

# Safety Data Sheet



## 1. Identification of the Substance/Mixture and the Supplier

Supplier : National Institute of Advanced Industrial Science and Technology (AIST)  
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 Office in Charge : Reference Materials Office, Center for Quality Management of Metrology, National Metrology Institute of Japan  
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 Emergency Contact : Same as above

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Reference No. : 6012001

Identity of Substance/Mixture : Certified Reference Material NMIJ CRM 6012-a  
 L-Leucine  
 Recommended Use of the Chemical and Restriction on Use : This reference material can be used, in amino acid analysis, for preparation of standard solution, calibration of analysis equipment and validation of analysis method/equipment. Do not use this reference material for other purposes than testing/research.  
 This CRM is a reference material (specified in the Japanese Industrial Standard (JIS) Q 0030).

## 2. Hazards Identification

GHS classification : Not classifiable  
 GHS label element : -  
 Signal word : -  
 Hazard and toxicity: -  
 Other hazard and toxicity information : One of the essential amino acids, have very low toxicity, but harmful if inhaled or ingested in large amounts. Irritates eyes, throat and mucous membrane.  
 Precautionary statement : [Preventive measures]  
 Use appropriate protective equipment to avoid inhaling and coming in contact with eyes, skin and clothes  
 [Response]  
 If inhaled : Move to get a fresh air, cover with a blanket, etc. to keep warm and rest. Get medical assistance.  
 If on skin : Rinse with a large amount of water using soap.  
 Get medical assistance if necessary.  
 If in eyes : Immediately rinse the eyes with clean water and get medical treatment.  
 If swallowed: Induce vomiting by drinking water or salt solution.  
 Get medical assistance if there is any indication of abnormality.

[Storage]

Protect from light, in a clean desiccator at a normal temperature (15 °C to 25 °C).

[Disposal]

Outsource to a professional industrial waste disposal contractor licensed by the prefectural governor.

Hazardous and toxic properties not specified in the above are neither the object of the classification nor classifiable.

### 3. Composition/Information on Ingredients

Single or compound product	: Single product
Chemical name	: L-Leucine
Other name	: (S)-2-Amino-4-methylvaleric acid (S)-2-Amino-4-methylpentanoic acid
Content	: 99.9 %
Chemical formula or structural formula	: $(\text{CH}_3)_2\text{CHCH}_2\text{CH}(\text{NH}_2)\text{COOH}$
Molecular weight	: 131.17
Reference Number in Gazetted List in Japan	: Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : (9)–1632 Industrial Safety and Health Act : Published
CAS No.	: 61-90-5

### 4. First-aid Measures

If in eyes	: Rinse well with plenty of clean water. Get medical assistance.
If on skin	: Rinse with plenty of clean water using soap Get medical assistance if necessary.
If inhaled	: Move to get a fresh air, keep warm and rest. Get medical assistance.
If swallowed	: Drink a large amount of water and induce vomiting. Get medical assistance if there is any indication of abnormality.
Measures to be taken to protect the person applying first aid	: Use personal protective equipment.

### 5. Fire-fighting Measures

Extinguishing media	: Water (spray), powder, foam, carbon dioxide, dry sand.
Specific hazards at the time of fire	: Use appropriate protective equipment to protect from inhaling irritant or toxic gas formed at the time of fire
Specific extinguishing measures	: Remove fire sources and extinguish using appropriate agent compatible with the substance. Movable container should be

transferred to a safe place promptly. If impossible to transfer, use water spray to cool the periphery.

Protecting fire-fighting personnel : Extinguishing activities on windward side, avoid inhaling toxic gases. Use protective equipment such as air-breathing apparatus, etc. depending on the situation.

## 6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedure : If released indoor, ventilate well until the treatment is completed.  
Use appropriate protective equipment to protect the skin from contacting the airborne droplets and to avoid inhaling dust and gas

Environmental precaution : To prevent causing environmental impact, do not release the spilled material into sewer, rivers, etc. directly. Treat the contaminated waste water appropriately before discharged to the environment.

Recovery, neutralization : Recover and collect the spillage in an empty container. Wash out the spilled area with a large amount of water.

