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Safety Data Sheet

1. Chemical product and company identification

Product name	:	Sodium azide

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	:	37824
Product numbers applied by the SDS	:	37824, 37975
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	Self-reactive substances and mixtures	Type G
Health hazards	Acute toxicity (oral)	Category 2
	Acute toxicity (dermal)	Category 1
	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity (single exposure)	Category 1 (cardiovascular, lung, central nervous system, systemic toxicity)
	Specific target organ toxicity (repeated exposure)	Category 1 (central nervous system, cardiovascular)
	Specific target organ toxicity (repeated exposure)	Category 2 (lung)
Environmental hazards	Aquatic acute	Category 1
	Aquatic chronic	Category 1

Hazard pictograms

Signal word	:	Danger
Hazard statements	:	Fatal if swallowed or in contact with skin Causes severe skin burns and eye damage Causes damage to organs (cardiovascular, lung, central nervous system, systemic toxicity) Causes damage to organs (central nervous system, cardiovascular)

through prolonged or repeated exposure
May cause damage to organs (lung) through prolonged or repeated exposure
Very toxic to aquatic life
Very toxic to aquatic life with long lasting effects

Precautionary statements

Prevention : Do not breathe dust.
Do not get in eyes, on skin, or on clothing.
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 SWALLOWED: Immediately call a POISON CENTER or doctor.
IF SWALLOWED: Rinse mouth. Do not induce vomiting.
IF ON SKIN: Wash with plenty of water.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water .
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.
IF exposed or concerned: Call a POISON CENTER or doctor.
Immediately call a POISON CENTER or doctor.
Get medical advice/attention if you feel unwell.
Rinse mouth.
Take off immediately all 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
Sodium azide	≥ 97	NaN3	Listed	247-852-1	26628-22-8

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, get medical treatment as soon as possible.

First-aid measures after eye contact : Wash the affected areas under running water for at least 15 minutes. 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.

Most Important Symptoms/Effects

Symptoms/effects	:	Inhalation causes cough, headache, nasal obstruction, blurred vision, breath shortness, unconsciousness, decreased heart rate and blood pressure.

5. Fire fighting measures

Suitable extinguishing media	:	Fire extinguishing agent based on dry graphite, sodium chloride or anhydrous sodium carbonate.
Unsuitable extinguishing media	:	Do not use extinguishing media containing water.
Fire hazard	:	Explosion risk in case of 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. Fight fire remotely due to the risk of explosion.
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	:	Remove nearby sources of ignition and prepare extinguishing media.

7. Handling and storage

Handling

Technical measures	:	If necessary, wear appropriate protective equipment to avoid contact with skin or inhalation of dust. Keep away from fire. Avoid heating, friction or shock.
Precautions for safe handling	:	Avoid formation of dust and aerosols.

Storage

Storage conditions	:	Keep the bottle tightly closed and store in a cool place. Keep away from fire and heat sources.
Material used in packaging/containers	:	Glass, polyethylene, polypropylene.

8. Exposure controls / Personal protection equipment

ACGIH Ceiling	0.29 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 : White

Odor : Almost 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 : ≈ 300 ° C (Decomposed into nitrogen and metallic sodium)

Flammability : Heating may cause a fire.

Vapor pressure : 1 Pa (20℃)

Relative density : 1.85 (25℃)

Density : No data available

Relative gas density : No data available

Solubility : Organic solvents: Practically insoluble in ethanol.
Water: 28.1 % (0℃)

Partition coefficient n-octanol/water (log Pow) : ≤ 3

Explosive limits (vol %) : No data available

Viscosity, kinematic : No data available

Particle characteristics : No data available

10. Stability and reactivity

Reactivity : It is highly nucleophilic and reacts with alkyl halides to produce organic azides.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : The acid produces toxic and explosive hydrazoic acid.
The aqueous solution reacts with heavy metal ions to produce explosive metal azides.

Conditions to avoid : Light, heat, moisture.

Incompatible materials : Acids, heavy metals.

Hazardous decomposition products : Hydrazoic acid, nitrogen oxides.

