

CANON OPTRON INC.

SDS Number: EA01  
 Product Name: Al<sub>2</sub>O<sub>3</sub>

## SAFETY DATA SHEET

rev. 7.2      Date of Issue      2014/9/1  
 Revised Date      2022/10/3

## SECTION 1    Chemicals and company identification

Product name	Al <sub>2</sub> O <sub>3</sub>
Product code	EA01
Company name	CANON OPTRON INC.
Address	1744-1, Kanakubo, Yuki-shi, Ibaraki-ken, 307-0015 Japan
Section name	Sales Department
Telephone number	+81-296-21-3700
Fax number	+81-296-21-3770
Emergency telephone number	+81-296-21-3700
Use	Vacuum deposition material

## SECTION 2    Hazards identification

GHS Classification (A classification by JIS Z 7252 "classification methods such as chemical substances based on GHS")

Physical hazards	Explosives	Classification not possible
	Flammable gases	Not applicable
	Aerosols	Not applicable
	Oxidizing gases	Not applicable
	Gas under pressure	Not applicable
	Flammable liquids	Not applicable
	Flammable solids	Classification not possible
	Self-reactive substances and mixtures	Classification not possible
	Pyrophoric liquids	Not applicable
	Pyrophoric solids	Classification not possible
	Self-heating substances and mixtures	Classification not possible
	Substances and mixtures which, in contact with water, emit flammable gases	Classification not possible
	Oxidizing liquids	Not applicable
	Oxidizing solids	Classification not possible
	Organic peroxides	Classification not possible
	Corrosive to metals	Classification not possible
	Desensitize explosives	Classification not possible
Health hazards	Acute toxicity(oral)	Not classified
	Acute toxicity(dermal)	Classification not possible
	Acute toxicity (Inhalation: Gases)	Not applicable
	Acute toxicity (Inhalation: Vapors)	Classification not possible

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	Acute toxicity (Inhalation: Dusts and mists)	Classification not possible
	Skin corrosion/irritation	Classification not possible
	Serious eye damage/eye irritation	Classification not possible
	Respiratory sensitization	Classification not possible
	Skin sensitization	Classification not possible
	Germ cell mutagenicity	Classification not possible
	Carcinogenicity	Not classified
	Reproductive toxicity	Classification not possible
	Reproductive toxicity, effects on or via lactation	Classification not possible
	Specific target organ toxicity(single exposure)	Category 3
	Specific target organ toxicity(repeated exposure)	Category 1
	Aspiration hazard	Classification not possible
Environmental hazards	Hazardous to the aquatic environment Short-term(acute)	Classification not possible
	Hazardous to the aquatic environment Long-term(chronic)	Classification not possible
	Hazardous to the ozone layer	Classification not possible

## Label elements

hazard Pictograms

Exclamation

Health Hazard



Signal word

Danger

Dangerous goods hazard information

May cause respiratory irritation.  
Causes damage to organs through prolonged or repeated exposure Lungs.

Precautionary statements

【Safety measures】

Do not breathe dust/fume/gas/mist/vapours/spray.  
Avoid breathing dust/fume/gas/mist/vapours/spray.  
Wash hands thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Use only outdoors or in a well-ventilated area.

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【First-aid measures】	IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF exposed or concerned: Call poison center or doctor/physician. Call a poison center / doctor/physician if you feel unwell. Get medical advice/attention if you feel unwell. Specific treatment.
【Storage】	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
【Disposal】	Dispose of contents/container in accordance with national regulations.
【Other hazards】	—

## SECTION 3 Composition/information on ingredients

Substance/Mixture	Substance
Chemical name	Aluminum oxide
Chemical formula	Al <sub>2</sub> O <sub>3</sub>
Concentration or concentration range	99.9%<
CAS No.	1344-28-1
TSCA Inventory	Aluminum oxide (Al <sub>2</sub> O <sub>3</sub> )
EINECS number	215-691-6
Radioactive information	Radioactive substances are not used as the material. Therefore, there is no reason that ionizing radiation would be generated.

