

CANON OPTRON INC.

SDS Number: E010
 Product Name: OM-4

SAFETY DATA SHEET

rev. 6.5 Date of Issue 2014/9/1
 Revised Date 2018/6/6

SECTION 1 Chemicals and company identification

Chemical identifier	OM-4
SDS number	E010
Company name	CANON OPTRON INC.
Address	1744-1, Kanakubo, Yuki-shi, Ibaraki-ken, 307-0015 Japan
Section name	Internal Control Promotion Div.
Telephone number	+81-296-21-3700 (Sales Dept.)
Fax number	+81-296-21-3770
Emergency telephone number	+81-296-21-3700 (Sales Dept.)
Recommended uses and restrictions on 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")

Physicochemical hazard		
Explosives		Classification not possible
Flammable gases (including chemically unstable gases)		Not applicable
Aerosols		Not applicable
Oxidizing gases		Not applicable
Gases 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
Health hazard	Acute toxicity (oral)	Classification not possible
	Acute toxicity (dermal)	Classification not possible
	Acute toxicity (inhalation)	Classification not possible
	Skin corrosion/irritation	Classification not possible

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	Eye damage/eye irritation	Classification not possible
	Respiratory sensitization	Classification not possible
	Skin sensitization	Classification not possible
	Germ cell mutagenicity	Classification not possible
	Carcinogenicity	Classification not possible
	Reproductive toxicity	Classification not possible
	Effects on or via lactation	Classification not possible
	Specific target organ toxicity(single exposure)	Category 3(Respiratory tract irritation)
	Specific target organ toxicity(repeated exposure)	Category 1
	Aspiration hazard	Classification not possible
Environmental hazard	Hazard to the aquatic environment(acute hazard)	Classification not possible
	Hazard to the aquatic environment(long-term hazard)	Classification not possible
	Hazard to the ozone layer	Classification not possible

Label element

Pictogram (Symbol)

Exclamation

Health Hazard



Signal word

Danger

Hazard statement

May cause drowsiness or dizziness.
 Causes damage to organs through prolonged or repeated exposure.

Precautionary statement

【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.

【First-aid measures】

IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 Call a poison center or doctor/physician if you feel unwell.
 Get medical advice/attention 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 national regulations.

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SECTION 3 Composition and information ingredients

Substance/Mixture	Mixture	
Chemical name or generic name	<i>Zirconium oxide</i>	<i>Aluminium oxide</i>
Chemical formula	<i>ZrO2</i>	<i>Al2O3</i>
CAS No.	<i>1314-23-4</i>	<i>1344-28-1</i>
Concentration or concentration range	ZrO2 : 55- 65 Al2O3 : 35- 45	
TSCA Inventory	<i>Zirconium oxide (ZrO2)</i>	<i>Aluminum oxide (Al2O3)</i>
EINECS number	<i>215-227-2</i>	<i>215-691-6</i>
Radioactive information	It does not use a radioactive substance as a material. Thus, evidence of ionizing radiation occurs is not present.	

SECTION 4 First-aid measures

Inhalation	It is possible to move to fresh air victim immediately and keep at rest in a position comfortable for breathing. If you feel bad, you should contact your doctor.
Skin	Take off all contaminated clothing immediately Remove /. I flush for 15 minutes or more with soap and plenty of water. If symptoms blisters and pain comes, get medical attention if necessary.
Eye	Be flush eyes for at least 15 minutes with clean water immediately. If you are using the contact lenses, as long as it is not fixed, it can be washed and removed. Be subject to medical attention without fail.
Ingestion	Rinse mouth immediately. Be subject to medical attention without fail.
Protection of first aiders	Rescuers Wear protective equipment protective eyewear, such as protective gloves.

SECTION 5 Fire-fighting measures

Extinguishing media	The product itself does not burn.
Extinguishing media are unsuitable	No data available
Specific hazards	No data available
Specific extinguishing methods	The movable container, and transferred to a safe place as soon as possible in case of surrounding fire.
Protection of fire-fighters	In fire fighting, I want to wear (gloves, glasses, mask) the appropriate protective equipment.

