SYNONYM
Carbonic acid di-ethyl ester.

APPEARANCE
Clear liquid.

PHYSICAL PROPERTIES
Density (20 °C): 0.97 g/cm³
Boiling point: 126 °C /100 kPa
Solubility:
- Soluble in a usual organic solvent (acetone, toluene, chloroform).
- Insoluble in water.

CHEMICAL PROPERTIES
- DEC is a reactive chemical intermediate which may be considered as an intermediate for higher carbonates, or polycarbonates, carbamates, ureas, carbalkoxy derivatives and malonic ester derivatives.
- DEC can also serve as a ring closing agent in a reaction between the ethoxy radicals and the functional groups of other molecules.

USES
- Organic synthesis intermediate.
- Pharmaceutical synthesis intermediate.
- May be used as a solvent for resins, oils, nitro-cellulose, and cellulose esters.
DIETHYL CARBONATE
DEC

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Guaranteed Value</th>
<th>Method</th>
<th>Operating Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear liquid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>≤ 10 APHA</td>
<td>Colorimetry</td>
<td>C-210</td>
</tr>
<tr>
<td>Purity</td>
<td>≥ 99.95 %</td>
<td>Gas chromatography</td>
<td>GC-310</td>
</tr>
<tr>
<td>Ethyl chloroformate</td>
<td>≤ 0.01 %</td>
<td>Gas chromatography</td>
<td>GC-310</td>
</tr>
<tr>
<td>Hydrogen chloride</td>
<td>≤ 0.01 %</td>
<td>Acidimetry</td>
<td>A-220</td>
</tr>
<tr>
<td>Ethyl alcohol</td>
<td>≤ 0.01 %</td>
<td>Gas chromatography</td>
<td>GC-310</td>
</tr>
<tr>
<td>Water</td>
<td>≤ 0.02 %</td>
<td>Karl Fischer</td>
<td>K-110</td>
</tr>
<tr>
<td>Ethyl alkyl carbonates total</td>
<td>≤ 0.01 %</td>
<td>Gas chromatography</td>
<td>GC-310</td>
</tr>
</tbody>
</table>

PACKAGING
Polyethylene lined metal drum containing 180 kg.
Polyethylene drum containing 200 kg.
In bulk.

HANDLING PRECAUTIONS
- Physicochemical hazard:
  Flash point (tag closed cup): 25 °C
- Health hazards:
  LD 50 (rat, oral): 4876 mg/kg
  Irritating on skin and mucous membrane and eyes.
- Recommended:
  Wear goggles, gloves, mask and protective clothes.
  If eyes are contaminated, wash immediately with clean water for at least 15 minutes and consult a physician. In case of inhalation of concentrated vapors take person to fresh air and call a physician.
- Neutralization
  Neutralize by reaction with a basic solution.

STORAGE
Stored in its closed original drum protected from direct sunshine, in a covered, dry, cool and well-ventilated warehouse the product is stable.
Otherwise, it hydrolyses very slowly to form carbon dioxide and ethanol. When mixed with air and confined, the vapors of DEC and ethanol can be explosive. However, in case of prolonged storage it is recommended to check again the product before use, by measuring typical parameters of its quality such as alcohol level.

TRANSPORT
Refer to MSDS.

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