

Safety Data Sheet

1. Chemical product and company identification

Product name : N,N-Dimethylacetamide

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 : 10306
 Product numbers applied by the SDS : 10300, 10306, 10309
 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	Flammable liquids	Category 4
Health hazards	Acute toxicity (inhalation:vapors)	Category 3
	Serious eye damage/eye irritation	Category 2A
	Carcinogenicity	Category 1B
	Reproductive toxicity	Category 1B
	Specific target organ toxicity (single exposure)	Category 1 (central nervous system, liver)
	Specific target organ toxicity (single exposure)	Category 3 (narcosis)
	Specific target organ toxicity (repeated exposure)	Category 1 (liver, respiratory organs)

Hazard
pictograms



Signal word : Danger

Hazard statements : Combustible liquid
 Causes serious eye irritation
 Toxic if inhaled
 May cause drowsiness or dizziness
 May cause cancer
 May damage fertility or the unborn child
 Causes damage to organs (central nervous system, liver)
 Causes damage to organs (liver, respiratory organs) through prolonged or repeated exposure



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. Do not breathe mist/vapors. Wash hands, forearms and face thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response	: 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. IF exposed or concerned: Get medical advice/attention. Call a POISON CENTER or doctor. Call a POISON CENTER or doctor if you feel unwell. Get medical advice/attention if you feel unwell. If eye irritation persists: Get medical advice/attention.
Storage	: Store in a well-ventilated place. Keep container tightly closed. 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
Synonyms	: DMA, Acetyldimethylamine

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
N,N-Dimethylacetamide	≥ 98.5	C ₄ H ₉ NO	Listed	204-826-4	127-19-5

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. If necessary, get medical treatment.
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	: The chemical is volatile. Do not induce vomiting because it increases the risk of aspiration into the lungs. Get medical attention immediately. If necessary, rinse mouth with water.
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 headache, nausea, vomiting.

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. Alcohol-resistant foam extinguisher is effective for a large scale fire.

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 vapor. Conduct operations from upwind and evacuate people downwind. Remove all sources of ignition. Keep away personnel except for authorized ones from spillage area by stretching ropes.

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 : Absorb spill with inert material (e.g, diatomaceous earth, sand) and flush spillage 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 proper protective equipment to avoid contact with skin or inhalation of vapor. Fire is strictly prohibited.

Ventilate well at working places.

Precautions for safe handling : Avoid formation of vapor 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, fluorine resin, stainless steel.

Do not use polyvinyl chloride resin, polystyrene.

8. Exposure controls / Personal protection equipment

ACGIH TWA	10 ppm
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Remark (ACGIH)	Skin
Appropriate engineering controls Protective equipment	: Use with an enclosed system or a local exhaust ventilation.
Respiratory protection	: Chemical cartridge respirator with an organic vapor cartage or airline respirator
Hand protection	: Impervious protective gloves
Eye protection	: Safety goggles
Skin and body protection	: Protective clothing, protective boots

9. Physical and chemical properties

Physical state	: Liquid
Color	: Colorless.
Odor	: Characteristic
pH	: No data available
Melting point	: -20 ° C
Freezing point	: No data available
Boiling point	: 166.1 ° C
Flash point	: 63 ° C (C.C.)
Auto-ignition temperature	: 420 ° C
Decomposition temperature	: No data available
Flammability	: Flammable
Vapor pressure	: 3 hPa (20°C)
Relative density	: No data available
Density	: 0.941 - 0.944 g/cm ³ (20°C)
Relative gas density	: 3
Solubility	: Water: Miscible. Organic solvents: Readily soluble in diethyl ether, esters, ketones, aromatic compounds, practically insoluble in saturated hydrocabons.
Partition coefficient n-octanol/water (log Pow)	: -0.77
Explosive limits (vol %)	: 2 - 11.5 vol %
Viscosity, kinematic	: 0.98 mm ² /s (20°C)
Particle characteristics	: No data available

10. Stability and reactivity

Reactivity	: May react with strong oxidizing substances.
Chemical stability	: Stable under normal conditions. Causes hydrolysis by acids or alkaline substances.
Possibility of hazardous reactions	: Reacts with strong oxidizing substances vigorously and causes fire or explosion.
Conditions to avoid	: Light, heat.
Incompatible materials	: Strong oxidizing substances.
Hazardous decomposition products	: Carbon monoxide, nitrogen oxides.



