

## Safety Data Sheet



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

Supplier	: National Institute of Advanced Industrial Science and Technology (AIST)
Address	: 1-3-1 Kasumigaseki, Chiyoda, Tokyo, Japan
Office in Charge	: Reference Materials Office, Center for Quality Management of Metrology, National Metrology Institute of Japan
Person in Charge	: Certified Reference Material Staff
Telephone No.	: +81-29-861-4059 Telephone No. : +81-29-861-4059
Emergency Contact	: Same as above
	Prepared on : September 25, 2015
	Revised on : August 31, 2022
	ID Number : 6017002
Identity of Substance/Mixture	: Certified reference material: NMIJ CRM 6017-b L- Arginine
Recommended Use of the Chemical and Restriction on Use	: This reference material is primarily intended for use in calibrating the analytical instruments and preparation of the standard solution in amino acid analysis. It is also intended for controlling the precision of analysis, and confirming the validity of analytical methods or instruments. 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. Hazard Identification

GHS classification	: Not applicable
GHS label element	: -
Signal word	: -
Hazards	: -
Statement	
Other Hazards Statement	: Harmful if inhaled or orally ingested in high concentration. Causes irritation to eyes, throat and mucous membrane. Highly degradable
Precautionary Statement	: [Precaution] Use appropriate personal protective equipment so as to avoid inhalation and contact with eyes, skin and clothing. [Action] If inhaled: Remove victim to fresh air. Keep victim warm with blanket etc. and keep at rest. Get medical advice/attention. If on skin : Rinse away with plenty of soap and water. Get medical advice/attention as required. If in eyes : Rinse away with clean water immediately. Get medical treatment. If ingested : Make victim drink water or salt solution to induce

vomiting. Get medical advice/attention if there is any problem.

[Storage]

This material should be kept at 15 °C to 25 °C and shielded from light in a clean desiccator.

[Disposal]

Entrust disposal of this reference material to a professional waste disposal company licensed by prefectural governor.

The other hazards than the above do not result in classification or are not covered by the GHS.

### 3. Composition/Information on Ingredients

Substance/Mixture	:	Substance
Chemical Identity	:	L- Arginine
Synonym	:	L-(+)- Arginine, (S)-5-guanidino-2-aminopentanoic acid
Content	:	99.8 %
Chemical Formula or Structural Formula	:	$\text{H}_2\text{NC}(\text{:NH})\text{NH}(\text{CH}_2)_3\text{CH}(\text{NH}_2)\text{COOH}$
Molecular Weight	:	174.20
Content	:	99.8 % or over
Reference Number in Gazetted List in Japan	in	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : (2)-1307 Industrial Safety and Health Act : Published
CAS Number	:	74-79-3

### 4. First-Aid Measures

If in Eyes	:	Rinse away thoroughly with clean water immediately. Get medical advice/attention.
If on Skin	:	Rinse away with plenty of soap and water. Get medical advice/attention as required.
If Inhaled	:	Remove victim to fresh air. Keep victim warm and at rest. Get medical advice/attention.
If Ingested	:	Make victim drink water to induce vomiting. Get medical advice/attention if there is any problem.
Measures to be taken to protect the person applying first aid	:	Use personal protective equipment.

### 5. Fire-fighting Measures

Extinguishing Media	:	Water spray, Dry chemical extinguishing agent
Fire-Specific Hazards	:	As irritating or toxic gas is generated in the case of fire, use appropriate personal protective equipment to avoid breathing it.

- Specific Fire-Fighting Method : Eliminate ignition sources at the origin of a fire and put out fire by using extinguishing media. Remove movable containers promptly to a safe place. In the case of immovable containers, cool their surroundings with sprayed water.
- Protection of Fire-Fighters : Carry out fire-fighting from the windward in order to avoid breathing hazardous gas. Use personal protective equipment such as compressed air open-circuit self-contained breathing apparatus as necessary.

## 6. Accidental Release Measures

- Personal Precaution, Personal Protective Equipment and Emergency Procedures : Ventilate the affected areas thoroughly, if it is in an indoor environment, until the clean-up operation is completed. Use appropriate personal protective equipment during the operation to avoid skin contact of splash etc. and inhalation of dust and gas.
- Environmental Precautions : Take precautions to prevent spillage from draining into rivers etc. to adversely impact the environment. Make it sure to appropriately treat contaminated wastewater in order to prevent untreated wastewater from being released into the surrounding environment.
- Recovery and Neutralization : Collect spillage in empty containers. Rinse away the remains with plenty of water.
- Prevention of Secondary Disaster : Mark the restricted area with rope etc. to keep out unauthorized people. Carry out the clean-up operation from the windward and make people on the leeward side evacuate.

