

Safety Data Sheet



1. Identification of the Substance/Mixture and of 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

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Identity of Substance/Mixture : Certified reference material: NMIJ CRM 8007-a
 Fine Alumina Powder for Fine Ceramics –High Purity
 Recommended Use of the Chemical and Restriction on Use : This reference material can be used to control the precision of analysis or to confirm the validity of analytical methods or instruments during the quantitative determination of trace elements in alumina. Do not use this reference material for other purposes than testing/research.

2. Hazards Identification

GHS Classification : Specific target organ toxicity/systemic toxicity (Single exposure) : Hazard Category 3 (Respiratory tract irritation)
 Specific target organ toxicity/systemic toxicity (Repeated exposure) : Hazard Category 1 (Lungs; Inhalation)

GHS Label Element:



Signal Word : Danger
 Hazards Statement: May cause respiratory irritation
 Causes damages to organs (lungs) through prolonged or repeated exposure (inhalation)
 Other Hazards : Eye irritation
 Precautionary Statement : [Precaution]
 Do not drink, eat or smoke while handling this reference material.
 Use this reference material in an outdoor or well-ventilated environment.
 Avoid inhalation of dust/mist.
 Wash hands thoroughly after handling this reference material.
 [Action]

Eye contact: Flush eyes thoroughly with clean water. Seek medical examination/treatment if eye irritation is prolonged.

When feeling sick: Seek medical examination/treatment.

When inhaling this reference material: Move the person to fresh air and make him/her rest in an easy-to-breathe position.

[Storage]

Keep this reference material away from direct sunlight, heat and moisture and store it in a clean environment at room temperature.

Keep it hermetically sealed after opening containers.

[Disposal]

Entrust disposal of this reference material/containers to a professional waste disposal company licensed by national/prefectural/local government.

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	: Aluminum oxide
Chemical Formula or Structural Formula	: Al_2O_3
Molecular Weight	: 101.96
CAS number	: 1344-28-1
Content	: About 99.5% or more
Reference Number in Gazetted List in Japan	: Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : (1)-23 Industrial Safety and Health Act : Published
Hazardous Ingredient	: Aluminum oxide

4. First-aid Measures

Eye Contact	: Flush eyes thoroughly with clean water. Seek medical examination/treatment.
Skin Contact	: Flush exposed areas thoroughly with large amount of water and soap. Seek medical examination/treatment when skin displays symptoms.
Inhalation	: Move the person to fresh air and make him/her gargle thoroughly. Seek medical examination/treatment when symptoms appear.
Ingestion	: Flush mouth thoroughly with water. Make the person vomit, if possible. Immediately seek medical attention.
Measures to be taken to protect the person applying first aid	: Use personal protective equipment.

5. Fire-fighting Measures

Extinguishing Media	: Use extinguishing media appropriate to the surroundings as this reference material is nonflammable.
Fire-Specific Hazards	: Nothing in particular
Specific Fire-Fighting Method	: Move movable containers immediately to a safe place. In the case of immovable containers, cool their surroundings with

Protection of Fire-Fighters : sprayed water.
: Use appropriate personal protective equipment (gloves, fireproof clothing, mask and eye protector) in the fire-fighting operation.

6. Accidental Release Measures

Personal Precaution : Ventilate the affected areas thoroughly, if it is in an indoor environment, until the clean-up operation is completed. Mark the restricted area with rope etc. to keep out unauthorized people.
Personal Protective Equipment and Emergency Procedures : Use appropriate personal protective equipment during the clean-up operation to prevent the droplet etc. from adhering to skin and avoid inhalation of dust and gas. Carry out the clean-up operation from the windward and make people on the leeward side evacuate.

Environmental Precautions : Take precautions to prevent the spilled aluminum oxide from draining into rivers 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 spilled aluminum oxide in empty containers.

