SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Creation Date 13-Apr-2009 **Revision Date** 19-Oct-2023 **Revision Number** 11

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

1.1. Product identifier

Product Description:	**Ethyl methyl ketone**
Cat No. :	**E/1450/PB17, E/1450/08, E/1450/MC15, E/1450/27, E/1450/15, E/1450/17, E/1450/21, E/1450/25**
Synonyms	Methyl ethyl ketone; MEK; Ethyl methyl ketone
Index No	606-002-00-3
CAS No	78-93-3
EC No	201-159-0
Molecular Formula	C4 H8 O
REACH registration number	01-2119457290-43

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

Recommended Use	Laboratory chemicals.
Sector of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
Product category	PC21 - Laboratory chemicals
Process categories	PROC15 - Use as a laboratory reagent
Environmental release category	ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
Uses advised against	No Information available

1.3. Details of the supplier of the safety data sheet

Company

EU entity/business name
Thermo Fisher Scientific
Janssen Pharmaceuticalaan 3a
2440 Geel, Belgium

UK entity/business name
Fisher Scientific UK
Bishop Meadow Road, Loughborough,
Leicestershire LE11 5RG, United Kingdom

Swiss distributor - Fisher Scientific AG
Neuhofstrasse 11, CH 4153 Reinach
Tel: +41 (0) 56 618 41 11
e-mail - infoch@thermofisher.com

E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

Tel: 01509 231166
Chemtrec US: (800) 424-9300
Chemtrec EU: 001-703-527-3887

For customers in Switzerland:
Tox Info Suisse Emergency Number: **145 (24hr)**
Tox Info Suisse: +41-44 251 51 51 (Emergency number from abroad)
Chemtrec (24h) Toll-Free: 0800 564 402
Chemtrec Local: +41-43 508 20 11 (Zurich)

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 (H225)

Health hazards

Serious Eye Damage/Eye Irritation	Category 2 (H319)
Specific target organ toxicity - (single exposure)	Category 3 (H336)

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

Full text of Hazard Statements: see section 16

2.2. Label elements

Signal Word **Danger**

Hazard Statements
- H225 - Highly flammable liquid and vapor
- H319 - Causes serious eye irritation
- H336 - May cause drowsiness or dizziness
- EUH066 - Repeated exposure may cause skin dryness or cracking

Precautionary Statements
- P280 - Wear protective gloves/protective clothing/eye protection/face protection
- P240 - Ground and bond container and receiving equipment
- P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
- P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)

Contains a substance on the National Authorities Endocrine Disruptor Lists
Contains a known or suspected endocrine disruptor

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	CAS No	EC No	Weight %	CLP Classification - Regulation (EC) No 1272/2008
Methyl ethyl ketone	78-93-3	EEC No. 201-159-0	<=100	Flam. Liq. 2 (H225) Eye Irrit. 2 (H319) STOT SE 3 (H336) (EUH066)

REACH registration number	01-2119457290-43

Full text of Hazard Statements: 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. Get medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.

Ingestion Do NOT induce vomiting. Get medical attention.

Inhalation Remove to fresh air. Get medical attention if symptoms occur. If not breathing, give artificial respiration.

Self-Protection of the First Aider 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

Difficulty in breathing. 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
CO_2, dry chemical, dry sand, alcohol-resistant foam. Water mist may be used to cool closed containers.

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. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

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.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Remove all sources of ignition. Take precautionary measures against static discharges. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation.

6.2. Environmental precautions

Avoid release to the environment. See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

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

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/face protection. Ensure adequate ventilation. Use spark-proof tools and explosion-proof equipment. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame. Flammables area.

Technical Rules for Hazardous Substances (TRGS) 510 Storage Class (LGK) (Germany)	Class 3
Switzerland - Storage of hazardous substances	Storage class - SC 3 https://www.kvu.ch/de/themen/stoffe-und-produkte

https://www.kvu.ch/fr/themes/substances-et-produits
https://www.kvu.ch/it/temi/sostanze-e-prodotti

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 (EU) 2019/1831 of 24 October 2019 establishing a fifth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC and amending Commission Directive 2000/39/EC **UK** - EH40/2005 Work Exposure Limits, Forth edition. Published 2020. **IRE -** 2010 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001. Published by the Health and Safety Authority. **CH** - The Government of Switzerland has set a directive on limit values for working materials (Grenzwerte am Arbeitsplatz) which is based on the Swiss Federal Regulation "Verordnung über die Verhütung von Unfällen und Berufskrankheiten". This directive is administered, periodically revised and enforced by SUVA (Swiss National Accident Insurance Fund).