## 7. Handling and Storage

### Handling

- Engineering Precautions : Avoid contact with acidic substances as this reference material is alkali.  
Handle this reference material in dry ambience and use it promptly after opening package as it is highly hygroscopic. Strongly recommended to open package and use this reference material in an environment with relative humidity of about 70 % or less.
- Precautions : Avoid rough handling such as turning over, dropping, giving a shock to or dragging containers.  
Prevent spill, overflow and scattering, and avoid dust and vapor generation.  
Keep container tightly closed after using this reference material. Wash hands, face etc. thoroughly and gargle after handling this reference material.  
Restrict drinking, eating and smoking to a designated area.  
Do not bring gloves and other contaminated personal protective

	equipment into staff room.
Precautions for Safe Handling	: Use appropriate personal protective equipment to avoid inhalation and contact with eyes, skin and clothing. Use local ventilation system when using this reference material in an indoor workplace.
Storage	
Appropriate Storage Conditions	: This material should be kept at 15 °C to 25 °C and shielded from light in a clean desiccator.
Engineering Precautions	: Nothing special
Incompatible Substances	: No data available
Safe Container Packaging Material	: Polyethylene

## 8. Exposure Controls/Personal Protection

### Threshold Limit Value

Not specified

### Permissible Concentration

- ACGIH TLV-TWA : Not specified
- Value recommended by Japan Society for Occupational Health : Not specified
- OSHA PEL TWA : Not specified

### Engineering Controls

Ventilation/Exhaust : Keep container tightly closed and install local ventilation system when dust is generated.  
Install facilities to rinse eyes and to wash hands and body in the vicinity of a place handling this reference material and label them.

Safety control/  
Gas detection : -

Storage Precautions : This material should be kept at 15 °C to 25 °C and shielded from light in a clean desiccator.

### Personal Protective Equipment (PPE)

- Respiratory System : Dust protective mask
- Hands : Protective gloves
- Eyes : Eye protector (Goggle type as necessary)
- Skin and Body : Protective clothing with long sleeves

### Hygiene measure

Treat in accordance with rules on Industrial hygiene and Industrial safety.

## 9. Physical and Chemical Properties

- Appearance, etc. : Powder

- Color : White
- Odor : No data
- pH : Water-soluble substance is strongly basic
- Melting point : 207 °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 : 8.3 g dissolved in 100 g water at 0 °C and 40 g at 25 °C. Insoluble in organic solvent.
- *n*-Octanol/water partition coefficient (Log Po/w) : No data
- Auto-ignition temperature : No data

## 10. Stability and Reactivity

### ◇Stability

- Changed by light

### ◇Reactivity

- Strongly basic due to presence of guanidine group. Its aqueous solution absorbs carbon dioxide (CO<sub>2</sub>) in air.

### ◇Conditions to Avoid

- Sunlight, Heat, Air

### ◇Hazardous Decomposition Products

- Carbon monoxide (CO), Nitrogen oxide

## 11. Toxicological Information

No data available

## 12. Ecological Information

### Persistence and Degradability

- Degree of degradation: 60 % by BOD (METI Existing Chemical Substance Safety Check)
- Degree of degradation: 99 % by TOC (METI Existing Chemical Substance Safety Check)

### Bioaccumulative Potential

- No data available

### Ecotoxicity

- No data available

## 13. Disposal Considerations

- Residual Waste : Incineration method  
Incinerate in an incinerator equipped with scrubber.  
Dispose of this reference material in accordance with applicable legislation and local government ordinance.  
When the above-mentioned treatments are not possible, entrust disposal of residual waste to a professional waste disposal company licensed by prefectural governor.
- Contaminated Container and Package : Dispose of containers after thoroughly removing their contents.
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#### 14. Transport Information

- UN Number : Not applicable  
UN : Not applicable  
Classification  
Shipping Name : -  
Marine : Not applicable  
Pollutant  
Precautions : Transport this reference material carefully while keeping it away from direct sunlight and fire and preventing accidental release due to falling, overturning, etc.
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#### 15. Regulatory Information

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

##### Other

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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