



SAFETY DATA SHEET

1. Identification

Product identifier	ALUMINA
Other means of identification	
SDS No	CE-US902EN
Recommended use	Industrial chemical.
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Manufacturer	SHOWA DENKO K.K. Marketing Department 2, Ceramics Division 13-9 Shiba Daimon 1-Chome Minato-Ku Tokyo 105-8518, Japan
Address	
Telephone	+81-3-5470-3434
Importer/Distributor	Showa Denko America, Inc. 420 Lexington Avenue, Suite 2335A, New York, NY 10170, U.S.A.
Address	
Telephone	+1 212 370 0033 (Monday – Friday 9:00-17:00)
E-mail	support@showadenko.us
Emergency phone number	U.S.A.: +1 212 370 0033 (Monday – Friday, 9:00–17:00) Japan: +81-76-437-9201 (Manufacturing Department, Toyama Plant, Showa Denko Ceramics Co.,Ltd)
Transportation emergency	CHEMTREC, USA (Customer number:CCN20146) U.S.A. Domestic call:1-800-424-9300, International call: +1-703-527-3887

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Specific target organ toxicity, single exposure Category 3 respiratory tract irritation Specific target organ toxicity, repeated exposure Category 1 (Lung)
OSHA defined hazards	Not classified.
Label elements	



Signal word	Danger
Hazard statement	May cause respiratory irritation. Causes damage to organs (Lung) through prolonged or repeated exposure by inhalation.
Precautionary statement	
Prevention	Use only outdoors or in a well-ventilated area. Do not breathe dust. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.
Response	If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
Aluminum oxide (Al ₂ O ₃)		1344-28-1	99*

Composition comments * Typical value
All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort occurs.

Skin contact Flush skin thoroughly with water. Get medical attention if irritation develops and persists.

Eye contact Dust in the eyes: Do not rub eyes. Immediately flush eye(s) with plenty of water. Remove contact lenses, if present and easy to do. Get medical attention if irritation persists after washing.

Ingestion Rinse mouth thoroughly if dust is ingested. Never give anything by mouth to an unconscious person. Only induce vomiting at the instruction of medical personnel. Get medical attention if any discomfort continues.

Most important symptoms/effects, acute and delayed Dust may irritate the eyes and the respiratory system.

Indication of immediate medical attention and special treatment needed Treat symptomatically.

General information First aid personnel must be aware of own risk during rescue.

5. Fire-fighting measures

Suitable extinguishing media Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media None.

Specific hazards arising from the chemical None known.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

Fire fighting equipment/instructions Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards This material will not burn.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Ensure adequate ventilation. Avoid inhalation of dust and contact with skin and eyes. Wear suitable protective clothing. See Section 8 of the SDS for Personal Protective Equipment.

Methods and materials for containment and cleaning up Avoid dust formation. Use approved industrial vacuum cleaner for removal.

Environmental precautions Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling Provide adequate ventilation. Local exhaust is recommended. Avoid inhalation of dust and contact with skin and eyes. Wear suitable protective clothing. Use work methods which minimize dust production. Keep the workplace clean. Do not eat, drink or smoke when using the product.

Conditions for safe storage, including any incompatibilities Provide adequate ventilation. Store in tightly closed original container in a well-ventilated place.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Material	Type	Value	Form
Aluminum oxide (Al ₂ O ₃) (CAS 1344-28-1)	PEL	5 mg/m ³	Respirable fraction.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Material	Type	Value	Form
		15 mg/m ³	Total dust.

US. ACGIH Threshold Limit Values

Material	Type	Value	Form
Aluminum oxide (Al ₂ O ₃) (CAS 1344-28-1)	TWA	1 mg/m ³	Respirable fraction.