Component	European Union	The United Kingdom	France	Belgium	Spain
Methyl ethyl ketone	TWA: 200 ppm (8h) TWA: 600 mg/m³ (8h) STEL: 300 ppm (15min) STEL: 900 mg/m³ (15min)	STEL: 300 ppm 15 min STEL: 899 mg/m³ 15 min TWA: 200 ppm 8 hr TWA: 600 mg/m³ 8 hr Skin	TWA / VME: 200 ppm (8 heures). restrictive limit TWA / VME: 600 mg/m³ (8 heures). restrictive limit STEL / VLCT: 300 ppm. restrictive limit STEL / VLCT: 900 mg/m³. restrictive limit Peau	TWA: 200 ppm 8 uren TWA: 600 mg/m³ 8 uren STEL: 300 ppm 15 minuten STEL: 900 mg/m³ 15 minuten	STEL / VLA-EC: 300 ppm (15 minutos). STEL / VLA-EC: 900 mg/m³ (15 minutos). TWA / VLA-ED: 200 ppm (8 horas) TWA / VLA-ED: 600 mg/m³ (8 horas)

Component	Italy	Germany	Portugal	The Netherlands	Finland
Methyl ethyl ketone	TWA: 200 ppm 8 ore. Time Weighted Average TWA: 600 mg/m³ 8 ore. Time Weighted Average STEL: 300 ppm 15 minuti. Short-term STEL: 900 mg/m³ 15 minuti. Short-term	TWA: 200 ppm (8 Stunden). AGW - exposure factor 1 TWA: 600 mg/m³ (8 Stunden). AGW - exposure factor 1 TWA: 200 ppm (8 Stunden). MAK TWA: 600 mg/m³ (8 Stunden). MAK Höhepunkt: 200 ppm Höhepunkt: 600 mg/m³ Haut	STEL: 300 ppm 15 minutos STEL: 900 mg/m³ 15 minutos TWA: 200 ppm 8 horas TWA: 600 mg/m³ 8 horas	huid STEL: 900 mg/m³ 15 minuten TWA: 590 mg/m³ 8 uren	TWA: 20 ppm 8 tunteina TWA: 60 mg/m³ 8 tunteina STEL: 100 ppm 15 minuutteina STEL: 300 mg/m³ 15 minuutteina Iho

Component	Austria	Denmark	Switzerland	Poland	Norway
Methyl ethyl ketone	Haut MAK-KZGW: 200 ppm 15 Minuten MAK-KZGW: 590 mg/m³ 15 Minuten MAK-TMW: 100 ppm 8 Stunden MAK-TMW: 295 mg/m³ 8 Stunden	TWA: 50 ppm 8 timer TWA: 145 mg/m³ 8 timer STEL: 900 mg/m³ 15 minutter STEL: 300 ppm 15 minutter Hud	Haut/Peau STEL: 200 ppm 15 Minuten STEL: 590 mg/m³ 15 Minuten TWA: 200 ppm 8 Stunden TWA: 590 mg/m³ 8 Stunden	STEL: 900 mg/m³ 15 minutach TWA: 450 mg/m³ 8 godzinach	TWA: 75 ppm 8 timer TWA: 220 mg/m³ 8 timer STEL: 112.5 ppm 15 minutter. value calculated STEL: 275 mg/m³ 15 minutter. value calculated

Component	Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
Methyl ethyl ketone	TWA: 590 mg/m³ STEL : 885 mg/m³	TWA-GVI: 200 ppm 8 satima. TWA-GVI: 600 mg/m³ 8 satima. STEL-KGVI: 300 ppm 15 minutama.	TWA: 200 ppm 8 hr. TWA: 600 mg/m³ 8 hr. STEL: 300 ppm 15 min STEL: 900 mg/m³ 15 min Skin	STEL: 300 ppm STEL: 900 mg/m³ TWA: 200 ppm TWA: 600 mg/m³	TWA: 600 mg/m³ 8 hodinách. Ceiling: 900 mg/m³

		STEL-KGVI: 900 mg/m³ 15 minutama.			

