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 Fax No. : +81-29-861-4009
Emergency Contact	:	Same as above
		Prepared on : November 9, 2010
		Revised on : August 31, 2022
		ID Number : 6011001
Name of chemical	:	Certified reference material NMIJ CRM 6011-a L-Alanine
Recommended applications and limitations of use	:	This reference material may be used for calibration of analysis equipment and evaluation of analytical reagents for amino acid analysis, as well as for precision management of analysis equipment and validation of analytical methods and 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	:	Classification not possible
GHS-labeling element	:	-
Signal word	:	-
Hazard and toxicity information	:	-
Other toxicity information	:	This compound is one of the essential amino acids and has almost no toxicity. Harmful if inhaled or ingested in large amounts. May cause irritation of eyes, throat, and mucous membranes.
Cautionary statement	:	[Safety measures] Wear appropriate protective equipment to avoid inhalation, or contact with eyes, skin, or clothing. [Emergency measures] Inhalation: Remove the exposed person to fresh air, wrap them up in a blanket to keep warm and rest. Provide them medical attention. Skin contact: Wash with plenty of water and soap. Seek medical

attention if necessary.
Eye contact: Flush thoroughly with plenty of clean water. Seek medical attention.
Ingestion: Induce vomiting by giving water or salted water. Get medical attention in case of abnormalities.
[Storage]
Keep out of sunlight and store in a clean desiccator at room temperature (approximately 15 °C to 25 °C)
[Disposal]
Follow the related regulations and ordinances of the local government.
Use a waste-treatment firm certified by prefectural governor.

Classification is impossible or not applicable for hazards not mentioned above.

3. Composition/Information on Ingredients

Single substance or compound	:	Single substance
Chemical name	:	L-Alanine
Synonyms	:	(2*S*)-2-aminopropionic acid, L-2-aminopropanic acid
Concentration	:	99.9 % (kg/kg)
Chemical or structural formula	:	$CH_3CH(NH_2)COOH$
Molecular weight	:	89.09
Reference Number in Gazetted List in Japan	:	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : (9)-1553 Industrial Safety and Health Act : Published
CAS number	:	56-41-7
Hazardous component	:	None

4. First-aid Measures

Eye contact	:	Flush immediately with plenty of fresh water. Seek medical attention.
Skin contact	:	Wash with plenty of water and soap. Seek medical attention if necessary.
Inhalation	:	Seek fresh air and keep warm and rest. Seek medical attention.
Ingestion	:	Induce vomiting by giving plenty of water. Seek medical attention in case of abnormalities.
Estimated acute and late symptom	:	-
Most important symptoms and effects	:	-
Measures to be taken to protect the person	:	Use personal protective equipment.

applying first aid

5. Fire-fighting Measures

Extinguishing media	:	Water, dry extinguishing agents
Specific hazards with regard to firefighting	:	Irritant or toxic gas may be generated in the event of fire. Wear appropriate protective equipment to prevent inhalation of smoke when extinguishing fires.
Specific methods of firefighting	:	Eliminate the origin of fire and put the fire out with extinguishing media. If possible, move containers to a safe place. If not, cool the peripheral areas with water spray.
Protection for firefighters	:	Work from the windward side to prevent the inhalation of toxic gas. Wear protective equipment such as respirators, according to the situation.

6. Accidental Release Measures

Personal precautions	:	Promptly remove all potential ignition sources from peripheral areas. In case of ignition, prepare the equipment for firefighting.
Protective equipment and emergency measures	:	When accidental release takes place indoors, thoroughly clear the air until the emergency measures are complete. Before the operation, wear appropriate protective equipment to protect the skin from droplets and to prevent inhalation of dust and gas.
Environmental precautions	:	Prevent the released product from being drained into a river or other such area that may impact the environment. Prevent the polluted discharge from being drained into the environment without being processed properly.
Recovery and neutralization	:	Collect spills in an empty container. Wash and clean the area with plenty of water.
Prevention of second accident	:	Surround the area by a rope, etc., to prevent unauthorized people from entering it. Work from the windward side and evacuate people to the leeward side.

7. Handling and Storage

Handling

Technical measures	:	Avoid contact with strong oxidizing agents.
Local ventilation and general ventilation	:	In case dust is generated, seal the source, and provide local exhaust ventilation.
Precautions for safe handling	:	Avoid rough handling such as dropping, shocking, dragging, or otherwise agitating the container. Do not cause the substance to leak or overflow, and prevent steam from being generated. Seal the container after use. Wash hands, face, and other necessary parts thoroughly, and gargle after handling.

Do not eat, drink, or smoke in places other than the designated areas.
Do not bring gloves and other contaminated protective equipment into the break area.
Only authorized people are allowed in the handling area.
Wear appropriate protective equipment to prevent inhalation and contact with eyes, skin, or clothing.
When handling indoors, provide local exhaust ventilation.

Storage

Appropriate storage conditions	:	Keep out of sunlight and store in a clean desiccator at room temperature (approximately 15 °C to 25 °C)
Incompatible materials	:	Avoid storing with oxidizing agents and materials with strong oxidizing properties.
Safe packaging materials	:	Polyethylene, polypropylene

8. Exposure Controls/Personal Protection

Threshold limit values

Standard control concentration	:	N/A

Permissible Concentration

・ACGIH TLV-TWA	:	N/A
・Value recommended by Japanese Society of Occupational Health	:	N/A
・OSHA PEL TWA	:	N/A

Engineering controls

Ventilation and emission	:	In case dust is generated, seal the source, and provide local exhaust ventilation. Set up equipment near the appropriate area to wash eyes and body and indicate its location.
Safety management and gas detection	:	-
Storage precautions	:	Keep out of sunlight in a clean place at room temperature (approximately 15 °C to 25 °C).

Protective equipment

Respiratory protection	:	Dust mask
Hand protection	:	Protective gloves
Eye protection	:	Protective glasses (goggle-type if necessary)
Skin and body protection	:	Long-sleeved protective clothing

9. Physical and Chemical Properties

・Appearance, etc.	:	Powder
・Color	:	White
・Odor	:	No data

・pH	:	No data
・Melting point	:	297 °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	:	12.73 g (0 °C) and 16.51 g (25 °C) in 100 g of water. Insoluble in organic solvents such as ethanol and ether.
・*n*-Octanol/water partition coefficient (Log Po/w)	:	No data
・Auto-ignition temperature	:	No data

10. Stability and Reactivity

◇Stability
・Stable under normal conditions
◇Reactivity
・May react with strong oxidizing agents.
◇Conditions to avoid
・Sunlight, heat
◇Hazardous decomposition products
・Carbon monoxide, nitrogen oxide

11. Toxicological Information

No data

12. Ecological Information

Degradability/Concentration
・No data
Bioaccumulation
・No data
Ecotoxicity
・No data

13. Disposal Considerations

Residues : Incineration
Incinerate in an incinerator with a scrubber system.
Dispose of the contents and container in accordance with related regulations and ordinances of the local government.
If disposal according to the above method is not possible,

		use a waste-treatment firm certified by prefectural governor.
Contaminated containers and packaging	:	To dispose of an empty container, completely remove the contents.

14. Transport Information

UN Dangerous Goods Number	:	Not applicable
UN Classification	:	-
Product name	:	-
Packing group	:	-
ICAO/IATA	:	-
Marine pollutant	:	Not applicable
Matters to be attended to	:	Avoid direct sunlight. Prevent leakage and fire caused by shock or agitation to the container, and transport with caution.

15. Regulatory Information

・No applicable laws and regulations

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.