SECTION 6 Accidental release measures

Personal precautions,protective equipment,and emergencyprocedures	Wear it (which specify what suited the nature of the product) protective equipment, such as spray or on skin, we do not want to dust inhalation, the gas at the time of work.
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Environmental precautions	Do not flowing in rivers and sewage directly spillage.
Methods and materials for containment and methods and materials for cleaning up	And collected in drums or paper bags are collected to wear or have rake those leaked. I to absorb in saw-dust or sediment residue content of the small amount of recovery after.
Secondary disaster prevention measures	No data available

SECTION 7 Handling and storage precautions

Handling

Technical measures	I wear the appropriate protective equipment safety glasses, protective gloves, etc.. After handling Wash hands, face, etc., and gargle.
Safety handling precautions	When handling, to handle in place with equipment for general ventilation or local exhaust under.

Storage

Safe storage conditions	Store tightly closed container in a well-ventilated place.
Safety packaging material	No data available

SECTION 8 Exposure controls and personal protection

ZrO2Al2O3

Permissible concentration

ACGIH

*TWA 5 mg/m³ (as Zr)
 STEL 10 mg/m³ (as Zr)
 (2005 edition)*

*(Particulate asbestos-free, less than 1% crystalline silica) TLV-TWA 10mg/m³
 (2005 edition)*

Engineering controls

To use devices that are sealed as much as possible, local exhaust ventilation or equipment.

Personal protective equipment

Respiratory protection	Dust mask
Hand protection	Protective glove
Eye protection	Dust-proof glasses
Skin and body protection	Protective clothing

SECTION 9 Physical and chemical properties

Appearance

Physical state	Solid
Form	Pellets, granules
Colour	White
Odour	None

ZrO2Al2O3

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pH	<i>No data available</i>	<i>No data available</i>
Melting point/Freezing point	<i>2700°C</i>	<i>2072°C</i>
Boiling point/Initial boiling point and boiling range	<i>4300°C</i>	<i>2980°C</i>
Flash point	<i>None</i>	<i>Noncombustibility</i>
Evaporation rate	<i>No data available</i>	<i>Not applicable</i>
Flammability (solid, gas)	<i>No data available</i>	<i>Noncombustibility</i>
Explosive limits		
LEL	<i>None</i>	<i>No data available</i>
UEL	<i>None</i>	<i>No data available</i>
Vapour pressure	<i>No data available</i>	<i>0.073Pa (mp.)</i>
Vapour density (air = 1)	<i>No data available</i>	<i>No data available</i>
Specific gravity (Relative density)	<i>5.73</i>	<i>3.97</i>
(Density)	<i>※ as OM-4, 3.0 ~ 3.8 (pellet)</i>	
Solubility		
Water	<i>Insoluble</i>	<i>Insoluble</i>
Other solvents	<i>No data available</i>	<i>The slightly soluble in non-polar organic solvent</i>
n-octanol/Water partition coefficient	<i>No data available</i>	<i>No data available</i>
Auto-ignition temperature	<i>No data available</i>	<i>Noncombustibility</i>
Decomposition temperature	<i>No data available</i>	<i>No data available</i>
Viscosity (Coefficient of viscosity)	<i>No data available</i>	<i>No data available</i>
Other data	<i>None</i>	<i>None</i>

SECTION 10 Stability and reactivity

	<u><i>ZrO2</i></u>	<u><i>Al2O3</i></u>
Reactivity	<i>No data available</i>	<i>No data available</i>
Chemical stability	<i>It is stable in storage conditions and normal handling.</i>	<i>Stability</i>
Hazardous reactions	<i>No data available</i>	<i>Almost no</i>
Conditions to avoid	<i>Heating, sunlight</i>	<i>Generation of dust, diffusion.</i>
Incompatible materials	<i>Strong oxidant</i>	<i>None</i>
Hazardous decomposition products	<i>No data available</i>	<i>None</i>

