

Issuing Date No data available

Revision Date 08-Nov-2018

Revision Number 2

Japan / English

1. PRODUCT AND COMPANY IDENTIFICATION**Product identifier**

Product Name Aluminum Oxide Powder

Product Code(s) 40-6425-400-080, 40-6430-600-080, 40-6603-030-080, 40-6605-050-080,
40-6609-095-080, 40-6612-125-080

(M)SDS Number 1339775_J

Other means of identification

Synonyms No information available

Registration Number(s) No information available

Recommended use of the chemical and restrictions on use

Recommended Use Laboratory Use Only

Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer Buehler

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Global Access Code: 334545

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Middle East/Africa: +1 760 476 3959 Europe: +1 760 476 3961

Japan: +81 36 8908677

2. HAZARDS IDENTIFICATION**GHS Classification**

Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 2

Specific target organ toxicity (single exposure)	Category 3
Category 3 Respiratory irritation.	
Specific target organ toxicity (repeated exposure)	Category 2
Category 1 Lungs	
Category 2 Respiratory system.	

Label elements

Signal word

Danger

Hazard statements

H318 - Causes serious eye damage

H351 - Suspected of causing cancer

H335 - May cause respiratory irritation

H372 - Causes damage to the following organs through prolonged or repeated exposure if inhaled: Lungs.

H373 - May cause damage to the following organs through prolonged or repeated exposure: Respiratory system.

Precautionary Statements - Prevention

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Wear protective gloves/protective clothing/eye protection/face protection

Wash face, hands and any exposed skin thoroughly after handling

Use only outdoors or in a well-ventilated area

Do not breathe dust/fume/gas/mist/vapors/spray

Do not eat, drink or smoke when using this product

Precautionary Statements - Response

IF exposed or concerned: Call a POISON CENTER or doctor

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Immediately call a POISON CENTER or doctor

IF INHALED: Remove person to fresh air and keep comfortable for breathing

Call a POISON CENTER or doctor if you feel unwell

Precautionary Statements - Storage

Store locked up

Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other hazards

Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS**Substance**

Not applicable

Mixture

Chemical name	Weight-%	ENCS - Japan Existing and New Chemical Substances	ISHL No.	CAS-No

Aluminum oxide	90 - 100%	(1)-23	Present	1344-28-1
Titanium dioxide	0 - 10%	(5)-5225,(1)-558	Present	13463-67-7
Iron oxide	0 - 10%	(5)-5188,(1)-357	Present	1309-37-1
Magnesium oxide	< 0.5%	(1)-465	Present	1309-48-4
Calcium oxide	< 0.6%	(1)-189	Present	1305-78-8

Pollutant Release and Transfer Registry (PRTR)

Not applicable.

Industrial Safety and Health Law

ISHL Notifiable Substances - information (safety data sheet) to be supplied; Industrial Safety and Health Law enforcement order Table 9 (related to Industrial Safety and Health Law article 57-2 and ISHL Ordinance Article 34-2-4)

Chemical name	ISHL Notifiable Substances	Threshold Values (%)
Aluminum oxide 1344-28-1	ISHL Notifiable Substances	1
Titanium dioxide 13463-67-7	ISHL Notifiable Substances	0.1
Iron oxide 1309-37-1	ISHL Notifiable Substances	1
Calcium oxide 1305-78-8	ISHL Notifiable Substances	1

Poisonous and Deleterious Substances Control Law Not applicable

4. FIRST AID MEASURES

First aid measures**General advice**

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention.

Inhalation

Remove to fresh air. Get medical attention immediately if symptoms occur. IF exposed or concerned: Get medical advice/attention.

Eye contact

Get immediate medical advice/attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.

Skin contact

Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

Ingestion

Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.

Symptoms

Burning sensation.

**Self-protection of the first aider
Note to physicians**

Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8). Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flammable Properties

Not flammable.

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

No information available.

Specific hazards arising from the chemical	No information available.
Special Extinguishing Media	Cool drums with water spray.
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas.
Other Information	Refer to protective measures listed in Sections 7 and 8.
For emergency responders	Use personal protection recommended in Section 8.
Environmental precautions	Prevent further leakage or spillage if safe to do so.
Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.
Reference to other sections	See section 8 for more information. See section 13 for more information.

7. HANDLING AND STORAGE

Handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Ensure adequate ventilation. Avoid breathing vapors or mists. In case of insufficient ventilation, wear suitable respiratory equipment.
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Storage

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.
Incompatible materials	Strong acids. Strong bases. Strong oxidizing agents.
General hygiene considerations	Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure guidelines

Chemical name	Japan	ISHL Working Environmental Evaluation Standards - Administrative Control Levels	ACGIH TLV
Aluminum oxide 1344-28-1	TWA: 2 mg/m ³ TWA: 0.5 mg/m ³	-	TWA: 1 mg/m ³ respirable particulate matter
Titanium dioxide 13463-67-7	TWA: 0.3 mg/m ³	-	TWA: 10 mg/m ³
Iron oxide	-	-	TWA: 5 mg/m ³ respirable

1309-37-1			fraction
Magnesium oxide 1309-48-4	-	-	TWA: 10 mg/m ³ inhalable fraction
Calcium oxide 1305-78-8	-	-	TWA: 2 mg/m ³

Biological occupational exposure limits Not applicable

Engineering controls Showers
Eyewash stations
Ventilation systems.

Personal protective equipment

Eye/face protection Tight sealing safety goggles.