Component	Estonia	Gibraltar	Greece	Hungary	Iceland
Methyl ethyl ketone	TWA: 200 ppm 8 tundides. TWA: 600 mg/m³ 8 tundides. STEL: 300 ppm 15 minutites. STEL: 900 mg/m³ 15 minutites.	TWA: 200 ppm 8 hr TWA: 600 mg/m³ 8 hr STEL: 300 ppm 15 min STEL: 900 mg/m³ 15 min	STEL: 300 ppm STEL: 900 mg/m³ TWA: 200 ppm TWA: 600 mg/m³	STEL: 900 mg/m³ 15 percekben. CK TWA: 600 mg/m³ 8 órában. AK lehetséges borön keresztüli felszívódás	STEL: 300 ppm STEL: 900 mg/m³ TWA: 50 ppm 8 klukkustundum. TWA: 145 mg/m³ 8 klukkustundum. Skin notation

Component	Latvia	Lithuania	Luxembourg	Malta	Romania
Methyl ethyl ketone	STEL: 300 ppm STEL: 900 mg/m³ TWA: 67 ppm TWA: 200 mg/m³		TWA: 200 ppm 8 Stunden TWA: 600 mg/m³ 8 Stunden STEL: 300 ppm 15 Minuten STEL: 900 mg/m³ 15 Minuten	TWA: 200 ppm TWA: 600 mg/m³ STEL: 300 ppm 15 minuti STEL: 900 mg/m³ 15 minuti	TWA: 200 ppm 8 ore TWA: 600 mg/m³ 8 ore STEL: 300 ppm 15 minute STEL: 900 mg/m³ 15 minute

Component	Russia	Slovak Republic	Slovenia	Sweden	Turkey
Methyl ethyl ketone	TWA: 200 mg/m³ 0421 MAC: 400 mg/m³	Ceiling: 900 mg/m³ TWA: 200 ppm TWA: 600 mg/m³	TWA: 200 ppm 8 urah TWA: 600 mg/m³ 8 urah Kože STEL: 300 ppm 15 minutah STEL: 900 mg/m³ 15 minutah	Binding STEL: 300 ppm 15 minuter Binding STEL: 900 mg/m³ 15 minuter TLV: 50 ppm 8 timmar. NGV TLV: 150 mg/m³ 8 timmar. NGV	TWA: 200 ppm 8 saat TWA: 600 mg/m³ 8 saat STEL: 300 ppm 15 dakika STEL: 900 mg/m³ 15 dakika

Biological limit values

List source(s): **UK** - Biological Monitoring Guidance Values provided by the UK's Health and Safety Executive (HSE) Control of Substances Hazardous to Health Regulations (COSHH) 2002 (as amended) and EH40/2005.

Component	European Union	United Kingdom	France	Spain	Germany
Methyl ethyl ketone		Butan-2-one: 70 µmol/L urine post shift	Methylethylketone: 2 mg/L urine end of shift	Methyl ethyl ketone: 2 mg/L urine end of shift	2-Butanone: 2 mg/L urine (end of shift)

Component	Italy	Finland	Denmark	Bulgaria	Romania
Methyl ethyl ketone					Methylethylketone: 2 mg/L urine end of shift

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) / Derived Minimum Effect Level (DMEL)

Workers; See table for values

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Methyl ethyl ketone 78-93-3 (<=100)				DNEL = 1161mg/kg bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Methyl ethyl ketone 78-93-3 (<=100)				DNEL = 600mg/m^3

Predicted No Effect Concentration (PNEC)
See values below.