SECTION 11 Hazard information

ZrO2

Al2O3

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Acute toxicity(oral)	<i>No data available</i>	<i>Oral Rat LD50> 5000mg/kg</i>
Acute toxicity(dermal)	<i>No data available</i>	<i>No data available</i>
Acute toxicity(inhalation)	<i>Intraperitoneal – Mouse LD50: 87mg/kg</i>	<i>Mouse LD50:> 3,600 mg / kg (ip)</i>
Skin corrosion/irritation	<i>If inhaled, to stimulate the respiratory system and mucous membranes.</i>	<i>No data available</i>
Eye damage/eye irritation	<i>No data available</i>	<i>No data available</i>
Respiratory sensitization/Skin sensitization	<i>No data available</i>	<i>No data available</i>
Germ cell mutagenicity	<i>No data available</i>	<i>Was mutagenicity test has not been carried out, even in the mutagenicity test Ames test is only the (negative), and can not be classified by the lack of data. Was mutagenicity test has not been carried out, even in the mutagenicity test Ames test is only the (negative), and can not be classified by the lack of data.</i>
Carcinogenicity	<i>No data available</i>	<i>ACGIH are classified into (a substance that can not be classified as a human carcinogen) group A4.</i>
Reproductive toxicity	<i>No data available</i>	<i>No data available</i>
Specific target organ toxicity(single exposure)	<i>No data available</i>	<i>May cause respiratory irritation</i>
Specific target organ toxicity(repeated exposure)	<i>No data available</i>	<i>TLV-TWA 10mg/m3(An asbestos non-implication, the fine particles of under crystal silica 1%) (A 2005 version)</i>
Aspiration hazard	<i>No data available</i>	<i>TLV-TWA 10mg/m3(An asbestos non-implication, the fine particles of under crystal silica 1%) (A 2005 version)</i>
Others	None	

SECTION 12 Ecological information

	<u>ZrO2</u>	<u>Al2O3</u>
Ecotoxicity		
Fish	<i>No data available</i>	<i>No data available</i>
Crustaceantoxicity(single exposure)	<i>No data available</i>	<i>No data available</i>
Algae	<i>No data available</i>	<i>No data available</i>
Other organisms	<i>No data available</i>	<i>No data available</i>
Persistence and degradability	<i>No data available</i>	<i>No data available</i>
Bioaccumulative potential	<i>No data available</i>	<i>No data available</i>
Mobility in soil	<i>No data available</i>	<i>No data available</i>
Hazard to the ozone layer	<i>No data available</i>	<i>No data available</i>

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Others	<i>No data available</i>	<i>No data available</i>
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SECTION 13 Notes on disposal

Waste from residues	Entrust the process to industrial waste disposal contractor has received a license from the governor.
Contaminated container and contaminated packaging	Recycle or in the clean container and take appropriate disposal in accordance with the criteria of the relevant legislation sequence municipality.

SECTION 14 Transport information

	<u>ZrO2</u>	<u>Al2O3</u>
International regulation		
UN classification	<i>Not applicable</i>	<i>Not applicable</i>
UN number	<i>None</i>	<i>None</i>
UN proper shipping name	<i>None</i>	<i>None</i>
Packing group	<i>Not applicable</i>	<i>Not applicable</i>
Japanese laws and regulations	<i>None</i>	<i>No land Regulatory Information Regulatory Maritime regulatory information non-hazardous materials Aviation regulatory information non-hazardous materials</i>
Conditions and specific safety measures of transport	<i>No data available</i>	<i>During transport, the loading container is broken or corroded, so that there is no leak, and to reliably prevent the collapse of cargo.</i>

SECTION 15 Regulatory information (Japan)

	<u>ZrO2</u>	<u>Al2O3</u>
PRTR Law	<i>None</i>	<i>None</i>
Occupational Safety and Health Law	<i>There is it in the case of an application or an application</i>	<i>There is it in the case of an application or an application</i>
Poisonous and Deleterious Substances control Law	<i>None</i>	<i>None</i>
Explosives control Law	<i>None</i>	<i>None</i>
High-pressure gas security Law	<i>None</i>	<i>None</i>
Fire fighting Law	<i>None</i>	<i>None</i>
Chemical substances control Law	<i>None</i>	<i>None</i>
Ship safety Law	<i>None</i>	<i>None</i>
Aviation Law	<i>None</i>	<i>None</i>
Prevention of marine pollution Law	<i>None</i>	<i>None</i>
Pneumoconiosis Law	<i>None</i>	<i>There is it in the case of an application or an application</i>

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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.

Literature Reference

[References]

Industrial Safety and Health Act All Data of MSDS Target Substances: The Chemical Daily Co., Ltd (2003)
Poisonous and Deleterious Substances Control Act All Data of MSDS Target Substances: The Chemical Daily Co., Ltd (2003)
Pollutant Release and Transfer Register All Data of MSDS Target Substances: The Chemical Daily Co., Ltd (2003)
Recommendations for Allowable Concentrations (Fiscal 2017): Japan Society for Occupational Health Journal of Occupational Health, Vol. 59 2017

[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)