

Safety Data Sheet

1. Chemical product and company identification

Product name : Cumene

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 : 07471
 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 3
Health hazards	Acute toxicity (inhalation:vapors)	Category 4
	Serious eye damage/eye irritation	Category 2B
	Carcinogenicity	Category 1B
	Specific target organ toxicity (single exposure)	Category 1 (nervous system)
	Specific target organ toxicity (single exposure)	Category 3 (narcosis)
	Specific target organ toxicity (single exposure)	Category 3 (respiratory tract irritation.)
	Specific target organ toxicity (repeated exposure)	Category 2 (respiratory organs)
	Aspiration hazard	Category 1
Environmental hazards	Aquatic acute	Category 2
	Aquatic chronic	Category 2

Hazard pictograms



Signal word : Danger

Hazard statements : Flammable liquid and vapor
 May be fatal if swallowed and enters airways
 Causes eye irritation
 Harmful if inhaled
 May cause respiratory irritation



May cause drowsiness or dizziness
May cause cancer
Causes damage to organs (nervous system)
May cause damage to organs (respiratory organs) through prolonged or repeated exposure
Toxic to aquatic life
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 container tightly closed.
Ground and bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting equipment.
Use only non-sparking tools.
Take action to prevent static discharges.
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.
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 (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.
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.
Do not induce vomiting.
If eye irritation persists: Get medical advice/attention.
Collect spillage.
- Storage : Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
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 : Cumol, Isopropylbenzene



Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Cumene	≥ 98	C9H12	Listed	202-704-5	98-82-8

4. First aid measures

First aid measures

- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately 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 : May cause irritation of the skin and eyes, headache, dizziness, tinnitus, ataxia, disorientation, coma, respiratory disturbance, and death due to ventricular fibrillation.

5. Fire fighting measures

- Suitable extinguishing media : Dry chemical powder, carbon dioxide, dry sand, foam
- Unsuitable extinguishing media : Water spray
- 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 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 damage to the environment by flowing of spillage to rivers.

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 acids or 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 vinyl chloride resin, acrylic resin, polystyrene etc.

8. Exposure controls / Personal protection equipment

ACGIH TWA	5 ppm
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Appropriate engineering controls : Use with an enclosed system or a local exhaust ventilation.

Protective equipment

Respiratory protection : Chemical cartridge respirator 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 : Aromatic

pH : No data available

Melting point : -96.035 ° C

Freezing point : No data available

Boiling point : 152.392 ° C

Flash point : 43.9 ° C (C.C.)

Auto-ignition temperature : 423.9 ° C

Decomposition temperature : No data available

Flammability : Flammable

Vapor pressure : 5.3 hPa (20°C)

Relative density : No data available

Density : 0.858 - 0.863 g/cm³ (20°C)

Relative gas density : 4.15

Solubility : Organic solvents: Soluble in ethanol, diethyl ether, benzene.
Water: 0.005 % (25°C)

Partition coefficient n-octanol/water (log Pow) : 3.66



Explosive limits (vol %) : 0.9 - 6.5 vol %
Viscosity, kinematic : 0.85 mm²/s (25°C)
Particle characteristics : No data available

10. Stability and reactivity

Reactivity : It reacts with oxygen at 85°C under ultraviolet irradiation to produce cumene hydroxyperoxide.
When heated to 400–500°C in the presence of a silica-alumina catalyst, it decomposes to produce benzene and propylene. .
May react with oxidizing substances.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Stable under normal conditions of use.

Conditions to avoid : Light, heat.

Incompatible materials : Acids, oxidizing substances.

Hazardous decomposition products : Carbon monoxide.

11. Toxicological information

Acute toxicity (oral) : No classification
rat LD50=2700mg/kg

Acute toxicity (dermal) : No classification
rabbit LD50=10600mg/kg

Acute toxicity (inhalation) : No classification (gas)
Harmful if inhaled (vapor)
mouse LC50=2645ppm/4h
No classification (dust, mist)
rat LC50=39.3mg/L/4h

Skin corrosion/irritation : No classification
In the skin irritation test in rabbits (equivalent to OECD TG404), no oedema was observed at 24 and 72 hours, but mild and reversible erythema was observed in all animals. The individual mean scores (full score: 8) for the six patients were 2, 1.5, 2, 2, 2, and 1.5, respectively, and there was no difference between the intact and intact skin.

Serious eye damage/irritation : Causes eye irritation
In an eye irritation test in rabbits, irritation with moderate redness and massive lacrimation was observed, which recovered within 120 hours. Based on the above, it was classified into category 2B.

