

# SAFETY DATA SHEET

According to EC No 1907/2006 as amended as at the date of this SDS

## Ethyl Methyl Carbonate (EMC)

Version	Revision Date:	SDS Number:	Date of last issue: 29.09.2023
1.3	02.10.2023	800010060177	Print Date 09.10.2023

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

Trade name	:	Ethyl Methyl Carbonate (EMC)
Synonyms	:	Carbonic acid, ethyl methyl ester
CAS-No.	:	623-53-0

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

Use of the Sub- stance/Mixture	:	Chemical intermediate. Please refer to section 16 and/or the annexes for the registered uses under REACH.
Uses advised against	:	This product must not be used in applications other than the above without first seeking the advice of the supplier.

#### 1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier	:	<b>Shell Chemicals Europe B.V.</b> PO Box 2334 3000 CH Rotterdam Netherlands
Telephone	:	
Telefax	:	
Contact for Safety Data Sheet	:	

#### 1.4 Emergency telephone number

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 2	H225: Highly flammable liquid and vapour.
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#### 2.2 Label elements

##### Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms	:
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Signal word	:	Danger
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Hazard statements : PHYSICAL HAZARDS:  
H225 Highly flammable liquid and vapour.  
HEALTH HAZARDS:  
Not classified as a physical hazard according to CLP criteria.  
ENVIRONMENTAL HAZARDS:  
Not classified as environmental hazard according to CLP criteria.

Precautionary statements : **Prevention:**  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.  
P242 Use non-sparking tools.  
P243 Take action to prevent static discharges.

**Response:**  
No precautionary phrases.

**Storage:**  
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.

### 2.3 Other hazards

This mixture does not contain any REACH registered substances that are assessed to be a PBT or a vPvB.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Vapours are heavier than air. Vapours may travel across the ground and reach remote ignition sources causing a flashback fire danger.  
Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

#### Components

Chemical name	CAS-No.	Concentration (% w/w)
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	EC-No.	
Carbonic acid, ethyl methyl ester	623-53-0 433-480-9	100

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

- Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.
- If inhaled : No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.
- In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
- In case of eye contact : Flush eye with copious quantities of water.  
If persistent irritation occurs, obtain medical attention.
- If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.

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

None known.

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

- Treatment : Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

- Suitable extinguishing media : Alcohol-resistant foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable extinguishing media : Do not use water in a jet.  
Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

#### 5.2 Special hazards arising from the substance or mixture

- Specific hazards during fire-fighting : Hazardous combustion products may include:  
A complex mixture of airborne solid and liquid particulates and gases (smoke).  
Carbon monoxide may be evolved if incomplete combustion

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occurs.

### 5.3 Advice for firefighters

- Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Further information : If possible remove containers from the danger zone. If the fire cannot be extinguished the only course of action is to evacuate immediately. Contain residual material at affected sites to prevent material from entering drains (sewers), ditches, and waterways.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

- Personal precautions : 6.1.1 For non emergency personnel:  
Do not breathe fumes, vapour.  
Do not operate electrical equipment.  
6.1.2 For emergency responders:  
Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area and evacuate all personnel. Attempt to disperse the gas or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas meter. Vapour can travel for considerable distances both above and below the ground surface. Underground services (drains, pipelines, cable ducts) can provide preferential flow paths.

### 6.2 Environmental precautions

- Environmental precautions : Take measures to minimise the effects on groundwater. Contain residual material at affected sites to prevent material from entering drains (sewers), ditches, and waterways. Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers.

### 6.3 Methods and material for containment and cleaning up

- Methods for cleaning up : For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak

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up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. Take precautionary measures against static discharges.

### 6.4 Reference to other sections

For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet., Notify authorities if any exposure to the general public or the environment occurs or is likely to occur., For guidance on disposal of spilled material see Section 13 of this Safety Data Sheet., Vapour may form an explosive mixture with air., Local authorities should be advised if significant spillages cannot be contained., Observe all relevant local and international regulations.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Technical measures : Avoid breathing of or direct contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material. Air-dry contaminated clothing in a well-ventilated area before laundering. Prevent spillages. Turn off all battery operated portable electronic devices (examples include: cellular phones, pagers and CD players) before operating gasoline pump. Contaminated leather articles including shoes cannot be decontaminated and should be destroyed to prevent reuse. Ensure that all local regulations regarding handling and storage facilities are followed.