Secondary Disaster Prevention Measures : -

7. Handling and Storage

Handling

Engineering Precautions : Nothing in particular

Local and General Ventilation : Use ventilation system if dust etc. is emitted.

Precautions for Safe Handling : Avoid rough handling such as turning over, dropping, giving a shock to or dragging a container.
Prevent spill, overflow and scattering, and avoid generation of dust and vapor.
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.
Make a place handling this reference material a restricted area to keep out unauthorized people.

Storage

Appropriate Storage Conditions : Keep this reference material away from direct sunlight, heat and moisture and store it in a clean environment at room temperature. Keep it hermetically sealed after opening containers.

Safe Container Packaging Material : Glass, Polypropylene

※See the certificate for the details about appropriate storage conditions and instructions for use of this reference material.

8. Exposure Controls/Personal Protection

Cut-Off Value/Concentration Limit

Not specified

Permissible Concentration

- ACGIH TLV-TWA : 10 mg/m³ (total dust)
- Value recommended by Japan Society for Occupational Health (2000) : Not specified

Engineering Controls

- If dust is emitted, its source must be hermetically sealed and local ventilation system must be installed.
- A facility to irrigate eyes and wash body must be installed and labeled in the vicinity of a place handling this reference material.

Personal Protection Equipment (PPE)

- PPE for Respiratory System : Dust protective mask
- PPE for Hands : Protective gloves
- PPE for Eyes : Eye protector
- PPE for Skin and Body : Protective clothing

9. Physical and Chemical Properties

- Appearance, etc. : Powder
- Color : White
- Odor : No data
- pH : No data
- Melting point : 2054 °C
- Boiling point : 3000 °C
- 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 : 4.0 g/cm³
- Solubility : Insoluble in water and acid
- *n*-Octanol/water partition coefficient (Log Po/w) : No data
- Auto-ignition temperature : No data

10. Stability and Reactivity

- ◇ Stability
 - Stable in normal conditions
- ◇ Reactivity
 - No data available
- ◇ Conditions to Avoid
 - Avoid emission and diffusion of dust
- ◇ Hazardous Decomposition Products
 - No data available

11. Toxicological Information

Acute Toxicity	Oral Rat LD50 > 5000 mg/kg (IUCLID(2000))
Skin Corrosion/Irritation	No data available
Serious Eye Damage/Eye Irritation	No data available
Germ Cell Mutagenicity	No data available
Carcinogenicity	ACGIH:A4 (Not classifiable as a human carcinogen)
Specific Target Organ Toxicity/Systemic Toxicity (Single Exposure)	Upper respiratory tract irritation is referred to in ICSC (2000).
Specific Target Organ Toxicity/Systemic Toxicity (Repeated Exposure)	It is reported in EHC (1997) that occupational exposure to aluminum oxide resulted in fibrosis in lungs.

12. Ecological Information

Persistence and Degradability	<ul style="list-style-type: none"> • No data available
Bioaccumulative Potential	<ul style="list-style-type: none"> • No data available
Ecotoxicity	<ul style="list-style-type: none"> • No data available

13. Disposal Considerations

- Dispose this reference material in accordance with applicable legislation and local government ordinance.
- Dispose a container after thoroughly removing its contents.

14. Transport Information

UN Number	: Not applicable
UN Classification	: Not applicable
UN Proper Shipping Name	: -
Packing Group	: -
ICAO/IATA	: -
Marine Pollutant	: Not applicable
Precautions	: Transport this reference material carefully while keeping it away from direct sunlight and ensuring that the containers are not leaking. Load the containers in a way to prevent overturning, falling, collapsing and damages.

15. Applicable Legislation

- ◇ The Industrial Safety and Health Law
 - Article 57-2 (Enforcement Order: Article 18) Hazardous substance whose name, etc. must be labeled.
 - Article 57-2 (Enforcement Order: Article 18-2) Hazardous substance whose name, etc. must be notified No.189

16. Regulatory 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.
