

Safety Data Sheet

1. Chemical product and company identification

Product name : Acrylamide standard

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 : 01078
 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	Acute toxicity (oral)	Category 3
	Acute toxicity (dermal)	Category 3
	Serious eye damage/eye irritation	Category 2A
	Skin sensitization	Category 1
	Germ cell mutagenicity	Category 1B
	Carcinogenicity	Category 1B
	Reproductive toxicity	Category 1B
	Specific target organ toxicity (single exposure)	Category 1 (nervous system)
	Specific target organ toxicity (repeated exposure)	Category 1 (nervous system, eye, blood, reproductive organs (male))
Environmental hazards	Aquatic acute	Category 3

Hazard pictograms



Signal word : Danger

Hazard statements : Toxic if swallowed or in contact with skin
 May cause an allergic skin reaction
 Causes serious eye irritation
 May cause genetic defects
 May cause cancer
 May damage fertility or the unborn child
 Causes damage to organs (nervous system)
 Causes damage to organs (nervous system, eye, blood, reproductive organs (male)) through prolonged or repeated exposure



Harmful to aquatic life

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.
Contaminated work clothing should not be allowed out of the workplace.
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 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.
Call a POISON CENTER or doctor if you feel unwell.
Get medical advice/attention if you feel unwell.
Rinse mouth.
If skin irritation or rash occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Take off immediately all contaminated clothing and wash it before reuse.
Take off contaminated clothing and wash it before reuse.
- 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
Acrylamide	≥ 99	C ₃ H ₅ NO	Listed	201-173-7	79-06-1

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 for at least 15 minutes. If necessary, get medical treatment.
- First-aid measures after : Give the victim water or salt water and make him vomit. Get



ingestion : 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 throat and throat ache and weakness.

5. Fire fighting measures

Suitable extinguishing media : Water, dry chemical powder, carbon dioxide, dry sand, alcohol resistant foam

Unsuitable extinguishing media : Foam extinguisher

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 from windward.

Dry chemical powder, carbon dioxide or dry sand should be used for small fires. Foam extinguisher is effective for a large scale fire.

Personal protection (Emergency response) : Wear breathing apparatus.

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 : 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 freezer and tightly closed (below -20°C).

Material used in packaging/containers : Glass, polyethylene, polypropylene.

8. Exposure controls / Personal protection equipment

ACGIH TWA	0.03 mg/m ³ (IFV)
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Remark (ACGIH)	Skin
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	: Colorless - white
Odor	: Odorless
pH	: No data available
Melting point	: 83 - 87 ° C
Freezing point	: No data available
Boiling point	: 87 ° C (0.2kPa)
Flash point	: 138 ° C (C.C.)
Auto-ignition temperature	: 424 ° C
Decomposition temperature	: No data available
Flammability	: Flammable
Vapor pressure	: 1 Pa (20°C)
Relative density	: 1.122 (30/4°C)
Density	: No data available
Relative gas density	: 2.46
Solubility	: Organic solvents: Soluble in acetone, ethanol. Water: 640 g/L (25°C)
Partition coefficient n-octanol/water (log Pow)	: -0.67
Explosive limits (vol %)	: 2.2 - 15.2 vol % (100°C)
Viscosity, kinematic	: No data available
Particle characteristics	: No data available

10. Stability and reactivity

Reactivity	: It is easily polymerized by ultraviolet rays, heat, and peroxides.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: May react violently when in contact with oxidizing substances.
Conditions to avoid	: Light, heat.
Incompatible materials	: Oxidizing substances.
Hazardous decomposition products	: Carbon monoxide, nitrogen oxides.