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of dust. Provide easy access to water supply and eye wash facilities.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear dust-resistant safety goggles where there is danger of eye contact.
Skin protection	
Hand protection	Risk of contact: Wear protective gloves.
Other	Wear suitable protective clothing.
Respiratory protection	Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.
Thermal hazards	When material is heated, wear gloves to protect against thermal burns.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Solid.
Form	Powder. Grains.
Color	White.
Odor	Odorless.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	3727.4 °F (2053 °C)
Initial boiling point and boiling range	5432 °F (3000 °C)
Flash point	Not available.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	3.98
Solubility(ies)	
Solubility (water)	Insoluble in water.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.

Viscosity Not applicable.

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability Stable at normal conditions.
Possibility of hazardous reactions Will not occur.
Conditions to avoid Avoid dust formation.
Incompatible materials None known.
Hazardous decomposition products None known.

11. Toxicological information

Information on likely routes of exposure

Inhalation Dust may irritate respiratory system. Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.
Skin contact Dust may irritate skin.
Eye contact Dust may irritate the eyes.
Ingestion May cause discomfort if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Dust may irritate the eyes and the respiratory system.

Information on toxicological effects

Acute toxicity May cause discomfort if swallowed.

Product	Species	Test Results
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Aluminum oxide (Al₂O₃) (CAS 1344-28-1)

Acute

Oral

LD50

Rat

> 5000 mg/kg

Skin corrosion/irritation Dust may irritate skin.

Serious eye damage/eye irritation Dust may irritate the eyes. May cause redness and pain.

Respiratory or skin sensitization

Respiratory sensitization No data available.

Skin sensitization No data available.

Germ cell mutagenicity Ames test: Negative.

Carcinogenicity ACGIH Group A4 (Not classifiable as a human carcinogen)

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity No data available.

Specific target organ toxicity - single exposure May cause respiratory irritation.

Specific target organ toxicity - repeated exposure Causes damage to the following organs through prolonged or repeated exposure: Lung (Inhalation).

Aspiration hazard No data available.

Chronic effects Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.

12. Ecological information

Ecotoxicity The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Product	Species	Test Results
Aluminum oxide (Al ₂ O ₃) (CAS 1344-28-1)		
Aquatic		
Algae	NOEC	Green algae (Selenastrum capricornutum) > 100 mg/l, 72 hours
Crustacea	NOEC	Daphnia magna > 100 mg/l, 48 hours
Fish	NOEC	Salmo trutta > 100 mg/l, 96 hours
Persistence and degradability	No data available.	
Bioaccumulative potential	No data available.	
Mobility in soil	Not available.	
Mobility in general	The product is insoluble in water and will sediment in water systems.	
Other adverse effects	No data available.	

13. Disposal considerations

Disposal instructions	Dispose of in accordance with local regulations. Avoid discharge into water courses or onto the ground.
Hazardous waste code	Not regulated.
Waste from residues / unused products	Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.
Contaminated packaging	Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not available.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not listed.
CERCLA Hazardous Substance List (40 CFR 302.4)	Not listed.
Superfund Amendments and Reauthorization Act of 1986 (SARA)	
hazard categories, revised in 2012	Specific target organ toxicity (single or repeated exposure) Yes
SARA 302 Extremely hazardous substance	Not listed.
SARA 311/312 Hazardous chemical	Yes

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Aluminum oxide (Al₂O₃) (CAS 1344-28-1)

US. New Jersey Worker and Community Right-to-Know Act

Aluminum oxide (Al₂O₃) (CAS 1344-28-1)

US. Pennsylvania Worker and Community Right-to-Know Law

Aluminum oxide (Al₂O₃) (CAS 1344-28-1)

US. Rhode Island RTK

Aluminum oxide (Al₂O₃) (CAS 1344-28-1)

US. California Proposition 65

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 1-May-2015

Revision date 23-July-2018

Version # 02

NFPA ratings



References

IUCLID (2000)
International Chemical Safety Cards (ICSC) (2000)
ACGIH Threshold Limit Values (2011)

Disclaimer

The information in this SDS was obtained from sources which we believe are reliable, but no warranty or representation as to its accuracy or completeness is hereby given. Users should consider the information herein only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal, the safety and health of employees and customers and the protection of the environment.