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Safety Data Sheet

1. Chemical product and company identification

Product name : Bismuth, drops, 4N

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	:	04199
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 1 (nervous system, kidney, bone joint)
	Specific target organ toxicity (repeated exposure)	Category 1 (nervous system, kidney, bone joint)

Hazard pictograms

Signal word : Danger

Hazard statements : Causes damage to organs (nervous system, kidney, bone joint)
Causes damage to organs (nervous system, kidney, bone joint) through prolonged or repeated exposure

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

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Bismuth	≥ 99.99	Bi	Listed	231-177-4	7440-69-9

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.

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. 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 : Wear appropriate 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 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 : Silvery white

Odor : Odorless

pH : No data available

Melting point : 271 ° C

Freezing point : No data available

Boiling point : 1564 ° C

Flash point : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Flammability : Non flammable.

Vapor pressure : 104 Pa (893℃)

Relative density : 9.78

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 : It reacts with fluorine and chlorine to ignite, and when heated with bromine and iodine, it produces bismuth halide.

Chemical stability : Stable under normal conditions. It discolors in water by forming hydroxides, oxides, carbonates, etc.

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

Conditions to avoid : Light, heat.

Incompatible materials : water.

Hazardous decomposition products : Bismuth oxide.

11. Toxicological information

Acute toxicity (oral)	:	No classification rat LD50=5000 mg/kg
Acute toxicity (dermal)	:	Classification not possible
Acute toxicity (inhalation)	:	No classification (gas) Classification not possible (vapor) Classification not possible (dust, mist)
Skin corrosion/irritation	:	Classification not possible
Serious eye damage/irritation	:	Classification not possible
Respiratory sensitization	:	Classification not possible
Skin sensitization	:	Classification not possible
Germ cell mutagenicity	:	Classification not possible From in vitro mutagenicity tests, there are reports of a negative Ames test and a weakly positive chromosomal aberration test.
Carcinogenicity	:	Classification not possible
Reproductive toxicity	:	Classification not possible Although there is a report of increase in embryonic mortality and lagging in fetal development for rats and mice, the details are not clear.
STOT-single exposure	:	Causes damage to organs (nervous system, kidney, bone joint) It was reported that common toxic effects that were attributed to bismuth and bismuth compounds in humans are encephalopathy, nephropathy, osteoarthropathy, gingivitis, stomatitis and colitis, and inorganic bismuth compounds cause neurotoxicity. Additionally, there is a report that clinical manifestations of acute bismuth intoxication are similar to those caused by mercury and lead: neurological abnormalities which include encephalopathy, and renal dysfunction with nephrotic syndrome. In a death case, examination of the deceased showed necrosis of the cerebral and cerebellar cortex. In a second case, acute renal failure was found following ingestion. Based on all information, the substance was classified into category 1 (nervous system, kidney, bone joint).
STOT-repeated exposure	:	Causes damage to organs (nervous system, kidney, bone joint) through prolonged or repeated exposure It was reported that for the substance the main target organs are the brain, kidney and bone. There are numerous cases in which chronic exposure caused varying neurologic symptom before on set of encephalopathy. Additionally, there are numerous reports that osteoarthropathy, pathological fractures or osteoporosis in combination with osteomalacia were observed after chronic ingestion or treatment with the substance. Based on this information for humans, the substance was classified into category 1 (nervous system, kidney, bone joint).
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 : No data available

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 Z7253.