11. Toxicological information

Acute toxicity (oral)	: No classification rat LD50=4300mg/kg
Acute toxicity (dermal)	: No classification rabbit LD50=2240mg/kg
Acute toxicity (inhalation)	: No classification (gas) Toxic if inhaled (vapor) rat LC50=1237.5ppm/4h No classification (dust, mist) rat LC50>24mg/L/4h
Skin corrosion/irritation	: No classification In a skin irritation test in rabbits (equivalent to OECD TG 404), mild erythematous plaques were observed in all animals at 24 hours and 72 hours, but they were reported to have recovered within 7 days.
Serious eye damage/irritation	: Causes serious eye irritation In the eye irritation test in rabbits (OECD TG 405 equivalent), moderate corneal opacity and conjunctival redness were observed in all animals at 24 hours, and the effects in 1 subject recovered within 8 days, but the effects in the other subject did not recover within 8 days (corneal opacity score: 1.3/1.3, iritis score: 0.3/0, conjunctival redness score: 2/2, conjunctival edema score: 0.7/1.3). Thus, it was classified into category 2A.
Respiratory sensitization	: Classification not possible
Skin sensitization	: No classification In a study in guinea pigs, irritant effects after challenge were observed in 4 cases induced by intradermal administration of 0.1% solution and in all 3 cases induced by dermal administration of 50% solution, but they were reported to disappear within 48 hours.
Germ cell mutagenicity	: No classification As for in vivo, a chromosomal aberration test with rat myeloid cells was negative and a dominant lethal test with rat was negative. As for in vitro, negative results have been reported in bacterial reverse mutation test, positive or indeterminate results in sister chromatid exchange test using mammalian cultured cells, and negative results in unscheduled DNA synthetic test using human fetal intestinal cells or human diploid fibroblasts.
Carcinogenicity	: May cause cancer In a 2-year inhalational carcinogenicity study in rats (OECD TG451, GLP), increased incidences of hepatocellular adenomas in males and hepatocellular adenomas and hepatocellular carcinomas were observed at the highest 450 ppm exposure. No increase in tumour development was observed in females. In a carcinogenicity study (OECD TG451, GLP) in mice exposed by inhalation for 2 years, increased incidences of hepatocellular adenomas were observed in males at the highest 300 ppm exposure. Increased incidence of hepatocellular carcinoma and hepatocellular adenoma was observed in females. Thus, it was classified into category 1B.



Reproductive toxicity	: May damage fertility or the unborn child In a study by gavage in rats, it has been reported that 400 mg/kg/day caused developmental effects including reduced body weight gain, increased post-implantation loss in parental animals, and malformations in offspring. In an inhalational exposure study in rabbits, skeletal variations in offspring, decreased body and placental weights in 570 ppm, and increased incidence of mild anomalies were observed in 199.5 ppm and above in which no generally toxic effects were observed in parental animals. Thus, it was classified into category 1B.
STOT-single exposure	: Causes damage to organs (central nervous system, liver) May cause drowsiness or dizziness In an oral study in 17 subjects with malignancies in the hope of anticancer effects, it was reported that "altered central nervous system function" was observed in 100 mg/kg/day and "hepatotoxicity, psychotic disorders, and definite central nervous system effects" were observed in 400 mg/kg/day. Thus, it was classified into category 1 (central nervous system, liver), category 3 (narcosis).
STOT-repeated exposure	: Causes damage to organs (liver, respiratory organs) through prolonged or repeated exposure In a study of 41 workers, the route of absorption of the substance is considered to be dermal and inhalation. The most common complaint or clinical sign was the hepatic system. In addition, there were many complaints of bronchial and upper airway, stomach and nervous system abnormalities, and arthralgia. It has been reported that BSP test is the highest detectable method for detecting liver damage, and that 63% of the subjects (19/30) were found to have liver damage and that there was a clear relationship between this liver damage and the duration of exposure to this chemical. Thus, it was classified into category 1 (liver, respiratory organs).
Aspiration hazard	: Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	: No classification Scenedesmus subspicatus ErC50>500mg/L/72h
Aquatic chronic	: No classification Scenedesmus subspicatus NOEC=500mg/L/72h

Persistence and degradability

Readily biodegradable
BOD : 80%

Bioaccumulative potential

Low bioconcentration
log Pow : -0.77

Mobility in soil

High mobility
Koc : 3.3

Hazardous to the ozone layer

Ozone : Classification not possible



13. Disposal considerations

Ecological waste information	: 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)	: 2810
Proper Shipping Name (IMDG)	: TOXIC LIQUID, ORGANIC, N.O.S.
Packing group (IMDG)	: III
Transport hazard class(es) (IMDG)	: 6.1

Air transport(IATA)

UN-No. (IATA)	: 2810
Proper Shipping Name (IATA)	: Toxic liquid, organic, n.o.s.
Packing group (IATA)	: III
Transport hazard class(es) (IATA)	: 6.1

Marine pollutant	: Not 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	: Dangerous Properties of Industrial Materials, 6th ed. N. I. Sax Van Nostrand Reinhold Company (1984) . Solvents Handbook, T, Asahara et al, Kodansha Scientific Ltd. (1976) . Handbook of 17625 Chemical Products, The Chemical Daily Co. (2025) . Handbook of Dangerous Substances Springer-Verlag Tokyo (1991) . NITE Chemical Risk Information Platform (NITE-CHRIP), National Institute of Technology and Evaluation.
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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.