Skin and body protection Wear suitable protective clothing.

Hand protection Wear suitable gloves.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Environmental exposure controls No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical state Powder(s)
Appearance Gray
Odor Odorless
Color No information available
Odor Threshold No information available

<u>Property</u>	<u>Values</u>	<u>Remarks Method</u>
pH	No data available	None known
Melting / freezing point	>2000°C (>3632°F)	None known
Boiling point / boiling range	>2900°C (>5252°F)	None known
Flash Point	No data available	None known
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	3.9 g/cm ³	None known
Water Solubility	Insoluble	
Solubility(ies)	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Viscosity	No data available	None known
Explosive properties	No information available	
Oxidizing properties	No information available	

Other Information

Softening Point	No information available
Molecular Weight	No information available
VOC Content (%)	0%
Liquid Density	No information available
Bulk Density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

10. STABILITY AND REACTIVITY

Reactivity	No information available.
Stability	Stable under normal conditions.
Explosion Data	
Sensitivity to Mechanical Impact	None
Sensitivity to Static Discharge	None
Possibility of hazardous reactions	None under normal processing.
Incompatible materials	Strong acids. Strong bases. Strong oxidizing agents.
Hazardous Decomposition Products	None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information

Inhalation	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.
Eye contact	Specific test data for the substance or mixture is not available. Severely irritating to eyes. Causes serious eye damage. May cause burns. May cause irreversible damage to eyes.
Skin contact	Specific test data for the substance or mixture is not available. May cause irritation. Causes mild skin irritation.
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Symptoms	Redness. Burning. May cause blindness.

Numerical measures of toxicity - Product Information

Unknown acute toxicity

- 0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
- 5 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
- 5 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
- 11 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
- 11 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Numerical measures of toxicity - Component Information

Chemical name	LD50 Oral	LD50 Dermal	Inhalation LC50
Aluminum oxide 1344-28-1	> 5000 mg/kg (Rat)		

Titanium dioxide 13463-67-7	> 10000 mg/kg (Rat)		
Iron oxide 1309-37-1	> 10000 mg/kg (Rat)		
Magnesium oxide 1309-48-4	= 3870 mg/kg (Rat) = 3990 mg/kg (Rat)		
Calcium oxide 1305-78-8	= 500 mg/kg (Rat)		

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	May cause skin irritation.
Serious eye damage/eye irritation	Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	Contains a known or suspected carcinogen. Classification based on data available for ingredients.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	Carcinogenicity	IARC
Titanium dioxide 13463-67-7	2	Group 2B
Iron oxide 1309-37-1		Group 3

Legend:

- IARC (International Agency for Research on Cancer)
- Group 2B - Possibly Carcinogenic to Humans
- Group 3 - Not Classifiable as to Carcinogenicity in Humans

STOT - single exposure	May cause respiratory irritation.
STOT - repeated exposure	No information available.
Target Organ Effects	Respiratory system. Eyes. Skin. Gastrointestinal tract (GI). Lungs.
Aspiration hazard	No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Percentage for unknown hazards 0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Ecotoxicity

Chemical name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Calcium oxide		96h LC50: = 1070 mg/L (Cyprinus carpio)	-	

Persistence and Degradability No information available.

Bioaccumulation	There is no data for this product.
Mobility in soil	No information available.
Mobility	No information available.
Other adverse effects	No information available.

13. DISPOSAL CONSIDERATIONS

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.

14. TRANSPORT INFORMATION

IMDG	NOT REGULATED
ADR	NOT REGULATED
IATA	NOT REGULATED
Proper Shipping Name	NON REGULATED
Japan Hazard Class	N/A

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

National Regulations

Japan

Pollutant Release and Transfer Registry (PRTR)

Not applicable

Industrial Safety and Health Law

Harmful Substances Whose Names Are to be Indicated on the Label

Harmful Substances - names to be indicated on the label; Industrial Safety and Health Law enforcement order Table 9 (related to Industrial Safety and Health Law article 57 and ISHL Ordinance Article 33)

ISHL Notifiable Substances

ISHL Notifiable Substances - information (safety data sheet) to be supplied; Industrial Safety and Health Law enforcement order Table 9 (related to Industrial Safety and Health Law article 57-2 and ISHL Ordinance Article 34-2-4)

Fire Service Law:

Not applicable

Chemical name	Threshold limits
Calcium oxide - 1305-78-8	500 kg

Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (CSCL)

Not applicable

Water Pollution Control Act

Designated substance may cause adverse effects to human health or the living environment per Water Pollution Control Law article 2 and Enforcement Order article 3-3

Waterworks (Water Supply) Act

Waterworks (Water Supply) Act article 4 legally binding water quality standards
Waterworks (Water Supply) Act article 4 water quality guidelines

International Regulations

Ozone-depleting substances (ODS) Not applicable

Persistent Organic Pollutants Not applicable

Export Notification requirements Not applicable

International Inventories

TSCA	Contact supplier for inventory compliance status.
DSL/NDL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.
AICS	Contact supplier for inventory compliance status.

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

16. OTHER INFORMATION

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Issuing Date	01-Mar-2017
Revision Date	08-Nov-2018
Revision Note	No information available

Key or legend to abbreviations and acronyms used in the safety data sheet**Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	-	Skin designation
C	Carcinogen		

Disclaimer

This SDS complies with the requirements of JIS Z 7250:2010 and JIS Z 7252:2009 (Japan). The information provided in this Safety

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End of Safety Data Sheet