SAFETY DATA SHEET

Creation Date Oct-2013 **Revision Date** Oct-2018 **Revision Number** 2

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Description: **tert-Butyl methyl ether**
Product Grade: ER, SQ, HPLC
Cat No.: Q12055, Q21995, Q2199Q, Q43096
Synonyms 2-Methyl-2-methoxy propane; MTBE; Methyl tert-butyl ether
CAS-No 1634-04-4
EC-No. 216-653-1
Molecular Formula C5 H12 O

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Laboratory chemicals.
Uses advised against No Information available

1.3. Details of the supplier of the safety data sheet

Company Thermo Fisher Scientific India Pvt. Ltd
403-404, B-wing, Delphi, Hiranandani Business Park,
Powai, Mumbai 400076, INDIA.
E-mail address laboratorysolutions@thermofisher.com

1.4. Emergency telephone number

India Toll Free: 18 00 22 22 30
Chemtrec US: (800)424-9300
Chemtrec EU: 001(202)483-7616

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards
Flammable liquids — Category 2

Health hazards

Skin Corrosion/irritation — Category 2

Environmental hazards
Based on available data, the classification criteria are not met

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Symbol(s) Xi - Irritant
F - Highly flammable
R-phrase(s) R11 - Highly flammable
R38 - Irritating to skin

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16.

2.2. Label elements

Signal Word **Danger**

Hazard Statements

H225 - Highly flammable liquid and vapor
H315 - Causes skin irritation

Precautionary Statements

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P240 - Ground/Bond container and receiving equipment
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

2.3. Other hazards

No information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	CAS-No	EC-No.	Weight %	CLP Classification - Regulation (EC) No 1272/2008	DSD Classification - 67/548/EEC
Methyl tert-butyl ether	1634-04-4	EEC No. 216-653-1	>95	Skin Irrit. 2 (H315) Flam. Liq. 2 (H225)	F; R11 Xi; R38

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Ingestion Do not induce vomiting. Obtain medical attention.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.

Protection of First-aiders Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

4.2. Most important symptoms and effects, both acute and delayed

Breathing difficulties. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically. Symptoms may be delayed.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Cool closed containers exposed to fire with water spray.

Extinguishing media which must not be used for safety reasons
Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

Hazardous Combustion Products
Carbon monoxide (CO), Carbon dioxide (CO_2).

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges. Ensure adequate ventilation.

6.2. Environmental precautions

Should not be released into the environment. See Section 12 for additional ecological information.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharges.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Use explosion-proof equipment. Take precautionary measures against static discharges. Use only under a chemical fume hood. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Flammables area. Keep away from heat and sources of ignition. Keep container tightly closed in a dry and well-ventilated place. May form explosive peroxides on prolonged storage.

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s): **EU** - Commission Directive 2006/15/EC of 7 February 2006 establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC on the protection of the health and safety of workers from the risks related to chemical agents at work. **UK** - EH40/2005 Containing the workplace exposure limits (WELs) for use with the Control of Substances Hazardous to Health Regulations (COSHH) 2002 (as amended). Updated by September 2006 official press release and October 2007 Supplement.

Component	European Union	The United Kingdom	France	Belgium	Spain
Methyl tert-butyl ether	TWA: 50 ppm 8 hr TWA: 183.5 mg/m³ 8 hr STEL: 100 ppm 15 min STEL: 367 mg/m³ 15 min	STEL: 100 ppm 15 min STEL: 367 mg/m³ 15 min TWA: 50 ppm 8 hr TWA: 183.5 mg/m³ 8 hr	TWA / VME: 50 ppm (8 heures). TWA / VME: 183.5 mg/m³ (8 heures). STEL / VLCT: 367 mg/m³. STEL / VLCT: 100 ppm.	TWA: 40 ppm 8 uren TWA: 146 mg/m³ 8 uren STEL: 100 ppm 15 minuten STEL: 367 mg/m³ 15 minuten	STEL / VLA-EC: 100 ppm (15 minutos). STEL / VLA-EC: 367 mg/m³ (15 minutos). TWA / VLA-ED: 50 ppm (8 horas) TWA / VLA-ED: 183.5 mg/m³ (8 horas)

