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Safety Data Sheet

1. Chemical product and company identification

Product name : Lead, Powder

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	:	24036
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	Germ cell mutagenicity	Category 2
	Carcinogenicity	Category 2
	Reproductive toxicity	Category 1A
	Specific target organ toxicity (repeated exposure)	Category 1 (hematopoietic organs, kidney, nervous system, cardiovascular, immune system)

Hazard pictograms

Signal word : Danger

Hazard statements : Suspected of causing genetic defects
Suspected of causing cancer
May damage fertility or the unborn child
Causes damage to organs (hematopoietic organs, kidney, nervous system, cardiovascular, immune system) through prolonged or repeated exposure

Precautionary statements

Prevention : Do not handle until all safety precautions have been read and understood.
Do not breathe dust.
Wash hands, forearms and face thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/protective clothing/eye protection/face protection.

Response : IF exposed or concerned: Get medical advice/attention.
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
Lead	≥ 90	Pb	Listed	231-100-4	7439-92-1

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 or salt water and make him vomit. 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 : Dry chemical powder for metal, dry sand

Unsuitable extinguishing media : Water, carbon dioxide

Fire hazard : May form combustible dust concentrations in air.

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.

In case of fire, cover fire area with dry sand, diatomaceous earth to extinguish.

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.

Prevention Measures for : Remove nearby sources of ignition and prepare extinguishing

Secondary Accidents	media.

7. Handling and storage

Handling

Technical measures	:	Wear appropriate protective equipment to avoid contact with skin or inhalation of dust. Fire is prohibited. Ventilate well at working places.
Precautions for safe handling	:	Avoid formation of dust and aerosols. Do not allow contact with oxidizing substances.

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	0.05 mg/m³

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	:	Grayish blue
Odor	:	Odorless
pH	:	No data available
Melting point	:	327.4 ° C
Freezing point	:	No data available
Boiling point	:	1750 ° C
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability	:	Flammable solid
Vapor pressure	:	No data available
Relative density	:	11.34 (20/4℃)
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	:	Has reducing property. When oxidized in air, it first becomes lead(Ⅱ) oxide and then lead(Ⅱ) lead(Ⅳ) oxide. When heated, it reacts directly with halogens, sulfur, selenium, tellurium, etc. to form each compound.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Spontaneous combustion may occur in moist air.
Conditions to avoid	:	Light, heat, moisture.
Incompatible materials	:	Acids, oxidizing substances.
Hazardous decomposition products	:	Fume, lead oxides.

11. Toxicological information

Acute toxicity (oral)	:	Classification not possible
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	:	Suspected of causing genetic defects Although there are contradicting results about the chromosome aberration in the peripheral blood lymphocytes from people who are engaged in lead-related work, there are mentions of lead itself having chromosome aberrative/micronucleus inductive actions. So the substance was classified into category 2.
Carcinogenicity	:	Suspected of causing cancer IARC classifies it as group 2B (possibly carcinogenic to humans).
Reproductive toxicity	:	May damage fertility or the unborn child Since there is the description that there is the effect of sperm formation disorder in human exposure example, and there is anovulation in the female occupation exposure example, it is classified into the category 1A. There is the description about the relationship with neonatal developmental disorder of recognitive function and there is the relationship with the increase of miscarriage. But the obvious conclusion is not indicated.
STOT-single exposure	:	Classification not possible Although there was a case report that renal dysfunction was observed in the acute intoxication in human, there was no kidney damage in the subsequent epidemiologic study in the same source of reference. So data is insufficient for making the kidney into target organ, therefore, it cannot be classified.

STOT-repeated exposure	:	Causes damage to organs (hematopoietic organs, kidney, nervous system, cardiovascular, immune system) through prolonged or repeated exposure Due to the descriptions that the target organs were hematopoietic system, nervous system, kidney, and cardiovascular system, that heme synthesis inhibitors, nephropathy and brain diseases were observed in the human exposure examples, that it affects to the peripheral nerve and function of central nerve system in humans exposure examples, that it affects to cardiovascular system, such as high blood pressure in human exposure examples, that the immunosupressive effect was observed in human exposure examples, it is considered that the target organs were hematopoietic system, the kidney, central nervous systems, peripheral nervous system, cardiovascular system and immune system, and they all were classified into category 1. Although there are the descriptions of the case reports of thyroid or adrenal hypofunctions, each case reports are before 1970, and there is no similar report after that, since there is the description that no effects was observed in the thyroid, the thyroid and the adrenal gland were not considered as for target organs.
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	:	Solidification method : Solidify with cement and bury in a landfill site approved for hazardous waste disposal after confirming that dissolving quantity is under criteria. Or entrust approved waste disposal companies with the disposal. <Note> *Dissolution test and dissolution standard for the disposal are in accordance with provisions under related laws.
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 : Encyclopaedia Chimica, Kyoritsu Shuppan Co, Ltd. (1963) .
Handbook of 17322 Chemical Products, The Chemical Daily Co. (2022) .
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.