Issue date: 11/28/2003
Revision date: 4/2/2024

Safety Data Sheet

1. Chemical product and company identification

Product name : Lead(Ⅱ) nitrate

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	:	24068
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

Physical hazards	Oxidizing solids	Category 2
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Germ cell mutagenicity	Category 2
	Carcinogenicity	Category 2
	Reproductive toxicity	Category 1A
	Specific target organ toxicity (single exposure)	Category 1 (blood, kidney, nervous system)
	Specific target organ toxicity (repeated exposure)	Category 1 (blood, kidney, nervous system)
Environmental hazards	Aquatic acute	Category 1
	Aquatic chronic	Category 1

Hazard pictograms

Signal word : Danger

Hazard statements :
May intensify fire; oxidizer
Causes skin irritation
Causes serious eye irritation
Suspected of causing genetic defects
Suspected of causing cancer
May damage fertility or the unborn child
Causes damage to organs (blood, kidney, nervous system)
Causes damage to organs (blood, kidney, nervous system) through prolonged or repeated exposure
Very toxic to aquatic life

Very toxic to aquatic life with long lasting effects

Precautionary statements

Prevention : Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep away from clothing and other combustible materials.
Do not breathe dust.
Wash hands, forearms and face thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.

Response : IF ON SKIN: Wash with plenty of water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Call a POISON CENTER or doctor.
IF exposed or concerned: Get medical advice/attention.
Get medical advice/attention if you feel unwell.
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
Collect spillage.

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(Ⅱ) nitrate	≥ 99.3	Pb(NO3)2	Listed	233-245-9	10099-74-8

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 for at least 15 minutes. If necessary, get medical treatment.

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	:	This product is noncombustible.
Unsuitable extinguishing media	:	None
Fire hazard	:	Contact with combustible material may cause fire.
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 discharge of spilled product into rivers and resulting environmental damage. When diluting spill with large amounts of water, discharge of untreated wastewater into the environment must be avoided.

Methods and Equipment for Containment and Cleaning up

For containment	:	Sweep up in a chemical waste container. Neutralize residue with calcium hydroxide or sodium carbonate water solution and then flush contaminated area with copious amounts of water.
Prevention Measures for Secondary Accidents	:	Do not allow contact with organic substances or combustible substances.

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. The substance is an oxdizer. Avoid contact with organic substances.

Storage

Storage conditions	:	Store in a dark, cool place and tightly closed. Keep away from combustible matrials.
Material used in packaging/containers	:	Glass, polyethylene, polypropylene.

8. Exposure controls / Personal protection equipment

ACGIH TWA	0.05 mg/m³ (as Pb)

