FramoChem
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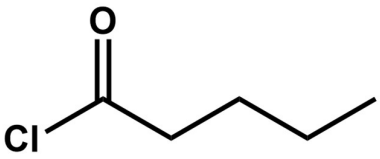
DATA SHEET Nr 1630 E

VALERYL CHLORIDE
VACL



Molecular formula: C_5H_9ClO
Molecular weight: 120.6
CAS number: 638-29-9
EC number: 211-330-1

SYNONYMS

Pentanoic acid chloride
Pentanoyl chloride
Valeryl chloride

APPEARANCE

Clear liquid with pungent odor.

PHYSICAL PROPERTIES

Density (20 °C):	0.989 g/cm^3
Melting point:	−110 °C
Boiling point:	127 °C/101 kPa

Solubility:

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

CHEMICAL PROPERTIES

- Reacts by hydrolysis to yield hydrochloric acid and valeric acid
- Reacts with amines to yield pentanamides.
- Reacts with alcohols to yield pentanoates.

USES

- Used as a building block to deliver pentyl ester or amide moieties in a range of pharmacological syntheses
- Utilized as a component of adhesive materials
- Building block important in a number of liquid crystal compositions

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SPECIFICATION

Parameter	Guaranteed value	Method	Operating procedure
Appearance	Clear liquid	Visual	
Color	≤ 50 APHA	Colorimetry	C – 210
Purity	≥ 99.0 %	Gas chromatography	GC – 544
Phosgene	≤ 0.1 %	Iodometry	I – 230
Acidity (HCl)	≤ 0.1 %	Acidimetry	A – 220
2,2-Dimethylpropionyl chloride	≤ 0.1 %	Gas chromatography	GC – 544
Butyryl chloride	≤ 0.1 %	Gas chromatography	GC – 544
2-Methylbutyryl chloride	≤ 0.5 %	Gas chromatography	GC – 544
3-Methylbutyryl chloride	≤ 0.25 %	Gas chromatography	GC – 544
Other impurities (each)	≤ 0.25 %	Gas chromatography	GC – 544
Total impurities	≤ 1.0 %	Gas chromatography	GC – 544

PACKAGING

- Polyethylene drum with fluorinated inner coating containing 190 kg.

- Polyethylene lined metal drum. **Storage time is maximum 6 months** as the product is found to migrate through the liner, causing corrosion and bulging of metal drums.

HANDLING PRECAUTIONS

- Physicochemical hazard:
  Flash point (closed cup): 23 °C

- Health hazards:
  LD 50 (oral, rat): 650 mg/kg

  Corrosive; irritating to skin, mucous membranes and eyes

- Recommended:

  Avoid contact with metallic compounds, especially iron, as these 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.

However, in case of prolonged storage it is recommended to re-analyze for valeric acid and HCl.

TRANSPORTATION

Refer to MSDS

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