG

Not dangerous goods

### 14.3 IATA

Not dangerous goods

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## SECTION 15: REGULATORY INFORMATION

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### 15.1 SARA

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### 15.2 Clean water act (CWA)

No chemicals are present in this product that are subject to regulation under the Clean Water Act.

### 15.3 Right to know components

Massachusetts : No chemicals are present which require disclosure under the Massachusetts Right to Know Act.

Pennsylvania : L-Tyrosine CAS-No 60-18-4

New Jersey : L-Tyrosine CAS-No 60-18-4

California : This product contains no chemicals which are known to the State of  
proposition 65 California to cause cancer, or birth defects or other reproductive harm.  
components

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## SECTION 16: OTHER INFORMATION

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### 16.1 Disclaimer

This product is offered by bioWORLD for research, laboratory or further manufacturing use. Not for human use or consumption. The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchant-ability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall bio-WORLD.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if bio-WORLD.com has been advised of the possibility of such damages.

### 16.2 Copyright

## **16.2 Preparation Information**

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