1. Identification of the substance/mixture and of the company/undertaking
   
   Product identifier:
   - Product name: Ethyl methyl carbonate
   - Product code (SDS NO): 3138E-2

   Details of the supplier of the safety data sheet
   - Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.
   - Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN
   - Division: Safety Management Dept. of Chemicals
   - Telephone number: +81-6-6946-8061
   - FAX: +81-6-6946-1607
   - e-mail address: kagakuhinanzenkanri@kishida.co.jp

2. Hazards identification
   
   GHS classification and label elements of the product
   - Classification of the substance or mixture
     PHYSICAL AND CHEMICAL HAZARDS
     - Flammable liquids: Category 3
     (Note) GHS classification without description: Not classified/Classification not possible

   Label elements

<table>
<thead>
<tr>
<th>Signal word: Warning</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAZARD STATEMENT</td>
</tr>
<tr>
<td>Flammable liquid and vapor</td>
</tr>
<tr>
<td>PRECAUTIONARY STATEMENT</td>
</tr>
<tr>
<td>Prevention</td>
</tr>
<tr>
<td>Keep away from heat/sparks/open flames/hot surfaces. - No smoking.</td>
</tr>
<tr>
<td>Keep container tightly closed.</td>
</tr>
<tr>
<td>Ground/bond container and receiving equipment.</td>
</tr>
<tr>
<td>Use explosion-proof electrical/ventilating/lighting equipment.</td>
</tr>
<tr>
<td>Use only non-sparking tools.</td>
</tr>
<tr>
<td>Take precautionary measures against static discharge.</td>
</tr>
<tr>
<td>Wear protective gloves/protective clothing/eye protection/face protection.</td>
</tr>
<tr>
<td>Response</td>
</tr>
<tr>
<td>In case of fire: Use appropriate media other than water for extinction.</td>
</tr>
<tr>
<td>IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.</td>
</tr>
<tr>
<td>Storage</td>
</tr>
<tr>
<td>Store in a well-ventilated place. Keep cool.</td>
</tr>
<tr>
<td>Disposal</td>
</tr>
<tr>
<td>Dispose of contents/container in accordance with local/national regulation.</td>
</tr>
<tr>
<td>Specific Physical and Chemical hazards</td>
</tr>
<tr>
<td>Flammable liquid. Vapor/air mixture may explode.</td>
</tr>
</tbody>
</table>
3. Composition/information on ingredients
Mixture/Substance selection:
Substance
Ingredient name: Ethyl methyl carbonate
Content (%): 99 (min)
Chemical formula: (C₂H₅O)CO(OCH₃)
Chemicals No., Japan: 2-3698
CAS No.: 623-53-0
MW: 104.11
Note: The figures shown above are not the specifications of the product.

4. First-aid measures
Descriptions of first-aid measures
IF INHALED
Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.
IF ON SKIN (or hair)
Take off immediately all contaminated clothing. Rinse skin with water/shower.
If skin irritation or rash occurs: Get medical advice/attention.
IF IN EYES
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy
to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
IF SWALLOWED
Rinse mouth.
Call a POISON CENTER or doctor/physician if you feel unwell.

5. Fire-fighting measures
Extinguishing media
Suitable extinguishing media
In case of fire, use foam, dry powder, CO2 to extinguish.
Unsuitable extinguishing media
Indoor firefighting equipment or outdoor firefighting equipment
Sprinkler equipment
Dry-powder firefighting equipment - except for phosphate etc., hydrogen carbonate etc.
Straight stream water extinguisher
Water mist extinguisher
Reinforcing liquid jet extinguisher
Dry-powder extinguisher - except for phosphate etc., hydrogen carbonate etc.
Bucket of water or tank of water
Specific hazards arising from the substance or mixture
Containers may explode when heated.
Fire may produce irritating, corrosive and/or toxic gases.
Advice for firefighters
Specific fire-fighting measures
Evacuate non-essential personnel to safe area.
Special protective equipment and precautions for fire-fighters
Wear fire/flame resistant/retardant clothing.
Wear protective gloves/protective clothing/eye protection/face protection.
Firefighters should wear self-contained breathing apparatus with full face peace operated
positive pressure mode.
6. Accidental release measures
   Personnel precautions, protective equipment and emergency procedures
   Ventilate area until material pick up is complete.
   Wear proper protective equipment.

   Environmental precautions
   Prevent spills from entering sewers, watercourses or low areas.

   Methods and materials for containment and cleaning up
   Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

   Preventive measures for secondary accident
   Collect spillage.

7. Handling and storage
   Precautions for safe handling
   Preventive measures
   (Protective measures against fire and explosion)
   Keep away from heat/sparks/open flames/hot surfaces. ~ No smoking.
   Ground/bond container and receiving equipment.
   Use explosion-proof electrical/ventilating/lighting equipment.
   Use only non-sparking tools.
   Take precautionary measures against static discharge.
   (Exhaust/ventilator)
   Exhaust/ventilator should be available.
   (Safety treatments)
   Avoid contact with skin.
   Avoid contact with eyes.