## SECTION 4 First aid measures

Inhalation	Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse affected areas with water/shower. IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: : Get medical advice/attention.
Eye contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	Rinse mouth. Get medical advice/attention.
Most important symptoms and effects, both acute and delayed	Inhalation: Coughing. Eye contact: Reddening.
Protection of first aiders	Rescuers, wear suitable protective equipment as the situation demands.
Special precautions for physicians	No data available

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## SECTION 5    Firefighting measures

Suitable extinguishing media	This material is non-flammable. It use an extinguishing agent adapted to the surrounding fire.
Unsuitable extinguishing media	No data available
Specific hazards	No data available
Specific extinguishing methods	It move a container from the fire area if not dangerous.
Special protective equipment for firefighters	On the occasion of fire fighting, including the appropriate air respirator, wear appropriate chemical protective clothing. Immovable case, it is cooled with water spray in and around the container.

## SECTION 6    Accidental release measures

Personal precautions, protective equipment, and emergency procedures	Immediately, It isolate leakage area as the appropriate distance in all directions. It prohibit the entrance except the person concerned. Wear, the worker to avoid contact and inhalation gas, fume of the eye, to the skin (see section "protection measures and 8. Exposure prevention") appropriate protective equipment.
Environmental precautions	No data available
Methods and material for containment and cleaning up	If it is not dangerous to do so, stop the leak. Collection and neutralization: Sweep up leaked material and collect it in a sealable empty container.
Secondary disaster prevention measures	Generation of dust, It avoid spreading.

## SECTION 7    Handling and storage

### Precautions for safe handling

Technical measures	Take measures for equipment as described in "8. Exposure controls/personal protection" and wear protective equipment.
Safety handling precautions	Be used only in well-ventilated area or outdoors. Do not swallow contact, or inhalation. Do not breathe dust, fumes.
Avoidance of contact	Refer to "10. Stability and reactivity."
Hygiene measures	Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.

### Conditions for safe storage, including any incompatibilities

Safe storage conditions	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Safety packaging material	No packaging, regulation of the container, but put to those that do not damage sealable.

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## SECTION 8    Exposure controls/personal protection

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Permissible concentration

ACGIH

(Particulate asbestos-free, less than 1% crystalline silica) TLV-TWA 10mg/m<sup>3</sup>

Appropriate engineering controls

Making a ventilation exhaust in order to keep the exposure limits or less concentration in the air.  
 And placing a safety shower and eye wash in the workplace handling or storage of this material.

Individual protection measures,  
such as personal protective  
equipment

Respiratory protection	Dustproof mask
Hand protection	Protective gloves
Eye/face protection	Dust-proof glasses
Skin protection	Protective clothing

## SECTION 9    Physical and chemical properties

Appearance

Physical state	Solid
Form	Pellets, granules, powder
Colour	White or transparency
Odour	None

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Melting point/freezing point

2072°C

Boiling point or initial boiling point  
and boiling range

2980°C

Flammability

No data available

Upper/lower flammability or  
explosive limits

No data available

Flash point

Noncombustibility

Auto-ignition temperature

Noncombustibility

Decomposition temperature

No data available

pH

No data available

Kinematic viscosity

No data available

Solubility

Water

Insoluble

Other solvents

The slightly soluble in non-polar organic solvent

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Partition coefficient: n-octanol/water	No data available
Vapour pressure	0.073Pa (mp.)
Density and/or relative density (Density)	3.97 ※ 2.63 ~ 3.05 (pellet) as Al <sub>2</sub> O <sub>3</sub>
Relative vapor density	No data available
Particle characteristics	No data available
Other information	No data available

## SECTION 10 Stability and reactivity

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Reactivity	No data available
Chemical stability	Stability
Possibility of hazardous reactions	Possibility of hazardous reaction is negligible.
Conditions to avoid	Generation of dust, diffusion.
Incompatible materials	Not applicable
Hazardous decomposition products	Not applicable