Vehicle fueling and vehicle workshop areas - Avoid inhalation of vapours and contact with skin, when filling or emptying a vehicle.

Advice on safe handling : Ensure that all local regulations regarding handling and storage facilities are followed. When using do not eat or drink. Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks. Never siphon by mouth. Avoid exposure. Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.

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Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.  
Do not breathe vapours or spray mist.  
Handle and open container with care in a well-ventilated area.

Product Transfer : Wait 2 minutes after tank filling (for tanks such as those on road tanker vehicles) before opening hatches or manholes. Wait 30 minutes after tank filling (for large storage tanks) before opening hatches or manholes. Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge ( $\leq 1$  m/sec until fill pipe submerged to twice its diameter, then  $\leq 7$  m/sec). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations.

### 7.2 Conditions for safe storage, including any incompatibilities

Further information on storage stability : Drum and small container storage:  
Keep containers closed when not in use.  
Drums should be stacked to a maximum of 3 high.  
Packaged product must be kept tightly closed and stored in a diked (bunded) well-ventilated area, away from, ignition sources and other sources of heat.  
Use properly labeled and closable containers.  
Take suitable precautions when opening sealed containers, as pressure can build up during storage.  
Bulk storage tanks should be diked (bunded).  
Locate tanks away from heat and other sources of ignition.  
Cleaning, inspection and maintenance of storage tanks is a specialist operation, which requires the implementation of strict procedures and precautions.

Packaging material : Suitable material: For containers, or container linings use mild steel, stainless steel., For container paints, use epoxy paint, zinc silicate paint.  
Unsuitable material: PVC., Natural rubber.

Container Advice : Do not cut, drill, grind, weld or perform similar operations on or near containers. Containers, even those that have been emptied, can contain explosive vapours.

### 7.3 Specific end use(s)

Specific use(s) : Please refer to section 16 and/or the annexes for the registered uses under REACH.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Biological occupational exposure limits

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No biological limit allocated.

### 8.2 Exposure controls

#### Engineering measures

Read in conjunction with the Exposure Scenario for your specific use contained in the Annex. The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:

Use sealed systems as far as possible.

Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits.

Local exhaust ventilation is recommended.

Firewater monitors and deluge systems are recommended.

Eye washes and showers for emergency use.

#### General Information:

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or for subsequent recycle.

Do not ingest. If swallowed, then seek immediate medical assistance

#### Personal protective equipment

Read in conjunction with the Exposure Scenario for your specific use contained in the Annex.

Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

The provided information is made in consideration of the PPE directive (Council Directive 89/686/EEC) and the CEN European Committee for Standardisation (CEN) standards.

Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.

Approved to EU Standard EN166.

Hand protection

Remarks : Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. Suitability and durability of a glove is dependent on usage, e.g.

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frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Select gloves tested to a relevant standard (e.g. Europe EN374, US F739). When prolonged or frequent repeated contact occurs, Nitrile gloves may be suitable. (Breakthrough time of > 240 minutes.) For incidental contact/splash protection Neoprene, PVC gloves may be suitable. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

**Skin and body protection** : If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to relevant Standard, and provide employee skin care programmes. Wear antistatic and flame-retardant clothing, if a local risk assessment deems it so.

**Respiratory protection** : If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus. All respiratory protection equipment and use must be in accordance with local regulations.

Select a filter suitable for combined particulate/organic gases and vapours [Type A/Type P boiling point > 65°C (149°F)] meeting EN14387 and EN143.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state	: liquid
Colour	: Data not available



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Odour : mild ethereal

Odour Threshold : Data not available

Melting point/freezing point : -55 °C

Initial boiling point and boiling range : 102 °C

### Flammability

Flammability (liquids) : Highly flammable liquid and vapour.