Component	Italy	Germany	Portugal	The Netherlands	Finland
Methyl tert-butyl ether		TWA: 50 ppm (8 Stunden). AGW - exposure factor 1.5 TWA: 180 mg/m³ (8 Stunden). AGW - exposure factor 1.5 TWA: 50 ppm (8 Stunden). MAK TWA: 180 mg/m³ (8 Stunden). MAK Höhepunkt: 75 ppm Höhepunkt: 270 mg/m³	STEL: 100 ppm 15 minutos STEL: 367 mg/m³ 15 minutos TWA: 50 ppm 8 horas TWA: 183.5 mg/m³ 8 horas	STEL: 360 mg/m³ 15 minuten TWA: 180 mg/m³ 8 uren	TWA: 50 ppm 8 tunteina STEL: 100 ppm 15 minuutteina

Component	Austria	Denmark	Switzerland	Poland	Norway
Methyl tert-butyl ether	MAK-KZW: 100 ppm 15 Minuten MAK-KZW: 360 mg/m³ 15 Minuten MAK-TMW: 50 ppm 8 Stunden MAK-TMW: 180 mg/m³ 8 Stunden	TWA: 40 ppm 8 timer TWA: 144 mg/m³ 8 timer	STEL: 75 ppm 15 Minuten STEL: 270 mg/m³ 15 Minuten TWA: 50 ppm 8 Stunden TWA: 180 mg/m³ 8 Stunden	STEL: 270 mg/m³ 15 minutach TWA: 180 mg/m³ 8 godzinach	TWA: 50 ppm 8 timer TWA: 183.5 mg/m³ 8 timer STEL: 100 ppm 15 minutter. listed in the List of Administrative Norms STEL: 367 mg/m³ 15 minutter. listed in the List of Administrative Norms

Component	Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
Methyl tert-butyl ether	TWA: 50 ppm TWA: 183.5 mg/m³ STEL : 100 ppm STEL : 367 mg/m³	TWA-GVI: 50 ppm 8 satima. TWA-GVI: 183.5 mg/m³ 8 satima. STEL-KGVI: 100 ppm 15 minutama. STEL-KGVI: 367 mg/m³ 15 minutama.	TWA: 50 ppm 8 hr. TWA: 183.5 mg/m³ 8 hr. STEL: 100 ppm 15 min STEL: 367 mg/m³ 15 min	STEL: 367 mg/m³ STEL: 100 ppm TWA: 183.5 mg/m³ TWA: 50 ppm	TWA: 100 mg/m³ 8 hodinách. Ceiling: 200 mg/m³

Component	Estonia	Gibraltar	Greece	Hungary	Iceland
Methyl tert-butyl ether	TWA: 50 ppm 8 tundides. TWA: 180 mg/m³ 8 tundides. STEL: 75 ppm 15 minutites. STEL: 250 mg/m³ 15 minutites.	TWA: 183.5 mg/m³ 8 hr TWA: 50 ppm 8 hr STEL: 367 mg/m³ 15 min STEL: 100 ppm 15 min	STEL: 100 ppm STEL: 367 mg/m³ TWA: 50 ppm TWA: 183.5 mg/m³	STEL: 367 mg/m³ 15 percekben. CK TWA: 183.5 mg/m³ 8 órában. AK	STEL: 100 ppm STEL: 367 mg/m³ TWA: 50 ppm 8 klukkustundum. TWA: 183.5 mg/m³ 8 klukkustundum. Ceiling: 100 ppm Ceiling: 367 mg/m³

Component	Latvia	Lithuania	Luxembourg	Malta	Romania
Methyl tert-butyl ether	STEL: 100 ppm STEL: 367 mg/m³ TWA: 50 ppm TWA: 183.5 mg/m³	TWA: 50 ppm IPRD TWA: 183.5 mg/m³ IPRD STEL: 100 ppm STEL: 367 mg/m³	TWA: 50 ppm 8 Stunden STEL: 367 mg/m³ 15 Minuten STEL: 100 ppm 15 Minuten	TWA: 183.5 mg/m³ TWA: 50 ppm STEL: 367 mg/m³ 15 minuti STEL: 100 ppm 15 minuti	TWA: 50 ppm 8 ore TWA: 183.5 mg/m³ 8 ore STEL: 100 ppm 15 minute STEL: 367 mg/m³ 15 minute