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	:	White
Odor	:	Odorless
pH	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	Decomposition
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	470 ° C
Flammability	:	Non flammable.
Vapor pressure	:	No data available
Relative density	:	4.53
Density	:	No data available
Relative gas density	:	No data available
Solubility	:	Water: 28 % (0℃)
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 oxidative properties. A complex salt is formed with alkali nitrate, silver nitrate, etc.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	The mixture with powdery combustible materials may burn vigorously or explode by heating or shock.
Conditions to avoid	:	Light, heat.
Incompatible materials	:	Reducing substances, combustible materials.
Hazardous decomposition products	:	Nitrogen oxides, 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	:	Causes skin irritation Based on the description of acute effects on humans : "flare and pain" were observed. The substance is thus considered to produce skin irritation of unknown degree, it was classified into category 2.
Serious eye damage/irritation	:	Causes serious eye irritation Based on the description of acute effects on humans : "reddening and pain" were observed in the eye. The substance is thus considered to produce eye irritation of unknown degree, it was classified into category 2A.
Respiratory sensitization	:	Classification not possible
Skin sensitization	:	Classification not possible
Germ cell mutagenicity	:	Suspected of causing genetic defects Since it was positive in the somatic cell in vivo genetic toxicity test (SCE test) and positive in the in vitro mutagenicity test (gene mutation test), it was classified into category 2.
Carcinogenicity	:	Suspected of causing cancer ACGIH classifies lead inorganic compounds as A3(confirmed animal carcinogen with unknown relevance to humans).
Reproductive toxicity	:	May damage fertility or the unborn child Based on expert judgment, given the fact that lead has been known to possess developmental neurotoxic and reproductive toxic potentials in humans., it was classified into category 1A.
STOT-single exposure	:	Causes damage to organs (blood, kidney, nervous system) Based on the human evidence: "The effects observed in acute and chronic studies are very similar for inorganic lead compounds. Inhalation or oral ingestion of inorganic lead has been reported to induce oral contraction and thirst, along with nausea, vomiting, upper abdominal discomfort, loss of appetite, abdominal pain and constipation suggesting gastrointestinal toxicity. The effects on hematopoietic function such as hemoglobin synthesis inhibition due to delta-aminolevulinic acid/heme synthetic enzyme inhibition and anemia caused by shortened survival of red blood cells are considered representative of toxic actions of inorganic lead. Kidney effects are evidenced by interstitial nephropathy and decreased urinary output along with proximal renal tubular damage showing Fanconi's syndrome represented by proteinuria, hematuria, urinary cast, glycosuria and aminoaciduria. Inorganic lead adversely affects the central and peripheral nervous systems, displaying in particular weakening of the muscle of the limbs, pain and spasm. There have been rare reports of adults exhibiting ataxia, headache, paresthesia, depression and coma indicative of toxic effects on the central nervous system when exposing to extremely high doses. However, children are most sensitive to toxicity of lead, and neurodevelopmental toxicity manifested as restlessness, aggression, concentration difficulties and memory lapse has become serious problem in the U.S. ". It was classified into category 1 (blood, kidney, nervous syste).
STOT-repeated exposure	:	Causes damage to organs (blood, kidney, nervous system) through prolonged or repeated exposure Based on the above-mentioned description that "The effects observed in acute and chronic studies are very similar for inorganic lead compounds.", this section is also classified into category 1 (blood, kidney, nervous system).
Aspiration hazard	:	Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	:	Very toxic to aquatic life Amphipod LC50=0.198mg/L/96h
Aquatic chronic	:	Very toxic to aquatic life with long lasting effects

Persistence and degradability

No additional information available

Bioaccumulative potential

Low bioconcentration
BCF : 82-190 (6.3μg/L), 72-250 (0.63μg/L)

Mobility in soil

No additional information available

Hazardous to the ozone layer

Ozone	:	Classification not possible

13. Disposal considerations

Ecological waste information	:	Disposal should be made by one of following methods. Or entrust approved waste disposal companies with the disposal. Precipitation method : Dissolve in water and add alkaline substances like calcium hydroxide or sodium carbonate to precipitate lead hydroxide or lead carbonate. Filter the precipitate and bury in a landfill site approved for hazardous-waste disposal. Roasting method : In case of a large amount of the chemical, recover metal lead by roast reduction method. <Note> ＊The pH of the neutralization should be above 8.5. The precipitation does not form completely below pH 8.5. ＊Dissolution test and dissolution standard for the disposal are in accordance with provisions under related laws. ＊In case of disposal by roasting method, it is desirable to entrust to disposal companies.
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)	:	1469
Proper Shipping Name (IMDG)	:	LEAD NITRATE
Packing group (IMDG)	:	II
Transport hazard class(es) (IMDG)	:	5.1 (6.1)

Air transport(IATA)

UN-No. (IATA)	:	1469
Proper Shipping Name (IATA)	:	Lead nitrate
Packing group (IATA)	:	II
Transport hazard class(es) (IATA)	:	5.1 (6.1)
Marine pollutant	:	Applicable
MFAG-No	:	141

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 dangeroous and hazardous chemicals, Japan Industrial Safety & Health Association. (2000-2001) .
Handbook of Poisonous and Deleterious substances, revised and enlarged edition, Yakumu Kohosa (2000) .
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.