Issue date: 9/30/2003
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Safety Data Sheet

1. Chemical product and company identification

Product name	:	Mesitylene

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	:	25147
Product numbers applied by the SDS	:	25147, 26192
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	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2B
	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 1 (central nervous system, 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 skin and eye irritation
May cause respiratory irritation
May cause drowsiness or dizziness
Causes damage to organs (central nervous system, respiratory organs) through prolonged or repeated exposure
Toxic to aquatic life

Toxic to aquatic life with long lasting effects

Precautionary statements

Prevention : 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: Wash with plenty of water.
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.
Call a POISON CENTER or doctor if you feel unwell.
Get medical advice/attention if you feel unwell.
Do not induce vomiting.
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
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 : 1,3,5-Trimethylbenzene

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Mesitylene	≥ 98	C9H12	Listed	203-604-4	108-67-8

4. First aid measures

First aid measures

First-aid measures after : Remove the victim to fresh air, and make him blow his nose and

inhalation		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.

Most Important Symptoms/Effects

Symptoms/effects	:	Inhalation causes confusion, cough, dizziness, lethargy, headache, throat ache, vomiting.

5. Fire fighting measures

Suitable extinguishing media	:	Dry chemical, CO2, dry sand, or alcohol-resistant foam
Unsuitable extinguishing media	:	Water spray, 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 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	:	Use with an enclosed system or a local exhaust ventilation. Use in well-ventilated areas. 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 vinyl chloride resin, acrylic resin, polystyrene etc.

8. Exposure controls / Personal protection equipment

ACGIH TWA	10 ppm

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

Protective equipment

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	:	Aromatic
pH	:	No data available
Melting point	:	-44.72 ° C
Freezing point	:	No data available
Boiling point	:	164.716 ° C
Flash point	:	50 ° C (C.C.)
Auto-ignition temperature	:	550 ° C
Decomposition temperature	:	No data available
Flammability	:	Flammable
Vapor pressure	:	2 hPa (20℃)
Relative density	:	No data available
Density	:	0.862 - 0.867 g/cm³ (20℃)
Relative gas density	:	4.15
Solubility	:	Water: Insoluble. Organic solvents: Soluble in ethanol, diethyl ether.
Partition coefficient n-octanol/water (log Pow)	:	3.42
Explosive limits (vol %)	:	No data available
Viscosity, kinematic	:	0.843 mm²/s (20℃)
Particle characteristics	:	No data available

10. Stability and reactivity

Reactivity	:	Oxidation with potassium permanganate produces ubithenic acid and

		trimesic acid. When boiled with aluminum chloride, the methyl group is transferred to produce m-xylene, zulene, isozulene etc..
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.

11. Toxicological information

Acute toxicity (oral)	:	No classification rat LD50=5000mg/kg
Acute toxicity (dermal)	:	Classification not possible
Acute toxicity (inhalation)	:	No classification (gas) Classification not possible (vapor) No classification (dust, mist) rat LC50=24mg/L/4h
Skin corrosion/irritation	:	Causes skin irritation In the skin irritation test (OECD TG 404) in rabbits, very slight redness was observed from 1 hour after application and became moderate to severe after 144 hours. In addition, it has been reported that slight edema was observed from 1 hour, but disappeared after 144 hours. Thus, it was classified into category2.
Serious eye damage/irritation	:	Causes eye irritation In an eye irritation study in rabbits (24-hour application), slight irritation was reported in the eyes. Thus, it was classified into category 2B.
Respiratory sensitization	:	Classification not possible Besides, among 37 individuals exposed for 7 years to vapours of a mixed solvent containing the isomer of the substance, 70% of humans exposed to the highest concentration reported onset of asthmatic bronchitis, although the possibility of benzene contamination has not been ruled out.
Skin sensitization	:	Classification not possible
Germ cell mutagenicity	:	No classification As for in vivo, both the micronucleus test with mouse bone marrow cells and the sister chromatid exchange test with mouse bone marrow cells were reported to be negative. Subsequent evaluation revealed negative results in the micronucleus test in mice, whereas the sister chromatid exchange test results were judged to be positive at higher doses. However, the maximum intraperitoneal dose reached 80% of LD50 level, and the maximum increase in SCE frequency was also reported to be only 1.5 times that of the control group. As for in vitro, the bacterial reverse mutation assay was negative with or without metabolic activity. EPA concluded that both isomers of trimethylbenzene are poorly evidenced to be genotoxic.
Carcinogenicity	:	Classification not possible
Reproductive toxicity	:	Classification not possible In a developmental toxicity study in rats following inhalation exposure, no developmental toxicity was reported. No developmental effects were observed, but there are no data on effects on fecundity.

STOT-single exposure	:	May cause drowsiness or dizziness May cause respiratory irritation In a single inhalational exposure study in 5000-9000 ppm, central nervous system depression has been reported. In a single inhalation exposure study in rats, 2240 ppm was extended from anaesthetic effects to respiratory failure, resulting in 4/16 deaths. In addition, it has been reported that pulmonary congestion was observed at necropsy. Thus, it was classified into category 3 (respiratory tract irritation, narcosis).
STOT-repeated exposure	:	Causes damage to organs (central nervous system, respiratory organs) through prolonged or repeated exposure A study was conducted on painters exposed for several years to thinners containing >30% of the substance and >50% of the isomers of the substance. High rates of headache, fatigue, dizziness, and numbness were seen in these workers, bronchitis with asthma was common, and gastrointestinal symptoms were also seen in many workers. In addition, blood effects were observed, but it has been reported that benzene mixed with solvent may be the cause. In a 4-week inhalation exposure study in rats, it was reported that the duration of passive avoidance behavior was shortened and the number of active avoidance behavior was increased in 25 ppm and above. Thus, it was classified into category 1 (central nervous system, respiratory organs).
Aspiration hazard	:	May be fatal if swallowed and enters airways It has been reported that persistence of this substance in the lungs may cause chemical pneumonitis. The kinematic viscosity at 20℃ and 50℃ has been reported to be 0.843 and 0.630 mm2/s, respectively.

12. Ecological information

Ecotoxicity

Aquatic acute	:	Toxic to aquatic life Daphnia magna LC50=6mg/L/48h
Aquatic chronic	:	Toxic to aquatic life with long lasting effects Daphnia magna NOEC=0.4mg/L/21-day

Persistence and degradability

Not readily biodegradable
BOD : 0%

Bioaccumulative potential

Low bioconcentration
BCF : 23-342 (150μg/L), 42-328 (15μg/L)

Mobility in soil

Low mobility
Koc : 602

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)	:	2325
Proper Shipping Name (IMDG)	:	1,3,5-TRIMETHYLBENZENE
Packing group (IMDG)	:	III
Transport hazard class(es) (IMDG)	:	3

Air transport(IATA)

UN-No. (IATA)	:	2325
Proper Shipping Name (IATA)	:	1,3,5-Trimethylbenzene
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	:	X
MFAG-No	:	129

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 : Solvents Handbook, T, Asahara el, Kodansha Scientific Ltd. (1976) .
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.