Safety Data Sheet

1. Chemical product and company identification

Product name : tert-Butyl methyl ether standard stock solution

Company information

: KANTO CHEMICAL CO., INC. Name of manufacturer

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 Category 2A

irritation

Reproductive toxicity Category 1B

Specific target organ toxicity Category 1 (central nervous system, visual

(single exposure)

organs, systemic toxicity) Category 3 (narcosis)

Specific target organ toxicity

(single exposure)

Specific target organ toxicity

Category 1 (central nervous system, visual

(repeated exposure) 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.

: 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 .

 $\ensuremath{\mathsf{IF}}$ 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

inging

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

Response

: 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	C5H12O	Listed	216-653-1	1634-04-4
Methanol	≥ 99	CH40	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.

 $First-aid\ measures\ after\ skin$

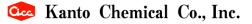
contact

: 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. : Wear breathing apparatus.

Personal protection (Emergency

response)

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 $(0-6^{\circ}C)$.



Material used in packaging/containers

: Glass, fluorine resin, stainless steel.

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. 0dor Characteristic No data available рН No data available Melting point Freezing point No data available 64.51 °C (as methanol) Boiling point 12 ° C (C.C.) (as methanol) Flash point

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- : No data available

octanol/water (log Pow)

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 : Carbon monoxide.

products

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

Skin sensitization

: Classification not possible

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

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

STOT-single exposure

: Causes damage to organs (central nervous system, visual organs, systemic toxicity)

toxicant and it was classified into category 1B.

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

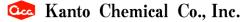
Aquatic acute : No classification

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



<< 05060 tert-Butyl methyl ether standard stock solution >>

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 $\hbox{it does not represent a guarantee the properties of the product. The Safety Data Sheet (SDS) is}\\$ prepared based on JIS Z7253.