ethyl chloride

INVENTEC
PERFORMANCE CHEMICALS

PERFORMANCES

Ethyl chloride (C2H5Cl) **or monochloroethane** is a volatile, slightly toxic and very flammable gas. It is also known under the monographic reference R 160.

It is used as:

- Ethylation agent
- Refrigerant
- Solvent

SPECIFICATIONS

Standard characteristics	Limit values
Purity	≥ 99,8 % weight
Moisture content	≤ 100 ppm weight
Acidity (HCL)	≤ 10 ppm weight
Non volatile residue	≤ 60 ppm weight

CHARACTERISTICS

		Units	Values
Chemical Formula			CH_3-CH_2Cl
Molecular weight		g/mol	64.5
Boiling point	at 1.013 bar	°C	+12.3
Melting point	at 1.013 bar	°C	-138.3
Critical temperature		°C	+187.2
Critical pressure		bar	52.7
Latent heat of vaporization	*(boiling point)*	kcal/kg	91.3
Latent heat of melting	*(melting point)*	kcal/kg	16.49
Liquid density	at 15°C	kg/m^3	901
Vapor pressure	at 20°C	bar absolute	1.34
Flash point	closed cup	°C	-50
Lower flammability limit Upper flammability limit	in the air at 20°C below 1.013 bar	% volume	3.8 15.4
Auto-ignition temperature	below 1.013 bar	°C	519

PACKAGING

	Bottles		Container
Capacity (liter)	26	88	930
Tare (kg)	16	38	460
Load (kg)	20	65	740
Diameter (mm)	300	300	860
Height (mm)	630	1530	2330
Outflow external diameter (mm)	21,7	21,7	26,1
Tap : left pitch (mm)	1,814	1,814	1,814
Test pressure (bar)	30	33	33

- Packaging technical characteristics are available upon request to the commercial department.
- Feasibility of filling packaging of the customers if they are in conformity with the legislation.
- Contact us for any other specific packaging.

STORAGE AND SHELF LIFE

Precautions for handling and storage:

French plants are controlled by the regulation of listed Establishments and have to comply with it *(or with the local legislation).*

- All packaging will be stored in a dry, well-ventilated, easily accessible place, sheltered from sunlight and bad weather, away from any ignition source.
- It is recommended to store all packaging either in a specific place or isolated and sheltered by a fence.
- All packaging and piping will be grounded to discharge static electricity.
- Leak detectors, put at ground level, will be connected to an audible alarm, which will trigger in the event of leaks.
- The whole equipment will be tested with an appropriate leak detector before use.
- Material and electrical equipment in an explosive atmosphere will comply with the regulations *(grounding, equipotential bonding, ATEX material).*

INVENTEC can study the set up and assembling of your storage tanks, piping, and pumps, according to the prevailing regulations.

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CONDITIONS OF USE

Please refer to the Material Safety Data Sheet (MSDS) before using the product.

Workers handling the product should be trained about risks and preventive measures.

- In the presence of humidity, **ethyl chloride** hydrolyzes and promotes corrosion.
- At high temperature, it emits phosgene.
- Dry ethyl chloride is not corrosive and can be used with normal metals.
- Light metals and alloys are forbidden.

Ethyl chloride is compatible with:

- **The following plastics**:
  - Polyoxymethylene
  - Polytetrafluorethylene

- **The following elastomers**:
  - BUNA N®
  - BUNA S®
  - Viton *(to be tested)*
  - Neoprene *(to be tested)*

Ethyl chloride is not compatible with:

- Rigid polyethylene
- Polyvinyle chloride
- Polypropylene
- Butadiene
- Styrene

- Butyl rubber
- Natural rubber
- Strong bases

- Oxidizing agents
- Combustive agents

Whatever the material, we advise to carry out resistance tests before any use.

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HEALTH SAFETY AND ENVIRONMENT (HSE)

Symbols and warnings: **EXTREMELY FLAMMABLE (F+)**
HARMFUL (Xn)

Risks	
R 12	Extremely flammable
R 40	Limited evidence of a carcinogenic effect
R 52 / 53	Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment

Safety	
S9	Keep container in a well-ventilated place.
S 16	Keep away from ignition sources. No smoking.
S 33	Take precautionary measures against static discharges.
S 36/37	Wear suitable protective clothing and gloves
S 61	Avoid discharge into the environment. Refer to special instructions / data sheets.

Exposure Limit Value USA (TLV-TWA 8 hours)	**100 ppm V**
CAS number	**75-00-3 :** chloroethane
EINECS number	**200-830-5 :** chloroethane
ODP (Ozone Depletion Potential)	**0**
VOC (Volatile Organic Compound)	**Yes** *(according to the European definition)*

As environmental index calculations evolve constantly, the figures above are communicated as an indication only.

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