### Lower explosion limit and upper explosion limit / flammability limit

Upper explosion limit / upper flammability limit : 15,8 %(V)

Lower explosion limit / Lower flammability limit : 2,1 %(V)

Flash point : 22,5 °C

Auto-ignition temperature : > 400 °C

Decomposition temperature  
Decomposition temperature : Data not available

### Viscosity

Viscosity, dynamic : 0,7 mPa.s

Viscosity, kinematic : Data not available

### Solubility(ies)

Water solubility : 46,8 g/l

Solubility in other solvents : Data not available

Partition coefficient: n-octanol/water : Pow: 0,972

Vapour pressure : 43 hPa

Relative density : Data not available

Density : 1.014 kg/m<sup>3</sup>

Relative vapour density : Data not available

### Particle characteristics

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Particle size	:	Data not available
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### 9.2 Other information

Flammability (liquids)	:	Highly flammable liquid and vapour.
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Evaporation rate	:	Data not available
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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Stable under normal conditions of use.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

Hazardous reactions	:	Reacts with air to form peroxides. Vapours may form explosive mixture with air.
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### 10.4 Conditions to avoid

Conditions to avoid	:	Avoid heat, sparks, open flames and other ignition sources.  In certain circumstances product can ignite due to static electricity.
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### 10.5 Incompatible materials

Materials to avoid	:	Strong oxidizing agents rubber, various plastics
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### 10.6 Hazardous decomposition products

Hazardous decomposition products are not expected to form during normal storage. Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides and unidentified organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

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## SECTION 11: Toxicological information

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

Information on likely routes of exposure	:	Inhalation is the primary route of exposure although absorption may occur through skin contact or following accidental ingestion.
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#### Acute toxicity

##### Product:

Acute oral toxicity	:	Remarks: Low toxicity LD50 > 5000 mg/kg
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Acute inhalation toxicity : Remarks: Low toxicity if inhaled.  
Based on available data, the classification criteria are not met.

Acute dermal toxicity : Remarks: LD50 > 5000 mg/kg  
Low toxicity  
Based on available data, the classification criteria are not met.

Acute toxicity (other routes of administration) : Remarks: Not a respiratory irritant

### Skin corrosion/irritation

#### Product:

Remarks : Not irritating to skin.

### Serious eye damage/eye irritation

#### Product:

Remarks : Not irritating to eye.

### Respiratory or skin sensitisation

#### Product:

Remarks : Not a sensitiser.  
Based on available data, the classification criteria are not met.

### Germ cell mutagenicity

#### Product:

Genotoxicity in vivo : Remarks: Non mutagenic

Germ cell mutagenicity- Assessment : This product does not meet the criteria for classification in categories 1A/1B.

### Carcinogenicity

#### Product:

Remarks : Not a carcinogen.  
Based on available data, the classification criteria are not met.

Carcinogenicity - Assessment : This product does not meet the criteria for classification in categories 1A/1B.

Material	GHS/CLP Carcinogenicity Classification
Carbonic acid, ethyl methyl ester	No carcinogenicity classification.

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### Reproductive toxicity

#### Product:

Effects on fertility : Remarks: Not a developmental toxicant., Based on available data, the classification criteria are not met., Does not impair fertility.

Reproductive toxicity - Assessment : This product does not meet the criteria for classification in categories 1A/1B.

### STOT - single exposure

#### Product:

Remarks : Based on available data, the classification criteria are not met.

### STOT - repeated exposure

#### Product:

Remarks : Based on available data, the classification criteria are not met.

### Aspiration toxicity

#### Product:

Not an aspiration hazard., Based on available data, the classification criteria are not met.

## 11.2 Information on other hazards

### Endocrine disrupting properties

#### Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### Further information

#### Product:

Remarks : Classifications by other authorities under varying regulatory frameworks may exist.

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### SECTION 12: Ecological information

#### 12.1 Toxicity

**Product:**

Toxicity to fish	:	Remarks: Practically non toxic: LL/EL/IL50 > 100 mg/l
Toxicity to daphnia and other aquatic invertebrates	:	Remarks: Practically non toxic: LL/EL/IL50 > 100 mg/l
Toxicity to algae/aquatic plants	:	Remarks: Practically non toxic: LL/EL/IL50 > 100 mg/l
Toxicity to fish (Chronic toxicity)	:	Remarks: NOEC/NOEL > 100 mg/l
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	Remarks: NOEC/NOEL > 100 mg/l
Toxicity to microorganisms	:	Remarks: Practically non toxic: LL/EL/IL50 > 100 mg/l