## SECTION 11 Toxicological information

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Acute toxicity(oral)	SPECIES: Rat ENDPOINT: LD <sub>50</sub> VALUE: > 5000 mg/kg
Acute toxicity(dermal)	No data available
Acute toxicity (Inhalation: Gases)	Solid (GHS definition)
Acute toxicity (Inhalation: Vapours)	No data available
Acute toxicity (Inhalation: Dusts and mists)	No data available
Skin corrosion/irritation	No data available
Serious eye damage/irritation	No data available
Respiratory or skin sensitization	No data available
Germ cell mutagenicity	The in vivo mutagenicity test has not been carried out, and in the in vitro mutagenicity test, we could only find the Ames test (negative). Therefore we presupposed that we could not classify it for the lack of data.
Carcinogenicity	Not classified because of "A"
Reproductive toxicity	No data available

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Specific target organ toxicity(single exposure)	<i>It was set as category 3 (respiratory irritation) from the statement of upper respiratory irritation (ICSC (2000)).</i>
Specific target organ toxicity(repeated exposure)	<i>It was classified into Category 1 according the statement that by occupational exposure of aluminas, pulmonary fibrosis was occurred (EHC (1997)).</i>
Aspiration hazard	<i>No data available</i>
Other information	No data available

## SECTION 12 Ecological information

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## Toxicity

Hazardous to the aquatic environment Short-term(acute)	<i>No data available</i>
Hazardous to the aquatic environment Long-term(chronic)	<i>No data available</i>
Persistence and degradability	<i>No data available</i>
Bioaccumulative potential	<i>No data available</i>
Mobility in soil	<i>No data available</i>
Hazard to the ozone layer	<i>No data available</i>
Other adverse effects	<i>No data available</i>

## SECTION 13 Disposal considerations

Waste treatment methods	Process is contracted to industrial waste disposers who received approval of a prefectural governor.
Contaminated container and contaminated packaging	The container is recycled after being cleaned, or is appropriately processed according to the standards of related laws and regulations. When disposing of empty containers, the contents should be completely removed.

## SECTION 14 Transport information

**AI2O3**

## International regulation

UN number	<i>Not applicable</i>
UN proper shipping name	<i>Not applicable</i>
UN classification	<i>Not applicable</i>
Transport hazard class	<i>Not applicable</i>
Packing group	<i>Not applicable</i>
Hazardous to the aquatic environment	<i>No data available</i>
Maritime transport in bulk according to IMO instruments	<i>No data available</i>

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Japanese laws and regulations	<i>Land regulation information Not applicable</i> <i>Maritime regulatory information non-hazardous materials</i> <i>Aviation regulatory information non-hazardous materials</i>
Special precautions for users	<i>When transporting, protect from direct sunlight and take on cargo without breakage of container, corrosion and leakage.</i>
Special Provisions	—

## SECTION 15 Regulatory information (Japan)

**AI2O3**

Occupational Safety and Health Law	<i>There is it in the case of an application or an application</i>
PRTR Law	<i>Not applicable</i>
Poisonous and Deleterious Substances control Law	<i>Not applicable</i>
Labor Standards Act	<i>Not applicable</i>
Chemical substances control Law	<i>Not applicable</i>
Fire fighting Law	<i>Not applicable</i>
Air Pollution Control Act	<i>Not applicable</i>
Water Pollution Prevention Act	<i>There is it in the case of an application or an application</i>
Water Supply Act	<i>There is it in the case of an application or an application</i>
Sewerage Act	<i>Not applicable</i>
Marine Pollution Prevention Law	<i>Not applicable</i>
Waste Management and Public Cleansing Act	<i>Not applicable</i>
Note	Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

## SECTION 16 Other information

The Safety Data Sheet (SDS) has been prepared based on currently available materials, information and data, and may be revised based on new information. Further, the important points in the SDS are made for the purpose of normal handling. When handling the user product in a specialized manner, take the appropriate safety measures for the application or method. Further, Canon Optron Inc. has paid sufficient attention to the described contents of the SDS, but does not guarantee the accuracy of its contents.

The SDS prepared by our company includes all findings from our investigation for reference. Not applicable to all items listed.

## Literature Reference

[WEB site]  
National Institute of Technology and Evaluation Homepage  
Japan Advanced Information Center of Safety and Health Homepage  
Ministry of Health, Labour and Welfare Homepage  
[Regulatory review Tools]  
ezCRIC (Japan Chemical Database Ltd)