Component	Russia	Slovak Republic	Slovenia	Sweden	Turkey
Methyl tert-butyl ether	TWA: 100 mg/m³ STEL: 300 mg/m³ vapor	Ceiling: 367 mg/m³	TWA: 50 ppm 8 urah TWA: 183.5 mg/m³ 8 urah STEL: 100 ppm 15 minutah STEL: 367 mg/m³ 15 minutah	STV: 60 ppm 15 minuter STV: 220 mg/m³ 15 minuter LLV: 30 ppm 8 timmar. LLV: 110 mg/m³ 8 timmar.	STEL: 100 ppm 15 dakika STEL: 367 mg/m³ 15 dakika

Biological limit values
This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Monitoring methods
BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
MDHS70 General methods for sampling airborne gases and vapours
MDHS 88 Volatile organic compounds in air. Laboratory method using diffusive samplers, solvent desorption and gas chromatography
MDHS 96 Volatile organic compounds in air - Laboratory method using pumped solid sorbent tubes, solvent desorption and gas chromatography

Derived No Effect Level (DNEL) No information available

Route of exposure	Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
Oral				
Dermal				
Inhalation				

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering Measures
Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment.
Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection Safety glasses with side-shields (European standard - EN 166)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Nitrile rubber	< 211 minutes	0.38 mm	Level 4	Permeation rate 1 µg/cm2/min
Viton (R)	< 152 minutes	0.7 mm	Level 4	Permeation rate 17 µg/cm2/min
			EN 374	As tested under EN374-3 Determination of Resistance to Permeation by Chemicals

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

Respiratory Protection No protective equipment is needed under normal use conditions.

Large scale/emergency use Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced
Recommended Filter type: low boiling organic solvent Type AX Brown conforming to EN371

Small scale/Laboratory use Maintain adequate ventilation Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls No information available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Colorless	
Physical State	Liquid	
Odor	Petroleum distillates	
Odor Threshold	No data available	
pH	No information available	
Melting Point/Range	-110 °C / -166 °F	
Softening Point	No data available	
Boiling Point/Range	54 - 56 °C / 129.2 - 132.8 °F	
Flash Point	-28 °C / -18.4 °F	**Method -** No information available

Evaporation Rate	No data available	
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	**Lower** 1.6 vol%	
	Upper 8.4 vol%	
Vapor Pressure	268 mbar @ 20 °C	
Vapor Density	0.2	(Air = 1.0)
Specific Gravity / Density	0.740	
Bulk Density	Not applicable	Liquid
Water Solubility	51 g/L (20°C)	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	**log Pow**	
Methyl tert-butyl ether	1.06	
Autoignition Temperature	224 - °C / 435.2 - °F	
Decomposition temperature	No data available	
Viscosity	0.36 mPa.s at 20 °C	
Explosive Properties	No information available	Vapors may form explosive mixtures with air
Oxidizing Properties	No information available	

9.2. Other information

Molecular Formula	C5 H12 O
Molecular Weight	88.15

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

None known, based on information available

10.2. Chemical stability

Stable under normal conditions

10.3. Possibility of hazardous reactions

Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

10.4. Conditions to avoid

Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO_2).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

(a) acute toxicity;

Oral	Based on available data, the classification criteria are not met
Dermal	Based on available data, the classification criteria are not met
Inhalation	Based on available data, the classification criteria are not met

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Methyl tert-butyl ether	2963 mg/kg (Rat)	10000 mg/kg (Rabbit)	23576 ppm (Rat) 4 h

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;
Respiratory No data available
Skin No data available

(e) germ cell mutagenicity; Based on available data, the classification criteria are not met

Mutagenic effects have occurred in experimental animals

(f) carcinogenicity; No data available

The table below indicates whether each agency has listed any ingredient as a carcinogen
Limited evidence of a carcinogenic effect

Component	EU	UK	Germany	IARC
Methyl tert-butyl ether			Cat. 3B	group 3

(g) reproductive toxicity; Based on available data, the classification criteria are not met
Reproductive Effects Experiments have shown reproductive toxicity effects on laboratory animals.
Developmental Effects Developmental effects have occurred in experimental animals.
Teratogenicity Teratogenic effects have occurred in experimental animals.

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

Target Organs Skin, Eyes, Central nervous system (CNS), Liver, Kidney, Blood.

