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Safety Data Sheet

1. Chemical product and company identification

Product name : Silicon dioxide, amorphous, 3N

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 : 37049-13
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	Serious eye damage/eye irritation	Category 2B
	Specific target organ toxicity (single exposure)	Category 3 (respiratory tract irritation.)

Hazard pictograms

Signal word : Warning

Hazard statements : Causes eye irritation
May cause respiratory irritation

Precautionary statements

Prevention : Avoid breathing dust.
Wash hands, forearms and face thoroughly after handling.
Use only outdoors or in a well-ventilated area.

Response : IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a POISON CENTER or doctor if you feel unwell.
If eye irritation persists: Get medical advice/attention.

Storage : Store in a well-ventilated place. Keep container tightly closed.
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 : Silicic anhydride, amorphous, 3N

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Silicon dioxide	≥ 99.9	SiO2	Not listed	-	112926-00-8

4. First aid measures

First aid measures

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately 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 : Rinse mouth. Do not induce vomiting. Get medical attention immediately.

Self protection of the first-aider : 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 in a chemical waste container. Flush contaminated area with copious amounts of water.

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 the bottle tightly closed in a cool, dark place because the substance is hygroscopic.
Material used in packaging/containers	:	Glass, polyethylene, polypropylene.

8. Exposure controls / Personal protection equipment

ACGIH TWA	Not established

Appropriate engineering controls	:	Install a local ventilation system in case of dusty condition.

Protective equipment

Respiratory protection	:	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	:	White
Odor	:	Odorless
pH	:	No data available
Melting point	:	1710 ° C
Freezing point	:	No data available
Boiling point	:	2230 ° C
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	:	2.2
Density	:	No data available
Relative gas density	:	No data available
Solubility	:	Water: 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	:	This product is not affected by anything other than hydrofluoric acid and strong alkalis.
Chemical stability	:	Stable under normal conditions.

Possibility of hazardous reactions	:	Stable under normal conditions of use.
Conditions to avoid	:	Light, heat.
Incompatible materials	:	Hydrofluoric acid, strong alkaline substance.
Hazardous decomposition products	:	fume.

11. Toxicological information

Acute toxicity (oral)	:	No classification rat LD50>5000 mg/kg
Acute toxicity (dermal)	:	No classification rabbit LD50>2000 mg/kg
Acute toxicity (inhalation)	:	No classification (gas) No classification (vapor) Classification not possible (dust, mist)
Skin corrosion/irritation	:	No classification It is reported that irritation was not observed after application of precipitated silica in a skin irritation test using rabbits (OECD TG 404). Besides, it is reported that irritation was not found in a test in which precipitated silica or amorphous silica having a different form was applied respectively to rabbits for 24 hours. From the above, this substance was classified as "Not classified."
Serious eye damage/irritation	:	Causes eye irritation It is reported that irritation was not observed after application of precipitated silica in an eye irritation test using rabbits (OECD TG 405). Besides, there are multiple reports from tests in which precipitated silica or amorphous silica having a different form was applied to rabbits, including no eye irritation found and the one in which slight conjunctivitis, slight to moderate conjunctival redness and corneal opacity were observed, but all signs were reversible. From the above, this substance was classified in category 2B.
Respiratory sensitization	:	Classification not possible
Skin sensitization	:	Classification not possible
Germ cell mutagenicity	:	Classification not possible As for in vivo, a dominant lethal test in oral administration in rats and a chromosomal aberration test in rat bone marrow cells after oral administration were negative. As for in vitro, a bacterial reverse mutation test, a gene mutation test and a chromosomal aberration test in cultured mammalian cells were negative, and a micronucleus test in cultured mammalian cells was weakly positive.
Carcinogenicity	:	Classification not possible This substance is classified in synthetic amorphous silica. There is no information on carcinogenicity by exposure to synthetic amorphous silica to humans. However, from the insufficient evidence of carcinogenicity in humans for the whole synthetic amorphous silica (including diatom earth and biogenic silica fibers other than this substance) and insufficient evidence also in experimental animals for synthetic amorphous silica, IARC classified the whole amorphous silica in "Group3" in carcinogenicity. Therefore, this substance was also classified as "Classification not possible" according to the IARC evaluation.

Reproductive toxicity	:	Classification not possible There is no information on reproductive effects in humans. As for experimental animals, it is reported that in a teratogenicity test in pregnant female animals of rats, mice, hamsters, and rabbits in gavage administration of synthetic amorphous silica during an organogenetic period, maternal toxicity, fetal toxicity, or teratogenicity was not observed in any animal species even administered at the doses from 1,340 to 1,600 mg/kg/day. However, because there is no test report on effects on sexual function and fertility by administration of this substance, and this substance was classified as "Classification not possible" for this hazard class due to lack of data.
STOT-single exposure	:	May cause respiratory irritation From the information that silica gel is irritating to the respiratory tract, it was classified in category 3 (respiratory tract irritation).
STOT-repeated exposure	:	Classification not possible Human studies have shown that in workers exposed to dust of the substance for 8.5 years on average, no adverse effects on pulmonary function and chest X-ray were noted. Animal studies have shown that in inhalation tests in which rats, guinea pigs, and rabbits were exposed to 126 mg/m3 of the substance for 1 year (rats) and 2 years (guinea pigs and rabbits), no signs of pulmonary fibrosis were observed, and only macrophage accumulation and slight increase in reticular fibers were observed. In a 21-month feeding administration study in mice and in a 24-month feeding administration study in rats, no toxic effects were observed. In inhalation tests in which monkeys, rats, and guinea pigs were exposed to 15 mg/m3 of the substance for 12-18 months, increased monocytic cells and increased reticular fibers in the lung were noted. As mentioned above, no adverse effects were seen in humans. Regarding experimental animals, only slight effects by inhalation route and no effects by oral route were seen. Thus, the classification was not possible.
Aspiration hazard	:	Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	:	No classification Danio rerio LC50=10000 mg/L/96h
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

Hazardous to the ozone layer : 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. Encyclopaedia Chimica, Kyoritsu Shuppan Co, Ltd. (1963) .

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 Z 7253:2019.