Respiratory sensitization : Classification not possible

Skin sensitization : No classification
In the guinea pig Maximisation test (OECD TG 406), the positive rate was 0% (0/20 cases) at 48 hours after challenge.

Germ cell mutagenicity : No classification
As for in vivo, the rat bone marrow micronucleus test by intraperitoneal administration was weakly positive, while the peripheral blood/bone marrow micronucleus test by gavage or inhalation exposure were all negative. As for in vitro, bacterial reverse mutation test, gene mutation test using mammalian culture cells and chromosome aberration test were negative.



Carcinogenicity	: May cause cancer In a combined 2-year inhalation carcinogenic chronic toxicity combined study in mice, there were increases in tumours involving lung malignancy in both sexes, hemangiosarcoma of the spleen in males, hepatocellular adenoma and hepatocellular adenoma in females, and in follicular cell adenoma of the thyroid in males. Mutations in K-ras and p53 were also evaluated in the lungs of mice exposed to this chemical. Mutations in K-ras and p53 were found in 87% and 52% of lung tumours, respectively, compared with 14% and 0% in controls, respectively. Thus, it was classified into category 1B.
Reproductive toxicity	: Classification not possible It has been reported that signs of embryo-fetal toxicity were observed in the high-dose group that caused marked maternal toxicity, but these were considered to be secondary effects of maternal toxicity. Although maternal toxicity was observed at moderate doses or below, no exposure-related developmental effects were observed. Therefore, the concern about the developmental effects of the substance is considered low, but due to the lack of toxic information on the effects on fertility, the substance was classified as "Classification not possible" due to the lack of data.
STOT-single exposure	: Causes damage to organs (nervous system) May cause drowsiness or dizziness May cause respiratory irritation In humans, inhalation or ingestion causes dizziness, ataxia, lethargy, headache, and unconsciousness. 200 ppm has been reported as a human TCLo. It has also been reported that workers exposed to cumene in 300-400 ppm complained of ocular and upper respiratory tract pain. In experimental animals, loss of consciousness has been reported in 1.98 mg/L in a single inhalation-exposure study in rats. In addition, it has been reported that hyperactivity and abnormal gait were observed in 2.5-6 mg/L in a single-dose inhalational exposure study in mice. From the above, it was classified into category 1 (nervous system) and category 3 (respiratory tract irritation, narcosis).
STOT-repeated exposure	: May cause damage to organs (respiratory organs) through prolonged or repeated exposure No severe effects have been seen in human experience. In experimental animals, hyperplasia of basal cells of the olfactory epithelium, hyperplasia of the respiratory epithelium, and mineralization of the renal papilla were observed in 1.23 mg/L in a 105-week repeated inhalation exposure study (GLP) in rats. In addition, hyperplasia of the renal tubule and hyperplasia of the transitional epithelium of the renal papilla were reported in 2.46 mg/L, and hyperplasia of the respiratory epithelium was reported in 4.92 mg/L. From the above, it was classified into category 2 (respiratory organs). The finding of renal tissue changes, etc. was judged to be based on alpha-2u globulin nephropathy and was not adopted as a target organ.
Aspiration hazard	: May be fatal if swallowed and enters airways This substance is a hydrocarbon and its kinematic viscosity is 0.85 mm ² /s at 25 °C. Thus, it was classified into category 1.



12. Ecological information

Ecotoxicity

Aquatic acute : Toxic to aquatic life
Mysidopsis bahia LC50=1.2mg/L/96h
Aquatic chronic : Toxic to aquatic life with long lasting effects
Daphnia magna NOEC=0.35mg/L/21-day

Persistence and degradability

Not readily biodegradable
BOD : 33%

Bioaccumulative potential

Low bioconcentration
BCF : 35.5

Mobility in soil

Low mobility
Koc : 700

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) : 1918
Proper Shipping Name (IMDG) : ISOPROPYLBENZENE
Packing group (IMDG) : III
Transport hazard class(es) (IMDG) : 3

Air transport(IATA)

UN-No. (IATA) : 1918
Proper Shipping Name (IATA) : Isopropylbenzene
Packing group (IATA) : III
Transport hazard class(es) (IATA) : 3

Marine pollutant : Applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollutant category : Y
MFAG-No : 130

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

: NITE Chemical Risk Information Platform (NITE-CHRIP), National Institute of Technology and Evaluation.
Solvents Handbook, T, Asahara et al, Kodansha Scientific Ltd. (1976) .
Handbook of Dangerous Substances Springer-Verlag Tokyo (1991) .
Handbook of 17625 Chemical Products, The Chemical Daily Co. (2025) .

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.