(j) aspiration hazard; No data available

Other Adverse Effects Tumorigenic effects have been reported in experimental animals. See actual entry in RTECS for complete information

Symptoms / effects,both acute and delayed Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity
Ecotoxicity effects . Do not empty into drains.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Methyl tert-butyl ether	887 mg/L LC50 96 h 100 mg/L LC50 96 h 929 mg/L LC50 96 h 672 mg/L LC50 96 h	542 mg/L EC50 = 48 h	800 mg/L EC50 > 72 h 184 mg/L EC50 = 96 h	EC50 = 11.4 mg/L 30 min EC50 = 8.23 mg/L 5 min EC50 = 9.67 mg/L 15 min

12.2. Persistence and degradability
Persistence Persistence is unlikely, based on information available.

12.3. Bioaccumulative potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Methyl tert-butyl ether	1.06	No data available

12.4. Mobility in soil The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces Will likely be mobile in the environment due to its volatility. Disperses rapidly in air

12.5. Results of PBT and vPvB assessment No data available for assessment.

12.6. Other adverse effects

Endocrine Disruptor Information

Component	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Methyl tert-butyl ether	Group III Chemical		

Persistent Organic Pollutant This product does not contain any known or suspected substance

Ozone Depletion Potential This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues / Unused Products Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

European Waste Catalogue (EWC) According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.

Other Information Waste codes should be assigned by the user based on the application for which the product was used. Do not dispose of waste into sewer. Can be incinerated, when in compliance with local regulations.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number UN2398
14.2. UN proper shipping name Methyl butyl ether
14.3. Transport hazard class(es) 3
14.4. Packing group II

ADR

14.1. UN number UN2398
14.2. UN proper shipping name METHYL tert-BUTYL ETHER
14.3. Transport hazard class(es) 3
14.4. Packing group II

IATA

14.1. UN number UN2398
14.2. UN proper shipping name METHYL TERT-BUTYL ETHER
14.3. Transport hazard class(es) 3
14.4. Packing group II

14.5. Environmental hazards No hazards identified

14.6. Special precautions for user No special precautions required

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories X = listed

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	IECSC	AICS	KECL
Methyl tert-butyl ether	216-653-1	-		X	X	-	X	X	X	X	X

National Regulations

Component	Germany - Water Classification (VwVwS)	Germany - TA-Luft Class
Methyl tert-butyl ether	WGK 1	

Component	France - INRS (Tables of occupational diseases)
Methyl tert-butyl ether	Tableaux des maladies professionnelles (TMP) - RG 84

Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment.
Take note of Dir 94/33/EC on the protection of young people at work
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

SECTION 16: OTHER INFORMATION

Full text of R-phrases referred to under sections 2 and 3
R11 - Highly flammable
R38 - Irritating to skin

Full text of H-Statements referred to under sections 2 and 3
H225 - Highly flammable liquid and vapor
H315 - Causes skin irritation

Legend

CAS - Chemical Abstracts Service

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

PICCS - Philippines Inventory of Chemicals and Chemical Substances

ENCS - Japanese Existing and New Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

AICS - Australian Inventory of Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

TWA - Time Weighted Average

ACGIH - American Conference of Governmental Industrial Hygienists

IARC - International Agency for Research on Cancer

DNEL - Derived No Effect Level

PNEC - Predicted No Effect Concentration

RPE - Respiratory Protective Equipment

LD50 - Lethal Dose 50%

LC50 - Lethal Concentration 50%

EC50 - Effective Concentration 50% **NOEC** - No Observed Effect Concentration

POW - Partition coefficient Octanol:Water **PBT** - Persistent, Bioaccumulative, Toxic

vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

MARPOL - International Convention for the Prevention of Pollution from Ships

OECD - Organisation for Economic Co-operation and Development

ATE - Acute Toxicity Estimate

BCF - Bioconcentration factor

VOC - Volatile Organic Compounds

Key literature references and sources for data
Suppliers safety data sheet,
Chemadvisor - LOLI,
Merck index,
RTECS

Training Advice
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.
Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts.
Chemical incident response training.
Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.
First aid for chemical exposure, including the use of eye wash and safety showers.

Creation Date	Oct-2013
Next Revision Date	Oct-2023
Revision Summary	SDS section 1 updated and update of Format.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet