DATA SHEET Nr 2140 G

ISOPROPYL CHLOROFORMATE

IPCF

\[ \text{CH}_3 \quad \text{O} \quad \text{CH} \quad \text{O} - \text{C} - \text{Cl} \quad \text{CH}_3 \]

Molecular formula: \( \text{C}_4\text{H}_7\text{ClO}_2 \)
Molecular weight: 122.5
CAS number: 108-23-6
EC number: 203-563-2

SYNONYM
Carbonochloridic acid, 1-methylethyl ester.

APPEARANCE
Clear liquid with pungent odor.

PHYSICAL PROPERTIES
Density (20 °C): 1.08 g/cm\(^3\)
Boiling point: starts to decompose at 50 °C
Solubility:
Soluble in usual organic solvents (acetone, toluene, chloroform, THF).

CHEMICAL PROPERTIES
- Reacts by hydrolysis yielding hydrochloric acid, carbon dioxide and isopropanol.
- Reacts with alcohols yielding carbonates.
- Reacts with amines yielding carbamates.

USES
- Organic synthesis intermediate.
- Synthesis intermediate for polymerization initiators.
ISOPROPYL CHLOROFORMATE

SPECIFICATION

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Guaranteed value</th>
<th>Method</th>
<th>Operating procedure</th>
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<tbody>
<tr>
<td>Appearance</td>
<td>Clear liquid</td>
<td>Visual</td>
<td></td>
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<tr>
<td>Color</td>
<td>≤ 10 APHA</td>
<td>Colorimetry</td>
<td>C – 210</td>
</tr>
<tr>
<td>Purity</td>
<td>≥ 99.0 %</td>
<td>Gas chromatography</td>
<td>GC – 242</td>
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<tr>
<td>Phosgene</td>
<td>≤ 0.1 %</td>
<td>Iodometry</td>
<td>I – 230</td>
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<tr>
<td>Hydrogen chloride</td>
<td>≤ 0.02 %</td>
<td>Acidimetry</td>
<td>A – 220</td>
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<tr>
<td>Isopropanol</td>
<td>≤ 0.3 %</td>
<td>Gas chromatography</td>
<td>GC – 242</td>
</tr>
<tr>
<td>Di-isopropyl carbonate</td>
<td>≤ 0.3 %</td>
<td>Gas chromatography</td>
<td>GC – 242</td>
</tr>
<tr>
<td>Iron</td>
<td>≤ 1 ppm</td>
<td>Atomic absorption spectrometry</td>
<td>AAS – 810</td>
</tr>
<tr>
<td>Isopropyl chloride</td>
<td>≤ 0.5 %</td>
<td>Gas chromatography</td>
<td>GC – 242</td>
</tr>
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</table>

PACKAGING

Polyethylene lined metal drum containing 200 kg.

HANDLING PRECAUTIONS

- Physicochemical hazard:
  Flash point (closed cup): 16 °C
- Health hazards:
  LD 50 (oral, rat): 545 mg/kg
  Irritating action to the eyes, skin and mucous membranes.
  Corrosive.
- Recommended:
  Avoid contact with metallic compounds (especially iron salts) which catalyze its decomposition.
  When handling this product wear gloves, goggles, mask and protective clothes.
  If eyes are contaminated wash immediately with clean water for at least 15 minutes. In case of inhalation of concentrated vapors take person to fresh air. In both cases consult a physician.
  **Neutralization:**
  Neutralize by reaction with an alkaline solution.

STORAGE

Keep in its original, closed and labelled container.
The place of storage has to be properly ventilated and cleanable.
**Store in dry place, storage temperature must be:** < 0°C
In contact with metallic compounds it decomposes yielding hydrogen chloride and carbon dioxide and the inner pressure of the drum increases, therefore it has to be opened with care.
In case of prolonged storage it is recommended to check again the product before use by measuring typical parameters of its quality such as color, hydrogen chloride and isopropanol levels.

TRANSPORTATION

Refrigerated transport.
Refer to MSDS.