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Safety Data Sheet

1. Chemical product and company identification

Product name : Indium(Ⅲ) nitrate n-hydrate, 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 : 20298
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 3
Health hazards	Serious eye damage/eye irritation	Category 2A

Hazard pictograms

Signal word : Warning

Hazard statements : May intensify fire; oxidizer
Causes serious eye irritation

Precautionary statements

Prevention : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep away from clothing and other combustible materials.
Wash hands, forearms and face thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.

Response : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

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
Indium(Ⅲ) nitrate n-hydrate	≥ 99.9	In(NO3)3・nH2O	Listed	237-393-5	13465-14-0

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. 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	0.1 mg/m³ (as In)

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	:	No data available
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	:	No data available
Density	:	No data available
Relative gas density	:	No data available
Solubility	:	Water: Soluble.
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.

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, indium oxides.

11. Toxicological information

Acute toxicity (oral)	:	No classification mouse LD50=3300mg/kg (as anhydrous salt)
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 Besides, it is described that indium and its compounds are irritants to skin, however, the original source of this information was not confirmed. Therefore, it was not adopted as the evidence of the classification.
Serious eye damage/irritation	:	Causes serious eye irritation It is described that the soluble indium salts are very irritating to the eyes, therefore this substance was classified into category 2A.
Respiratory sensitization	:	Classification not possible
Skin sensitization	:	Classification not possible
Germ cell mutagenicity	:	Classification not possible
Carcinogenicity	:	Classification not possible There is no information related to carcinogenicity of the substance itself. Therefore, classification was not possible due to lack of data. Besides, as results of the classification by other organizations of related compounds, indium phosphide is classified in group 2A by IARC and hardly soluble inorganic indium compounds are classified in category 2A by the Japan Society For Occupational Health. However, since this substance is a soluble compound, these classifications cannot be adopted.
Reproductive toxicity	:	Classification not possible
STOT-single exposure	:	Classification not possible May cause respitarory tract irritation.
STOT-repeated exposure	:	Classification not possible As for indium(Ⅲ) nitrate, it is reported that in a 20-week study (unknown frequency) on the oral route using rabbits, diffuse hepatocellular necrosis and changes in spleen weight and in blood occurred at 21920 mg/kg. However, the details are unknown.
Aspiration hazard	:	Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	:	Classification not possible Daphnia magna EC50=81.6mg/L/48h (as trihydrate)
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	:	Roasting method : Recover metal indium by roast reduction method. Or entrust approved waste disposal companies with the disposal. <Note> ＊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)	:	1477
Proper Shipping Name (IMDG)	:	NITRATES, INORGANIC, N.O.S.
Packing group (IMDG)	:	III
Transport hazard class(es) (IMDG)	:	5.1

Air transport(IATA)

UN-No. (IATA)	:	1477
Proper Shipping Name (IATA)	:	Nitrates, inorganic, n.o.s.
Packing group (IATA)	:	III
Transport hazard class(es) (IATA)	:	5.1
Marine pollutant	:	Not applicable
MFAG-No	:	140

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) . 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.