Component	Fresh water	Fresh water sediment	Water Intermittent	Microorganisms in sewage treatment	Soil (Agriculture)
Methyl ethyl ketone 78-93-3 (<=100)	PNEC = 55.8mg/L	PNEC = 284.74mg/kg sediment dw	PNEC = 55.8mg/L	PNEC = 709mg/L	PNEC = 22.5mg/kg soil dw

Component	Marine water	Marine water sediment	Marine water Intermittent	Food chain	Air
Methyl ethyl ketone 78-93-3 (<=100)	PNEC = 55.8mg/L	PNEC = 284.7mg/kg sediment dw		PNEC = 1000mg/kg food	

8.2. Exposure controls

Engineering Measures
Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.
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 Goggles (European standard - EN 166)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Butyl rubber	< 60 minutes	0.5 mm	Level 4 EN 374	Permeation rate 36 µg/cm2/min 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. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) 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. gloves with care avoiding skin contamination.

Respiratory Protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

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: Type A Organic gases and vapours filter Brown conforming to EN14387

Small scale/Laboratory use 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

Environmental exposure controls No information available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State	Liquid	
Appearance	Colorless	
Odor	Characteristic - sweet	
Odor Threshold	No data available	
Melting Point/Range	-87 °C / -124.6 °F	
Softening Point	No data available	
Boiling Point/Range	80 °C / 176 °F	
Flammability (liquid)	Highly flammable	On basis of test data
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	**Lower** 1.8 Vol%	
	Upper 11.5 Vol%	
Flash Point	-7 °C / 19.4 °F	**Method -** CC (closed cup)
Autoignition Temperature	404 °C / 759.2 °F	
Decomposition Temperature	No data available	
pH	No information available	
Viscosity	0.42 mPa.s @ 15°C	
Water Solubility	290 g/L (20°C)	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	**log Pow**	
Methyl ethyl ketone	0.29	
Vapor Pressure	105 mbar @ 20 °C	
Density / Specific Gravity	0.806	
Bulk Density	Not applicable	Liquid
Vapor Density	2.41	(Air = 1.0)
Particle characteristics	Not applicable (liquid)	

9.2. Other information

Molecular Formula	C4 H8 O
Molecular Weight	72.11
Explosive Properties	Not explosive Vapors may form explosive mixtures with air
Oxidizing Properties	Not oxidising
Evaporation Rate	3.7 - (Butyl Acetate = 1.0)

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

None known, based on information available

10.2. Chemical stability

Hygroscopic.

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. Exposure to moist air or water.

10.5. Incompatible materials

Strong oxidizing agents. Strong acids. Strong bases. Strong reducing agents. Ammonia. copper. Amines.

10.6. Hazardous decomposition products

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

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

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 ethyl ketone	LD50 = 2483 mg/kg (Rat)	LD50 = 5000 mg/kg (Rabbit)	LC50 = 11700 ppm (Rat) 4 h

(b) skin corrosion/irritation; Based on available data, the classification criteria are not met

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;

Respiratory Based on available data, the classification criteria are not met
Skin Based on available data, the classification criteria are not met

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

Not mutagenic in AMES Test

(f) carcinogenicity; Based on available data, the classification criteria are not met

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; Based on available data, the classification criteria are not met

(h) STOT-single exposure; Category 3

Results / Target organs Central nervous system (CNS).

(i) STOT-repeated exposure; Based on available data, the classification criteria are not met

Target Organs None known.

(j) aspiration hazard; Based on available data, the classification criteria are not met

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.

11.2. Information on other hazards

Endocrine Disrupting Properties .
Assess endocrine disrupting properties for human health Contains a substance on the National Authorities Endocrine Disruptor Lists

Component	EU National Authorities Endocrine Disruptor Lists - Health
Methyl ethyl ketone 78-93-3 (<=100)	List II

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity
Ecotoxicity effects .

Component	Freshwater Fish	Water Flea	Freshwater Algae
Methyl ethyl ketone	Lepomis macrochirus: LC50=3,22 g/L 96 h	EC50: = 5091 mg/L, 48h (Daphnia magna) EC50: 4025 - 6440 mg/L, 48h Static (Daphnia magna) EC50: > 520 mg/L, 48h (Daphnia magna)	

Component	Microtox	M-Factor
Methyl ethyl ketone	EC50 = 3403 mg/L 30 min EC50 = 3426 mg/L 5 min	

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

Component	Degradability
Methyl ethyl ketone 78-93-3 (<=100)	98% (28d)

12.3. Bioaccumulative potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Methyl ethyl ketone	0.29	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 Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB).

