Date of issue : 10 July, 2003 Date of revision : 10 May, 2011

Material Safety Data Sheet

1. Product and company identification

Product name : Gadolinium oxide

Name of manufacturer : KANTO CHEMICAL CO. . INC.

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

Name of section : Reagent division, catalog and products information section

Telephone number : +81-3-6214-1090Facsimile number : +81-3-3241-1047Mail address : BC32@gms, kanto, co. ip

MSDS No. : 17000

2. Summary of danger and Hazard

GHS classification

Physical and chemical hazard

Flammable solids : Out of category Pyrophoric solids : Out of category Self-heating substances and mixtures

: Out of category

Oxidizing solids : Out of category

Human health hazard

Acute toxicity(oral) : Out of category

3. Composition/Information on ingredients

Substance/Mixture : Substance

Chemical name or commercial name

: Gadolinium oxide

Ingredients and composition

: Gadolinium oxide min. 99.95%

Chemical formula : Gd203

CAS No. : 12064-62-9
TSCA Inventory : Registered
EINECS No. : 2350609

4. First aid measures

Inhalation : Remove the victim to fresh air, and make him blow his nose and gargle.

Skin contact : Wash the affected areas under running water. Eye contact : Wash the affected areas under running water.

Ingestion : Give the victim water or salt water and induce vomiting. If necessary,

get medical attention.

5. Fire fighting measures

Extinguishing media : This product is noncombustible.

Prohibited extinguishing media

Date of issue : 10 July, 2003 Date of revision : 10 May, 2011

None

Particular fire fighting: 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.

Protection for firefighters

: Firefighters should wear protective equipment.

6. Accidental release measures

Cautions for personnel : Wear proper equipment and avoid contact with skin and inhalation of

dust. Keep away personnel except for authorized ones from spillage

area by stretching ropes.

Removal measure : Sweep up in a chemical waste container. Flush residual area with

copious amounts of water.

7. Cautions of handling and storage

Handling

Engineering measures : If necessary, wear proper protective equipment not to contact with

skin or inhale the dust.

Storage

Adequate storage condition

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

Safety adequate container materials

: Glass, polyethylene, polypropylene

8. Exposure control/Personal protection

Engineering measures : Use only with adequate ventilation and in closed systems.

Control parameters

ACGIH(2009) : Not established

Protective equipment

Respiration protective equipment

: If necessary, wear a chemical cartridge respirator.

Hands protective equipment

: Impervious protective gloves

Eyes protective equipment

: Safety goggles

9. Physical and chemical properties

Appearance : Powder
Color : White
Odor : Odorless

Boiling point : Not available

Melting point : 2310°C

Specific gravity : $7.407g/ml(20^{\circ}C)$

Solubility

Solubility in solvents : Water ; Insoluble

10. Stability and reactivity



Date of issue : 10 July, 2003 Date of revision : 10 May, 2011

Stability : Stable under normal usage.

Reactivity : Nothing particular

11. Toxicological information

Acute toxicity : Oral : Out of category

Dermal: Not possible to classify because of insufficient data.

Inhalation(vapor) : Not possible to classify because of insufficient

data.

Inhalation(dust, mist) : Not possible to classify because of

insufficient data.

rat oral LD50>5000mg/kg

Skin corrosiveness : Not possible to classify because of insufficient data.

Irritation to skin, eyes : Not possible to classify because of insufficient data.

Respiratory sensitization or Skin sensitization

Respiratory sensitization: Not possible to classify because of

insufficient data.

Skin sensitization: Not possible to classify because of insufficient

data.

Mutagenicity : Not possible to classify because of insufficient data.

Carcinogenic effects : Not possible to classify because of insufficient data

Effects on the reproductive system

: Not possible to classify because of insufficient data.

Specific target organ systemic toxicity single exposure

: Not possible to classify because of insufficient data.

-(Empty)-

Specific target organ systemic toxicity repeated exposure

: Not possible to classify because of insufficient data.

Aspiration hazard : Out of category

Not possible to classify because of insufficient data.

12. Ecological information

Ecotoxicity

Fish toxicity : Acute aquatic toxicity : Not possible to classify because of

insufficient data.

Chronic aquatic toxicity: Not possible to classify because of

insufficient data.

Rediualbility and degradability

: Non biodegrability

Ecorediualbility : Not available

13. Disposal consideration

Residual disposal : Bury in a landfill site approved for the disposal of chemical and

hazardous wastes. Or entrust approved waste disposal companies with

the disposal.

14. Transport information

UN class : Not applicable

15. Regulatory information



<< No.17000 Gadolinium oxide >> P.4 / 4

Date of issue : 10 July, 2003 Date of revision : 10 May, 2011

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. Other information

References

Dangerous Properties of Industrial Materials, 6th ed. N. I. Sax Van Nostrand Reinhold Company (1984)

Handbook of 15710 Chemical Products, The Chemical Daily Co. (2010)

ICSC Card(2009)

The information contained herein is based on several references and the present state of our knowledge. However the MSDS 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.