   Safety Measures
   Wear protective gloves/protective clothing/eye protection/face protection.
   When using do not eat, drink or smoke.

   Any incompatibilities
   See “10.Stability and Reactivity”

   Storage
   Conditions for safe storage
   Keep container tightly closed.
   Store in a cool, dry place. Do not store in direct sunlight.

   Container and packaging materials for safe handling
   Glass
   Stainless steel

8. Exposure controls/personal protection
   Control parameters
   Exposure controls
   Appropriate engineering controls
   Do not use in areas without adequate ventilation.
   Eye wash station should be available.
   Washing facilities should be available.

   Individual protection measures
   Respiratory protection
   Wear respiratory protection.

   Hand protection
   Wear protective gloves.
9. Physical and Chemical Properties
Information on basic physical and chemical properties
- Physical state: Liquid (20°C)
- Color: Colorless, Clear
- Odor: Ether odour
- pH data is not available.
- Boiling point or initial boiling point: 107°C
- Boiling range data is not available.
- Melting point/Freezing point: −55°C
- Decomposition temperature data is not available.
- Flammability (gases, liquids and solids) data is not available.
- Flash point: (Ethyl methyl carbonate) 23°C
- Auto-ignition temperature data is not available.
- Lower and upper explosion limit/flammability limit data is not available.
- Vapor pressure data is not available.
- Relative vapor density (Air=1) data is not available.
- Density and/or relative density: 1.012g/cm³ (20°C)
- Kinematic viscosity data is not available.
- Solubility:
  - Solubility in water: Insoluble
  - n-Octanol/water partition coefficient data is not available.
- No Particle characteristics data is not available.

10. Stability and Reactivity
Reactivity
- Not available.
Chemical stability
- Stable under normal storage/handling conditions.
Possibility of hazardous reactions
- Not available.
Conditions to avoid
- Contact with incompatible materials.
- Contact with fire source.
Incompatible materials
- Strong oxidizing agents
Hazardous decomposition products
- Carbon oxides

11. Toxicological Information
Information on toxicological effects
Acute toxicity data is not available.
Irritant properties
- Skin corrosion/irritation data is not available.
- Serious eye damage/irritation data is not available.
Allergenic and sensitizing effects data is not available.
Mutagenic effects data is not available.
Carcinogenic effects data is not available.
Reproductive toxicity data is not available.
STOT
STOT—single exposure data is not available.
STOT—repeated exposure data is not available.
Aspiration hazard data is not available.

12. Ecological Information
Ecotoxicity
Ecotoxicity data is not available.
Persistence and degradability
Persistence and degradability data is not available.
Bioaccumulative potential
Bioaccumulative potential data is not available.
Mobility in soil
Mobility in soil data is not available.
Other adverse effects
Ozone depleting chemical data is not available.

13. Disposal considerations
Waste treatment methods
Dispose of contents/container in accordance with local/national regulation.

14. Transport Information
UN No.: 1993
Proper Shipping Name:
FLAMMABLE LIQUID, N.O.S.
Class or division: 3
Packing group: III
ERG GUIDE No.: 128
Special provisions No.: 223, 274

IMDG Code (International Maritime Dangerous Goods Regulations)
UN No.: 1993
Proper Shipping Name:
FLAMMABLE LIQUID, N.O.S.
Class or division: 3
Packing group: III
Special provisions No.: 223, 274; 955

IATA Dangerous Goods Regulations
UN No.: 1993
Proper Shipping Name:
FLAMMABLE LIQUID, N.O.S.
Class or division: 3
Hazard labels: Flamm.liquid
Packing group: III
Special provisions No.: A3

Environmental hazards
MARPOL Annex III — Prevention of pollution by harmful substances
Marine pollutants (yes/no): no
15. Regulatory Information
Safety, health and environmental regulations/legislation specific for the substance or mixture
US major regulations
TSCA
   Ethyl methyl carbonate
Other regulatory information
   Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. Other information
GHS classification and labelling
   Flam. Liq. 3: H226 Flammable liquid and vapor
Reference Book
   Globally Harmonized System of classification and labelling of chemicals, (6th ed., 2015), UN
   Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th ed., 2017 UN
   IMDG Code, 2018 Edition (Incorporating Amendment 39–18)
   IATA Dangerous Goods Regulations (60th Edition) 2019
   Classification, labelling and packaging of substances and mixtures (table3–1 ECN06182012)
   2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
   2019 TLVs and BEIs. (ACGIH)
   http://monographs.iarc.fr/ENG/Classification/index.php
Supplier's data/information

General Disclaimer
   This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.
   The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products’ properties.
   The GHS classification data given here is based on current Japan official data (NITE published in 2018).