12.6. Endocrine disrupting properties
Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors

12.7. Other adverse effects

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 Catalog, 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 flush to sewer. Can be landfilled or incinerated, when in compliance with local regulations.
Switzerland - Waste Ordinance	Disposal should be in accordance with applicable regional, national and local laws and regulations. Ordinance on the Avoidance and the Disposal of Waste (Waste Ordinance, ADWO) SR 814.600 https://www.fedlex.admin.ch/eli/cc/2015/891/en

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number	UN1193
14.2. UN proper shipping name	Ethyl methyl ketone (Methyl ethyl ketone)
14.3. Transport hazard class(es)	3
14.4. Packing group	II

ADR

14.1. UN number	UN1193
14.2. UN proper shipping name	Ethyl methyl ketone (Methyl ethyl ketone)
14.3. Transport hazard class(es)	3
14.4. Packing group	II

IATA

14.1. UN number	UN1193
14.2. UN proper shipping name	Methyl ethyl ketone
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. Maritime transport in bulk according to IMO instruments	Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

International Inventories

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Methyl ethyl ketone	78-93-3	201-159-0	-	-	X	X	KE-24094	X	X

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Methyl ethyl ketone	78-93-3	X	ACTIVE	X	-	X	X	X

Legend: X - Listed '-' - Not Listed **KECL** - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Methyl ethyl ketone	78-93-3	-	Use restricted. See item 75. (see link for restriction details)	-

REACH links

https://echa.europa.eu/substances-restricted-under-reach

Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Methyl ethyl ketone	78-93-3	Not applicable	Not applicable

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

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 .

Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values

National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

WGK Classification See table for values

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Methyl ethyl ketone	WGK1	

Component	France - INRS (Tables of occupational diseases)
Methyl ethyl ketone	Tableaux des maladies professionnelles (TMP) - RG 84

Swiss Regulations

Article 4 para. 4 of the Ordinance on the protection of young people in the workplace (SR 822.115) and Article 1 lit. f of the EAER regulation on hazardous work and young people (SR 822.115.2).

Take note on Article 13 Maternity Ordinance (SR 822.111.52) with regards expectant and nursing mothers.

Component	Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR 814.81)	Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC)	Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure
Methyl ethyl ketone 78-93-3 (<=100)		Group I	

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has been conducted by the manufacturer/importer

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H225 - Highly flammable liquid and vapor
H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness
EUH066 - Repeated exposure may cause skin dryness or cracking

Legend

CAS - Chemical Abstracts Service
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
ENCS - Japanese Existing and New Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit
ACGIH - American Conference of Governmental Industrial Hygienists
DNEL - Derived No Effect Level
RPE - Respiratory Protective Equipment
LC50 - Lethal Concentration 50%
NOEC - No Observed Effect Concentration
PBT - Persistent, Bioaccumulative, Toxic
TWA - Time Weighted Average
IARC - International Agency for Research on Cancer
Predicted No Effect Concentration (PNEC)
LD50 - Lethal Dose 50%
EC50 - Effective Concentration 50%
POW - Partition coefficient Octanol:Water
vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
OECD - Organisation for Economic Co-operation and Development
BCF - Bioconcentration factor
ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
MARPOL - International Convention for the Prevention of Pollution from Ships
ATE - Acute Toxicity Estimate
VOC - (volatile organic compound)

Key literature references and sources for data

https://echa.europa.eu/information-on-chemicals
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.
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.
Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts.

Creation Date	13-Apr-2009
Revision Date	19-Oct-2023
Revision Summary	Not applicable.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006. COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No 1907/2006 .

For Switzerland - Compiled in accordance with the technical provisions referred to in Annex 2, Number 3, ChemO (SR 813.11 - Ordinance on Protection against Dangerous Substances and Preparations).

Disclaimer

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End of Safety Data Sheet