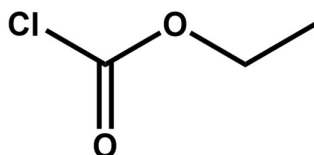


DATA SHEET Nr 2040 L
ETHYL CHLOROFORMATE
ECF



Molecular formula: C₃H₅ClO₂

Molecular weight: 108.5

CAS number: 541-41-3

EC number: 208-778-5

SYNONYMS

Carbonochloridic acid, ethyl ester
ethyl carbonochloridate
ethan-1-yl chloroformate

APPEARANCE

Clear liquid with pungent odor.

PHYSICAL PROPERTIES

Density (20 °C): 1.14 g/cm³

Melting Point: -80.6 °C

Boiling point: 95 °C (101 kPa)

Solubility:

Soluble in usual organic solvents: (acetone, chloroform, toluene, THF).

CHEMICAL PROPERTIES

- Reacts by hydrolysis to yield hydrochloric acid, ethanol and carbon dioxide.
- Reacts with amines yielding ethyl carbamates
- Reacts with alcohols to yield ethyl carbonates.

USES

- Used for derivatization of analytes in chromatographic analysis
- Component in the syntheses of asymmetric carbonates utilized as solvents and battery electrolyte materials
- Used as a building block in a range of pharmacological syntheses frequently involving ethyl carbonates or carbamate functionalities

ETHYL CHLOROFORMATE

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SPECIFICATION

Parameter	Guaranteed value	Method	Operating procedure
Appearance	Clear liquid	Visual	
Color	≤ 30 APHA	Colorimetry	C – 210
Purity	≥ 99.0 %	Gas chromatography	GC – 240
Phosgene	≤ 0.1 %	Iodometry	I – 230
Hydrogen chloride	≤ 0.1 %	Acidimetry	A – 220
Ethanol	≤ 0.1 %	Gas chromatography	GC – 240
Diethyl carbonate	≤ 0.5 %	Gas chromatography	GC – 240
Methyl chloroformate	≤ 0.05 %	Gas chromatography	GC – 240

PACKAGING

Polyethylene lined metal drum containing 200 kg.

HANDLING PRECAUTIONS

- Physicochemical hazard:
Flash point (closed cup): 16 °C
 - Health hazards:
LD 50 (oral, rat): 205 mg/kg
- Corrosive; irritating to skin, mucous membranes and eyes
- Recommended:
Avoid contact with metals that catalyze decomposition.
- Approved safety eyewear, chemically resistant gloves and laboratory-appropriate chemical resistant clothing are recommended when handling

In case of contact with eyes, flush for a minimum of 15 minutes with fresh water and contact a physician.

In case of acute inhalation, remove the contaminated individual to fresh air and seek medical assistance.

- Neutralization:
Neutralize by reaction with cold alkaline solutions.

STORAGE

The product is stable if stored in its closed original drum in a covered, dry, cool and well-ventilated area, protected from exposure to direct sunlight.

In the case of prolonged storage, re-analyze for the presence of HCl and ethanol prior to use

TRANSPORTATION

Refer to MSDS