Wako Pure Chemical Industries, Ltd.

SAFETY DATA SHEET

According to JIS Z 7253:2012

Revision Date 02-Dec-2015
Version 1.01

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product name	Zirconium Oxide
Product code	260-00482,264-00485
CAS No	1314-23-4

Formula ZrO2

Manufacturer
Wako Pure Chemical Industries, Ltd.
1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan
Phone: +81 (0)6-6203-3741
Fax: +81 (0)6-6201-5964

Supplier
Wako Pure Chemical Industries, Ltd.
1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan
Phone: +81 (0)6-6203-3741
Fax: +81 (0)6-6201-5964

Emergency telephone number +81-6-6203-3741 / +81-3-3270-8571

Recommended uses and restrictions on use For research purposes

Section 2: HAZARDS IDENTIFICATION

GHS classification
Classification of the substance or mixture
Not a hazardous substance or mixture according to the Globally Harmonized System (GHS)

Pictograms

Signal word none

Hazard statements
Not a hazardous substance or mixture according to the Globally Harmonized System (GHS)

Precautionary statements-(Prevention)
• Not applicable
Precautionary statements-(Response)
Precautionary statements-(Storage)
• Not applicable
Precautionary statements-(Disposal)
• Not applicable

Others
Other hazards Not available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Single Substance or Mixture Substance

Formula ZrO2

Chemical Name	Weight-%	Molecular weight	ENCS	ISHL No.	CAS No
Zirconium(IV) Oxide	95.0	123.22	(1)-563	N/A	1314-23-4

Impurities and/or Additives： Not applicable

Section 4: FIRST AID MEASURES

Inhalation
Remove to fresh air. If symptoms persist, call a physician.
Skin contact
Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.
Eye contact
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.
Ingestion
Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.
Protection of first-aiders
Use personal protective equipment as required.

Section 5: FIRE FIGHTING MEASURES

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment
Unsuitable extinguishing media
No information available
Special extinguishing method
Fire-extinguishing work is done from the windward and the suitable fire-extinguishingmethod according to the surrounding situation is used. Uninvolved persons shouldevacuate to a safe place.
Specific hazards arising from the chemical product
Thermal decomposition can lead to release of irritating and toxic gases and vapors.
Protection of fire-fighters
Use personal protective equipment as required. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
For indoor, provide adequate ventilation process until the end of working. Deny unnecessary entry other than the people involved by, for example, using a rope. While working, wear appropriate protective equipments to avoid adhering it on skin, or inhaling the gas. Work from windward, and retract the people downwind.
Environmental precautions
To be careful not discharged to the environment without being properly handled waste water contaminated.
Methods and materials for contaminent and methods and materials for cleaning up
Do not touch spilled material without suitable protection(See section 8). After material is completely picked up, wash the spill sit e with soap and water and ventilate the area. Put all wastes in a plastic bag for disposal and seal it tightly. Remove, clean, or di spose of contaminated clothing.
Recoverly, neutralization
No information available
Secondary disaster prevention measures
Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: HANDLING AND STORAGE

Handling

Technical measures

Use with local exhaust ventilation.

Precautions

Do not rough handling containers, such as upsetting, falling, giving a shock, and dragging. Prevent leakage, overflow, and scattering. Not to generate steam and dust in vain. Seal the container after use. After handling, wash hands and face, and then gargle. In places other than those specified, should not be smoking or eating and drinking. Should not be brought contaminated protective equipment and gloves to rest stops. Deny unnecessary entry of non-emergency personnel to the handling area.

Safety handling precautions

Use personal protective equipment as required.

Storage

Safe storage conditions

Storage conditions	Store away from sunlight in well-ventilated place at room temperature (preferably cool). Keep container tightly closed.
Safe packaging material	Polypropylene, Polyethylene
Incompatible substances	Strong oxidizing agents

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls

In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

Exposure limits

Chemical Name	JSOH (Japan)	ISHL (Japan)	ACGIH
Zirconium(IV) Oxide 1314-23-4	N/A	N/A	STEL: 10 mg/m³ Zr TWA: 5 mg/m³ Zr

Personal protective equipment

Respiratory protection	Dust mask
Hand protection	Protection gloves
Eye protection	protective eyeglasses or chemical safety goggles
Skin and body protection	Long-sleeved work clothes

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Form	
Color	white - slightly brown
Appearance	powder
Odor	Odorless
pH	No data available
Melting point/freezing point	2700 °C
Boiling point, initial boiling point and boiling range	4300 °C
Flash point	No data available
Evaporation rate:	No data available
Flammability (solid, gas):	No data available
Upper/lower flammability or explosive limits	
Upper：	No data available
Lower：	No data available
Vapour pressure	No data available
Vapour density	No data available
Specific Gravity / Relative density	5.89

Solubilities	water : insoluble . hydrochloric acid , nitric acid : slightly soluble . Sulfuric acid : soluble .
n-Octanol/water partition coefficient:(log Pow)	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity (coefficient of viscosity)	No data available
Dynamic viscosity	No data available

Section 10: STABILITY AND REACTIVITY

Stability

Stability	Stable under recommended storage conditions.
Reactivity	No data available

Hazardous reactions

None under normal processing

Conditions to avoid

Extremes of temperature and direct sunlight

Incompatible materials

Strong oxidizing agents

Hazardous decomposition products

No information available

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity	No data available
Skin irritation/corrosion	No data available
Serious eye damage/ irritation	No data available
Respiratory or skin sensitization	No data available
Reproductive cell mutagenicity	No data available
Carcinogenicity	No data available
Reproductive toxicity	No data available
STOT-single exposure	No data available
STOT-repeated exposure	No data available
Aspiration hazard	No data available

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity	No information available
Other data	No data available
Persistence and degradability	No information available
Bioaccumulative potential	No information available
Mobility in soil	No information available
Hazard to the ozone layer	No information available

Section 13: DISPOSAL CONSIDERATIONS

Waste from residues

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated container and contaminated packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14: TRANSPORT INFORMATION

ADR/RID	Not regulated
UN number	-
Proper shipping name:	
UN classfication	
Subsidiary hazard class	
Packing group	
Marine pollutant	Not applicable
IMDG	Not regulated
UN number	-
Proper shipping name:	
UN classfication	
Subsidiary hazard class	
Packing group	
Marine pollutant (Sea)	Not applicable
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	No information available
IATA	Not regulated
UN number	-
Proper shipping name:	
UN classfication	
Subsidiary hazard class	
Packing group	
Environmentally Hazardous Substance	Not applicable

Section 15: REGULATORY INFORMATION

International Inventories

EINECS/ELINCS	Listed
TSCA	Listed

Japanese regulations

Fire Service Act	Not applicable
Poisonous and Deleterious Substances Control Law	Not applicable
Industrial Safety and Health Act	Notifiable Substances (Law Art.57-2, Enforcement Oder Art.18-2 Attached Table No.9)No.313
Regulations for the carriage and storage of dangerous goods in ship	Not applicable
Civil Aeronautics Law	Not applicable
Pollutant Release and Transfer Register Law	Not applicable
Export Trade Control Order	Not applicable

Section 16: OTHER INFORMATION

Literature and references

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
GHS Classification is acoording to JIS Z7252(2010). *JIS: Japanese Industrial Standards

End of Safety Data Sheet