

Safety Data Sheet

1. Chemical product and company identification

Product name : Cerium(IV) oxide

Company information

Name of manufacturer : KANTO CHEMICAL CO., INC.

Address : 2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, JP

Name of section : Business Administration Department, Reagent Division

Telephone number : +81-3-6214-1090

Facsimile number : +81-3-3241-1047

Mail address : BC32@kanto.co.jp

Reference No : 07167

Recommended use : For research use only

Restrictions on use : Seek expert judgment when using the product for applications other than those recommended.

2. Hazards identification

GHS classification

Health hazards	Specific target organ toxicity (single exposure)	Category 2 (lung)
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Specific target organ toxicity (repeated exposure)	Category 1 (lung)
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Hazard
pictograms



Signal word : Danger

Hazard statements	: May cause damage to organs (lung) Causes damage to organs (lung) through prolonged or repeated exposure
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Precautionary statements

Prevention	:	Do not breathe dust.
		Wash hands, forearms and face thoroughly after handling.
		Do not eat, drink or smoke when using this product.

Response : IF exposed or concerned: Call a POISON CENTER or doctor.
Get medical advice/attention if you feel unwell.

Storage : Store locked up.

Disposal : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

3. Composition/information on ingredients

Distinction of substance or mixture : Substance

Synonyms : Cerium dioxide

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Cerium oxide(IV)	≥ 99.5	CeO ₂	Listed	215-150-4	1306-38-3

4. First aid measures

First aid measures

First-aid measures after inhalation : Remove the victim to fresh air, and make him blow his nose and gargle. If necessary, get medical treatment.

First-aid measures after skin contact : Wash the affected areas under running water.

First-aid measures after eye contact : Wash the affected areas under running water.

First-aid measures after ingestion : Give the victim water or salt water and induce vomiting. If necessary, get medical attention.

Personal Protection in First Aid and Measures : Rescuers should wear proper protective equipment like rubber gloves, goggles.

5. Fire fighting measures

Suitable extinguishing media : This product is noncombustible.

Unsuitable extinguishing media : None

Firefighting instructions : Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.

Personal protection (Emergency response) : Firefighters should wear protective equipment.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

General measures : Wear proper protective equipment and avoid contact with skin and inhalation of dust. Conduct operations from upwind and evacuate people downwind.

Environmental precautions

Environmental precautions : Attention should be given to avoid damage to the environment by flowing of spillage to rivers.

Methods and Equipment for Containment and Cleaning up

For containment : Sweep up the chemical and place in a chemical waste container.

7. Handling and storage

Handling

Technical measures : If necessary, wear proper protective equipment to avoid contact with skin or inhalation of dust.

Precautions for safe handling : Avoid formation of dust and aerosols.

Storage

Storage conditions : Store in a dark, cool place and tightly closed.

Material used in : Glass, polyethylene, polypropylene.



packaging/containers

8. Exposure controls / Personal protection equipment

ACGIH TWA	Not established
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Appropriate engineering controls : Install a local ventilation system in case of dusty condition.

Protective equipment

Respiratory protection : If necessary, wear dust mask

Hand protection : Impervious protective gloves

Eye protection : Safety goggles

Skin and body protection : Protective clothing, protective boots

9. Physical and chemical properties

Physical state : Solid

Color : Light yellow

Odor : Odorless

pH : No data available

Melting point : 2480 ° C

Freezing point : No data available

Boiling point : No data available

Flash point : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Flammability : Non flammable.

Vapor pressure : No data available

Relative density : No data available

Density : 7.216 g/cm³

Relative gas density : No data available

Solubility : Water: Insoluble. Organic solvents: Insoluble.

Partition coefficient n-octanol/water (log Pow) : No data available

Explosive limits (vol %) : No data available

Viscosity, kinematic : No data available

Particle characteristics : No data available

10. Stability and reactivity

Reactivity : The substance has no significant reactivity.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Stable under normal conditions of use.

Conditions to avoid : Light, heat.

Incompatible materials : Nothing.

Hazardous decomposition products : fume.



11. Toxicological information

Acute toxicity (oral)	: No classification rat LD50>5000mg/kg
Acute toxicity (dermal)	: No classification rat LD50>2000mg/kg
Acute toxicity (inhalation)	: No classification (gas) Classification not possible (vapor) No classification (dust, mist) : rat LC50>5.05mg/L
Skin corrosion/irritation	: No classification In a test in which 0.5g of test substance was applied to rabbits, it was not irritating. Therefore, it was classified as "No classification".
Serious eye damage/irritation	: No classification In a test in which 0.1g of test substance was applied to rabbits, it was not irritating. Therefore, it was classified as "No classification".
Respiratory sensitization	: Classification not possible
Skin sensitization	: Classification not possible
Germ cell mutagenicity	: No classification Ames test is negative, since in vivo micronucleus test using mice is negative, it was classified as "No classification".
Carcinogenicity	: Classification not possible
Reproductive toxicity	: Classification not possible
STOT-single exposure	: May cause damage to organs (lung) In 4-hour inhalation exposure(4.12-5.98mg/L concentration of (dust)) test, based on the results that labored breathing and coat of turbulence in mice in 2/10, incomplete collapse accompanied by diffuse whitish lesions in the lungs of all cases were observed, it was classified as category 2(lung), because concentration of exposure was corresponding to the upper limit of nearly guidance value range category 2.
STOT-repeated exposure	: Causes damage to organs (lung) through prolonged or repeated exposure In the lungs of workers who received exposure of fume of rare earth elements such as cerium over the years, the accumulation of rare earth elements, granuloma, emphysema, reduction of lung lesions and lung capacity of interstitial fibrosis were reported. Also, mild pleural thickening and pulmonary obstruction was observed in 58-year-old men, who the elapsed at least more than 15 years after exposure to cerium oxide abrasive, cause dyspnea and came to hospital. A result of pathological examination, since there were cases that it was diagnosed as chronic thickening pleurisy, it was classified as category 1(lung).
Aspiration hazard	: Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	: Classification not possible
Aquatic chronic	: Classification not possible

Persistence and degradability

No additional information available



Bioaccumulative potential

No additional information available

Mobility in soil

No additional information available

Hazardous to the ozone layer

Ozone : Classification not possible

13. Disposal considerations

Ecological waste information : Bury in a landfill site approved for the disposal of chemical and hazardous wastes. Or entrust approved waste disposal companies with the disposal.

Contaminated container and packaging : In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information**International Regulations****Transport by sea(IMDG)**

UN-No. (IMDG) : Not applicable
Proper Shipping Name (IMDG) : Not applicable
Packing group (IMDG) : Not applicable
Transport hazard class(es) (IMDG) : Not applicable

Air transport(IATA)

UN-No. (IATA) : Not applicable
Proper Shipping Name (IATA) : Not applicable
Packing group (IATA) : Not applicable
Transport hazard class(es) (IATA) : Not applicable

Marine pollutant : Not applicable

15. Regulatory information

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility.

16. Other information

Data sources : NITE Chemical Risk Information Platform (NITE-CHRIP), National Institute of Technology and Evaluation.

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully. The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements. The information herein is only provision of information, and it does not represent a guarantee the properties of the product. The Safety Data Sheet(SDS) is prepared based on JIS Z7253.