11. Toxicological information

Acute toxicity (oral)	:	Fatal if swallowed rat LD50=45mg/kg
Acute toxicity (dermal)	:	Fatal in contact with skin rabbit LD50=20mg/kg
Acute toxicity (inhalation)	:	No classification (gas) Classification not possible (vapor) Classification not possible (dust, mist)
Skin corrosion/irritation	:	Causes severe skin burns Based on a report that application to rabbit skin caused corrosion after 4-hour and 3 of 6 rabbits died, the substance was classified into category 1B.
Serious eye damage/irritation	:	Causes serious eye damage Since the substance is classified into category 1B for skin corrosion, category 1 was also applied for the eyes.
Respiratory sensitization	:	Classification not possible
Skin sensitization	:	Classification not possible
Germ cell mutagenicity	:	Classification not possible Classification not possible due to lack of data from in vivo mutagenicity tests. From in vitro mutagenicity tests, there are reports of a positive bacteria reverse mutation test, negative chromosomal aberration tests using human lymphocytes and Chinese hamster ovary cells, and a negative gene mutation test using mouse lymphoma cells. The strong mutagenic effects of the substance are considered to be specific to bacteria.
Carcinogenicity	:	No classification ACGIH classifies it as the group A4(not classifiable as a human carcinogen).
Reproductive toxicity	:	Classification not possible In a test where hamsters were given infusions of the substance from subcutaneously implanted osmotic mini-pumps between days 7 and 9 of gestation, 2/15 dams died. The incidence of early resorptions was significantly higher and encephalocele developed in foetuses. However, since the results were inadequately documented and the exposure route employed is unconventional, it is not possible to assess prenatal toxicity on the basis of this test. Classification was not possible.

STOT-single exposure	:	Causes damage to organs (cardiovascular, lung, central nervous system, systemic toxicity) The following case reports are available: Accidental poisoning of five laboratory technicians due to ingestion caused pounding of the heart, faintness and myocardial ischemia; Altered mental status, pronounced acidosis, cardiac arrhythmia, decreased cardiac output, and hypotension preceded the death of a chemist who ingested 10 to 20 g of the substance; and A laboratory technician who accidentally ingested a very small amount of the substance was observed to have tachycardia, hyperventilation, and hypotension. In addition, there is a report that the target organ of the substance is the cardiovascular system; it causes dilation of peripheral blood vessels which results in very marked reductions in blood pressure. Based on the data, the substance was classified into category 1 (cardiovascular). In above cases, dizziness, lipothymia, altered mental status, noncardiac pulmonary edema and metabolic acidosis were also observed. In a human suicide case by the ingestion of several grams of the substance, pulmonary edema and brain edema were the finding at autopsy. Based on the data, the substance was classified into category 1 (lung, central nervous system, systemic toxicity).
STOT-repeated exposure	:	Causes damage to organs (central nervous system, cardiovascular) through prolonged or repeated exposure May cause damage to organs (lung) through prolonged or repeated exposure In a 13-week repeated oral test with rats, clinical findings at the highest dose (20 mg/kg/day) included lethargy, labored breathing and death. Histopathological lesions were necrosis of the cerebrum and thalamus. In a 2-year repeated oral test with rats, reduced survival was observed at the highest dose (10 mg/kg/day), which was attributed to brain necrosis and cardiovascular collapse induced by exposure to the substance. Based on the data, the substance was classified into category 1 (central nervous system, cardiovascular). In addition, in the reported 13-week oral test with rats, congestion, hemorrhage, and edema in the lung were observed in rats receiving 20 mg/kg. Based on this data, the substance was also classified into category 2 (lung).
Aspiration hazard	:	Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	:	Very toxic to aquatic life Pseudokirchneriella subcapitata ErC50=0.348mg/L/96h
Aquatic chronic	:	Very toxic to aquatic life with long lasting effects

Persistence and degradability

Not readily biodegradable
Decomposition by HPLC : 1%

Bioaccumulative potential

Low bioconcentration
log Pow : ≤3.0

Mobility in soil

No additional information available

Hazardous to the ozone layer

Ozone	:	Classification not possible

13. Disposal considerations

Ecological waste information	:	Make 5% sodium azide water solution, and add a little exceeded sodium nitrite. Then add 0.1mol/l hydrochloric acid to generate nitrogen gas. Sodium azide reacts quantitatively. When potassium iodide-starch test paper has violet color, the decomposition finished. Sodium azide exists as hydrazoic acid in acidic solution, and a part of it evaporates. Wear proper equipment at the disposal work. 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)	:	1687
Proper Shipping Name (IMDG)	:	SODIUM AZIDE
Packing group (IMDG)	:	II
Transport hazard class(es) (IMDG)	:	6.1

Air transport(IATA)

UN-No. (IATA)	:	1687
Proper Shipping Name (IATA)	:	Sodium azide
Packing group (IATA)	:	II
Transport hazard class(es) (IATA)	:	6.1
Marine pollutant	:	Applicable
MFAG-No	:	153

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 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.