

Safety Data Sheet

1. Chemical product and company identification

Product name : tert-Butyl methyl ether standard stock solution

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 : 05060
 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 2
Health hazards	Acute toxicity (oral)	Category 4
	Serious eye damage/eye irritation	Category 2A
	Reproductive toxicity	Category 1B
	Specific target organ toxicity (single exposure)	Category 1 (central nervous system, visual organs, systemic toxicity)
	Specific target organ toxicity (single exposure)	Category 3 (narcosis)
	Specific target organ toxicity (repeated exposure)	Category 1 (central nervous system, visual organs)

Hazard pictograms



Signal word : Danger

Hazard statements : Highly flammable liquid and vapor
 Harmful if swallowed
 Causes serious eye irritation
 May cause drowsiness or dizziness
 May damage fertility or the unborn child
 Causes damage to organs (central nervous system, visual organs, systemic toxicity)
 Causes damage to organs (central nervous system, visual 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. 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. Wear protective gloves/protective clothing/eye protection/face protection.
Response	: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. 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. Rinse mouth. If eye irritation persists: Get medical advice/attention.
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	: Mixture
Synonyms	: Methyl tert-butyl ether standard stock solution, MTBE standard stock solution

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
tert-Butyl methyl ether	0.1	C ₅ H ₁₂ O	Listed	216-653-1	1634-04-4
Methanol	≥ 99	CH ₄ O	Listed	200-659-6	67-56-1

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 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.

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)	: 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 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. Prevent build-up of electrostatic charges (e.g. by grounding) .
Precautions for safe handling	: Avoid formation of vapor and aerosols. Do not allow contact with oxidizing substances.

Storage

Storage conditions	: Store in a refrigerator and tightly closed (0-6°C).
--------------------	---



Material used in : Glass, fluorine resin, stainless steel.
packaging/containers Do not use polyvinyl chloride resin, acrylic resin.

8. Exposure controls / Personal protection equipment

tert-Butyl methyl ether	
ACGIH TWA	50 ppm
Methanol	
ACGIH TWA	200 ppm
ACGIH STEL	250 ppm
Remark (ACGIH)	Skin

Appropriate engineering controls : Use with an enclosed system or a local exhaust ventilation.

Protective equipment

Respiratory protection : If necessary, wear chemical cartridge respirator with an organic vapor cartage

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 : No data available

Freezing point : No data available

Boiling point : 64.51 ° C (as methanol)

Flash point : 12 ° C (C.C.) (as methanol)

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Flammability : Flammable

Vapor pressure : No data available

Relative density : No data available

Density : No data available

Relative gas density : No data available

Solubility : Water: Miscible.

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 : 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	: Oxidizing substances.
Hazardous decomposition products	: Carbon monoxide.

11. Toxicological information

Acute toxicity (oral)	: Harmful if swallowed ATEmix=500mg/kg
Acute toxicity (dermal)	: No classification ATEmix>2000mg/kg
Acute toxicity (inhalation)	: No classification (gas) No classification (vapor) ATEmix>20000ppm Classification not possible (dust, mist)
Skin corrosion/irritation	: Classification not possible
Serious eye damage/irritation	: Causes serious eye irritation Methanol : Although there is an unpublished report that when applied to the skin of rabbits under occlusive conditions for up to 20-hour the substance was not irritating, classification was not possible due to lack of data in a skin irritation test. As relevant information, although there is a report that application to rabbit skin for 24-hour under occlusive conditions caused moderate skin irritation, this irritation was probably a result of the defatting action of methanol.
Respiratory sensitization	: Classification not possible
Skin sensitization	: No classification tert-Butyl methyl ether : No skin sensitization was observed in guinea pig maximization tests. Methanol : Based on the description that Methanol has no skin sensitization by maximization test using guinea pig, it was classified as "No classification".
Germ cell mutagenicity	: No classification tert-Butyl methyl ether : As for in vivo tests, there are negative data on micronucleus assay in mouse peripheral blood, chromosome aberration tests in rat and mouse marrow cells, gene mutation test in mouse spleen lymphocytes, and unscheduled DNA synthesis test in mouse liver cells, and positive data on comet assay in rat lymphocytes. As for in vitro tests, there are negative data on reverse mutation test in bacteria, negative data on gene mutation examination, micronucleus assay, and chromosome aberration tests in cultured mammalian cells, positive data on mouse lymphoma assay, and equivocal results on sister chromatid exchange test. Methanol : Methanol is negative in mouse erythrocyte micronucleus tests (in vivo somatic cell mutagenicity tests) by inhalation exposure and by intraperitoneal administration.
Carcinogenicity	: Classification not possible



Reproductive toxicity	: May damage fertility or the unborn child Methanol : In a developmental toxicity test by inhalation exposure to mice during organogenesis period, fetal resorptions and exencephaly were observed. Additionally, similar effects including cleft palate were reported in other inhalation and oral exposure tests. For effects of methanol on reproduction, scientific decisions concerning health risks are generally based on what is known as weight-of-evidence approach. Recognizing the lack of human data and the clear evidence of laboratory animal effects, it was concluded that methanol may adversely affect human development if exposures are sufficiently high. Based on the information, the substance was considered to be a presumed human reproductive toxicant and it was classified into category 1B.
STOT-single exposure	: Causes damage to organs (central nervous system, visual organs, systemic toxicity) May cause drowsiness or dizziness Methanol : The symptoms of acute poisoning from the substance include CNS-depression. Formate accumulates in the blood during a latency period which leads to metabolic acidosis, visual impairment or even total blindness, headaches, dizziness, nausea, vomiting, Kussmaul breathing and coma. In some cases death is the final outcome. Further, CNS disorders, especially parkinsonism-like extrapyramidal symptoms were reported. Morphological changes, necrosis in the white substance of the brain were demonstrated. Based on the human information, the substance was classified into category 1 (central nervous system). Additionally, the eye was regarded as a target organ since visual impairment is a characteristic effect. Additionally, systemic toxicity is regarded as a target organ based on the reports of headache, nausea, vomiting, tachypnea and coma as signs of metabolic acidosis. The effects of single exposures by inhalation include narcosis. As an acute toxicity in humans, a narcotic effect results from central nervous system depression. Based on the data, the substance was classified into category 3 (narcosis).
STOT-repeated exposure	: Causes damage to organs (central nervous system, visual organs) through prolonged or repeated exposure Methanol : Based on a report that the most noted health consequence of longer-term exposure to lower levels of methanol is a broad range of ocular effects, and that cases of chronic poisoning from occupational exposure to methanol were manifested by bilateral blindness, it was classified into category 1 (visual organs). Additionally, based on the report that cases of chronic poisoning from repeated exposure to methanol vapour are manifested by headache, giddiness, insomnia, and gastric disturbances, it was classified into category 1 (central nervous system).
Aspiration hazard	: Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	: No classification Crustacean LC50m>100mg/L
Aquatic chronic	: No classification

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 : 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) : 1230

Proper Shipping Name (IMDG) : METHANOL MIXTURE

Packing group (IMDG) : II

Transport hazard class(es) : 3 (6.1)

(IMDG)

Air transport(IATA)

UN-No. (IATA) : 1230

Proper Shipping Name (IATA) : Methanol mixture

Packing group (IATA) : II

Transport hazard class(es) : 3 (6.1)

(IATA)

Marine pollutant : Not applicable

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

Pollutant category : Y

MFAG-No : 131

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 el, 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.