11. Toxicological information

Acute toxicity (oral)	: Toxic if swallowed rat LD50=124mg/kg
Acute toxicity (dermal)	: Toxic in contact with skin rat LD50=252mg/kg
Acute toxicity (inhalation)	: No classification (gas) No classification (vapor) Classification not possible (dust, mist)
Skin corrosion/irritation	: No classification Since it is considered to be slightly irritating from the human cases and the skin irritation test with rabbits, it was classified as "No classification".
Serious eye damage/irritation	: Causes serious eye irritation Based on a report that in an eye irritation test with rabbits, corneal opacity, conjunctival redness, and conjunctival edema were observed and disappeared in a 21-day observation period, it was classified into category 2A.
Respiratory sensitization	: Classification not possible
Skin sensitization	: May cause an allergic skin reaction There are multiple reports of contact dermatitis attributed to this substance in humans, and it is reported that two skin sensitization tests with guinea pigs were positive. Based on the above reports and the classification as occupational skin sensitizers group 2 by Japan Society For Occupational Health, it was classified into category 1.
Germ cell mutagenicity	: May cause genetic defects As for in vivo, there are positive results in dominant lethal tests with rats and mice, a reciprocal translocation test, a specific locus test, a chromosomal aberration test and a micronucleus test with mouse germ cells, a chromosomal aberration test and a micronucleus test with bone marrow cells of rats and mice, a gene mutation test with transgenic rats and mice, etc.. As for in vitro, there are negative results in bacterial reverse mutation tests, and in tests with mammalian cultured cells, it was positive in mouse lymphoma test and gave positive or negative results in gene mutation tests and a positive result in a chromosome aberration test. From the above, it was classified into category 1B. The substance is recognized to have mutagenicity by the Ministry of Health, Labor and Welfare.
Carcinogenicity	: May cause cancer IARC classifies it as group 2A (probably carcinogenic to humans).



Reproductive toxicity	: May damage fertility or the unborn child In dominant lethal tests in which male rats were given this substance by gavage for ten weeks or six months and mated with untreated females, an increase in the embryo loss after implantation at 5.0 mg/kg/day in the former case and an increase in the number of dead embryos at 6 mg/kg/day in the latter case were observed. On the other hand, in the developmental toxicity tests with pregnant mice or pregnant rats dosed by gavage during the organogenesis period, at doses where maternal toxicity occurred, no abnormality in fetuses was observed in rats, and only decreased body weight of fetuses and an increase in extra ribs were observed in mice. However, in a developmental toxicity test with pregnant rats dosed by gavage from the organogenesis period to postnatal day 10, an increase in postnatal mortality of pups was observed at a dose where decreased body weight gain and a neurological symptom were observed in maternal animals. From the above, it was classified into category 1B.
STOT-single exposure	: Causes damage to organs (nervous system) As for humans, there is a report on one case of a woman who ingested about 18 g of this substance in a suicide attempt showed hallucinations, hypotension, gastrointestinal tract bleeding, peripheral nerve disorder, hepatic disorders and seizures due to them, and two months after ingestion, peripheral neuropathy was still observed. As for experimental animals, there is a report that in a single oral dose test with rats, motor incoordination, hindlimb muscular dysfunction, hyperreflexia, persistent and clonic convulsions, and tremors were observed at 250 mg/kg/day corresponding to category 1. In addition, there is a report that in a single dermal administration test with rabbits, tremors and motor incoordination were observed at 784-1568 mg/kg corresponding to category 1-category 2. From the above, it was classified into category 1 (nervous system).
STOT-repeated exposure	: Causes damage to organs (nervous system, eye, blood, reproductive organs (male)) through prolonged or repeated exposure Human studies have shown that occupational exposure caused chronic neuropathy such as polyneuritis and contact dermatitis. Animal studies have shown that in 90-day repeated dose toxicity studies in rats exposed in drinking water, with the dose of the guidance value range of category 1, peripheral nerve injury and degeneration of the seminiferous epithelium were seen, and in 2-year drinking-water carcinogenicity studies in rats, with the dose of the guidance value range of category 1, retinal degeneration and bone marrow hyperplasia were observed. In summary, effects on the nervous system, eyes, reproductive organs (male), and blood were noted. Thus, it was classified into category 1 (nervous system, eye, blood, reproductive organs (male)).
Aspiration hazard	: Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	: Harmful to aquatic life Pseudokirchneriella subcapitata EC50=33.8mg/L/72h
Aquatic chronic	: No classification Pseudokirchneriella subcapitata NOEC=16mg/L/72h



Persistence and degradability

Readily biodegradable
BOD : 70%

Bioaccumulative potential

Low bioconcentration
BCF : 0.86-1.12

Mobility in soil

High mobility
Koc : 50

Hazardous to the ozone layer

Ozone : Classification not possible

13. Disposal considerations

Ecological waste information : Mixed with flammable organic solvents and burn in a chemical incinerator equipped with an afterburner and a scrubber. 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) : 2074
Proper Shipping Name (IMDG) : ACRYLAMIDE, SOLID
Packing group (IMDG) : III
Transport hazard class(es) : 6.1

(IMDG)

Air transport(IATA)

UN-No. (IATA) : 2074
Proper Shipping Name (IATA) : Acrylamide, solid
Packing group (IATA) : III
Transport hazard class(es) : 6.1

(IATA)

Marine pollutant : Not applicable

MFAG-No : 153P

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 Dangerous Substances Springer-Verlag Tokyo (1991) .
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.