Measures to prevent secondary accident : Rope-off the leaked area and restrict access to the area to the authorized personnel only. Evacuate the people on the leeward and work on the windward side

## 7. Handling and Storage

### Handling

Technological countermeasures : Nothing in particular

Precautions : Do not handle the container roughly, no dropping, knocking down or dragging.  
Prevent leakage, spillage or overflow that causes fume to form.  
Keep the container airtight after using.  
Wash hands and face, etc. well and gargle after the handling.  
Eating, drinking or smoking only at the designated areas.  
Take off the gloves, and other contaminated protective equipment before leaving the handling area or entering the rest areas.

Precautions for safe handling : Use appropriate protective equipment to prevent inhaling, coming in contact with eyes, skin and clothing.  
Use local exhaust ventilation system when handling indoor.

### Storage

Appropriate condition : Protect from light , in a clean desiccator at a normal temperature (15 °C to 25 °C)

Technological countermeasures : Nothing in particular

Incompatibility hazards : No data available

Materials for safe packing : Glass

## 8. Exposure Control/Personal Protection

Administrative levels

Not established

Occupational exposure limit

•ACGIH TLV-TWA : Not established

•Japan Society for Occupational Health : Not established

Occupational Health

Recommended

Reference Value

•OSHA PEL TWA : Not established

Facility engineering

Ventilation, exhaust : Seal the source when handling indoor, or install local ventilation system  
Install safety shower, hand/eye washer, and indicate their location conspicuously.

Safety management, gas detection : -

Storage precaution : Protect from light, in a clean place at a normal temperature (15 °C to 25 °C).

Protective equipment

Respiratory organ : Dust-protective mask

Hand : Protective gloves

Eyes : Protective eyeglasses (if necessary, safety goggles)

Skin and body : Long-sleeved protective clothes

## 9. Physical and Chemical Properties

- Appearance, etc. : Powder
- Color : White
- Odor : No data
- pH : No data
- Melting point : 293 °C to 295 °C (Decomposition point)
- Boiling point : No data
- Flashing point : No data
- Explosive range : No data
- Vapor pressure : No data
- Relative vapor density(Air=1) : No data
- Specific gravity or bulk specific gravity : No data
- Solubility : Water soluble 2.27g(0 °C) and 2.19g(25 °C) per 100 g water. Slightly soluble in ethanol, insoluble in ether.
- n*-Octanol/water partition : No data

coefficient (Log Po/w)

•Auto-ignition temperature : No data

## 10. Stability and Reactivity

### ◇Stability

•Stable under normal condition. Sublimates at 145 °C to 148 °C

### ◇Reactivity

•No data available

### ◇Conditions to avoid

•Sunlight, heat

### ◇Hazardous decomposition products

•Carbon monoxide, nitrogen oxide

## 11. Toxicological Information

Acute toxicity : Abdominal cavity rats LD50:5379 mg/kg(RTECS)  
Subcutaneous rabbits LDLo:2620 mg/kg(RTECS)

## 12. Ecological Information

Degradability, concentration

•No data available

Bioaccumulation

•No data available

Ecotoxicity

•No data available

## 13. Disposal Considerations

Residue wastes : Incineration method  
Use an incinerator equipped with scrubber.  
The disposal should be according to the relevant laws and regulations as well as the ordinances of the local authorities.  
If impossible to treat the waste according to the above stated methods, outsource to a professional waste disposal contractor licensed by the local authorities.

Contaminated container and packaging : Clean the container completely before disposing of the contaminated container

## 14. Transport Information

UN number : Not applicable

UN classification : Not applicable

Material name : -

Marine pollutant : Not applicable

Precaution : Transfer with caution by avoiding direct sunlight and fire sources.  
Protect from leakage or spill due to fall or drop.

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## 15. Regulatory Information

- No applicable laws and regulations
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## 16. Other Information

### Others

The information in this document is not intended to be exhaustive and is based on currently available information and data. The measures given in this document are applicable only to normal handling conditions. When handling this reference material under special conditions etc., it is recommended to take safety measures appropriate to each specific application and context of use. This document is intended to provide information and not intended to guarantee anything in handling this reference material.

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