#### 12.2 Persistence and degradability

**Product:**

Biodegradability	:	Remarks: Readily biodegradable. Oxidises rapidly by photo-chemical reactions in air and water.
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#### 12.3 Bioaccumulative potential

**Product:**

Bioaccumulation	:	Remarks: Does not bioaccumulate significantly.
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#### 12.4 Mobility in soil

**Product:**

Mobility	:	Remarks: If the product enters soil, one or more constituents will or may be mobile and may contaminate groundwater., After release, disperses through ground water.
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#### 12.5 Results of PBT and vPvB assessment

**Product:**

Assessment	:	This mixture does not contain any REACH registered substances that are assessed to be a PBT or a vPvB..
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### 12.6 Endocrine disrupting properties

**Product:**

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### 12.7 Other adverse effects

**Product:**

Additional ecological information : Does not have ozone depletion potential, photochemical ozone creation potential or global warming potential.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product	: Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Waste arising from a spillage or tank cleaning should be disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand. Do not dispose into the environment, in drains or in water courses. Do not dispose of tank water bottoms by allowing them to drain into the ground. This will result in soil and groundwater contamination. MARPOL - see International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) which provides technical aspects at controlling pollutions from ships.
Contaminated packaging	: Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard. Do not puncture, cut, or weld uncleaned drums. Send to drum recoverer or metal reclaimer. Do not pollute the soil, water or environment with the waste container.
Local legislation	
Remarks	: Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

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EU Waste Disposal Code (EWC):  
14 06 03 other solvents and solvent mixtures.  
The number given to waste is associated with the appropriate usage. The user must decide if their particular use results in another waste code being assigned.

### SECTION 14: Transport information

#### 14.1 UN number or ID number

ADR	:	3272
RID	:	3272
IMDG	:	3272
IATA	:	3272

#### 14.2 UN proper shipping name

ADR	:	ESTERS, N.O.S. (Ethyl Methyl Carbonate)
RID	:	ESTERS, N.O.S.
IMDG	:	ESTERS, N.O.S. (Ethyl Methyl Carbonate)
IATA	:	Esters, n.o.s. (Ethyl Methyl Carbonate)

#### 14.3 Transport hazard class(es)

ADR	:	3
RID	:	3
IMDG	:	3
IATA	:	3

#### 14.4 Packing group

ADR		
Packing group	:	III
Classification Code	:	F1
Hazard Identification Number	:	30
Labels	:	3
RID		
Packing group	:	III
Classification Code	:	F1
Hazard Identification Number	:	30
Labels	:	3
IMDG		
Packing group	:	III
Labels	:	3

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### IATA

Packing group	: III
Labels	: 3

### 14.5 Environmental hazards

#### ADR

Environmentally hazardous	: no
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#### RID

Environmentally hazardous	: no
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#### IMDG

Marine pollutant	: no
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### 14.6 Special precautions for user

Not applicable

### 14.7 Maritime transport in bulk according to IMO instruments

MARPOL Annex 1 rules apply for bulk shipments by sea.

## SECTION 15: Regulatory information

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

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. P5a-c FLAMMABLE LIQUIDS

#### Other regulations:

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

Product is subject to Major accident risk decision 2015 (BRZO+) based on Seveso III directive (2012/18/EU).

#### The components of this product are reported in the following inventories:

AIIC	: Not listed
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DSL	: Listed
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IECSC	: Listed
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ENCS	: Listed
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1.3	02.10.2023	800010060177	Print Date 09.10.2023

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KECI	: Listed
NZIoC	: Not listed
PICCS	: Listed
TSCA	: Listed
TCSI	: Listed

### 15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

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## SECTION 16: Other information

### Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

# SAFETY DATA SHEET

According to EC No 1907/2006 as amended as at the date of this SDS

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### Further information

Training advice : Provide adequate information, instruction and training for operators.

Other information : For Industry guidance and tools on REACH please visit the CEFIC website at <http://cefic.org/Industry-support>.  
The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Sources of key data used to compile the Safety Data Sheet : The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU IUCLID data base, EC 1272 regulation, etc).

### Classification of the mixture:

Flam. Liq. 2

H225

### Classification procedure:

On basis of test data.

The information provided in 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text.

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