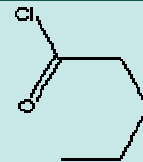


# VALERYL CHLORIDE

## PRODUCT IDENTIFICATION

CAS NO.	638-29-9
EINECS NO.	211-330-1
FORMULA	CH <sub>3</sub> (CH <sub>2</sub> ) <sub>3</sub> COCl
MOL WT.	120.58
H.S. CODE	2915.90
TOXICITY	
SYNONYMS	n-Valeryl chloride; Pentanoyl chloride; Valeroyl chloride; Valerylchlorid (German); Cloruro de valerilo (Spanish); Chlorure de valéryle (French);



## DERIVATION

## CLASSIFICATION

## PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Clear to slightly yellow liquid
MELTING POINT	-90 C
BOILING POINT	125 - 127 C
SPECIFIC GRAVITY	1.016
SOLUBILITY IN WATER	Decomposes
pH	
VAPOR DENSITY	4.16
AUTOIGNITION	
REFRACTIVE INDEX	1.420
NFPA RATINGS	Health: 3 Flammability: 3 Reactivity: 0
FLASH POINT	23 C
STABILITY	Stable under ordinary conditions. Moisture sensitive.

## DESCRIPTION AND APPLICATIONS

Acid chlorides are used as very reactive intermediates to prepare carboxylic acid derivatives including anhydrides, esters and amides because of the two strong electron withdrawing chlorine and oxygen on the carbonyl compound, and positive charge carbon accordingly. It is easy for a weak nucleophile to attack the carbon. Acid chlorides are also reactive with Gilman reagents to prepare large molecules from small ones by replacing the halides with an organic group. Valeryl chloride, C-5 acyl halide, is widely used in agrochemicals and pharmaceuticals manufacturing. It is also used as an intermediate for dyes, textile auxiliaries, peroxide compounds. Acyl is a radical formed from an organic acid by removal of a hydroxyl group. The general formula of acyl compound is RCO-. Acyl halide is one of a large group of organic substances containing the halocarbonyl group, have the general formula RCO·X, where X is a halogen atom (fluorine, chlorine, bromine, iodine, and astatine) and R may be aliphatic, alicyclic, aromatic, and H etc. In substitutive chemical nomenclature, their names are formed by adding '-oyl' as a suffix to the name of the parent compound; ethanoyl chloride, CH<sub>3</sub>COCl, is an example. The terms acyl and aroyl halides refer to aliphatic or aromatic derivatives, respectively. Acyl halides are made by replacing the -OH group in carboxylic acids by halogen using halogenating agents. They react readily with water, alcohols, and amines and are widely used in organic synthetic process whereby the acyl group is incorporated into the target molecules by substitution of addition-elimination sequence called acylation reaction. Acylation reaction involves substitution by an electron donor (nucleophile) at the electrophilic carbonyl group (C=O). Common nucleophiles in the acylation reaction are aliphatic and aromatic alcohols, both of which give rise to esters and amines (RNH<sub>2</sub>) which give amides. The carboxylic acid (X = OH) itself can function as an acylating agent when it is protonated by a strong acid catalyst as in the direct esterification of an alcohol. Two common

acylation agents, with the general formula RCOX, are acid halides (X = halogen atom) and anhydrides (X = OCOR). Schotten-Baumann reaction is an acylation reaction that uses an acid chloride in the presence of dilute alkali to acylate the hydroxyl and amino group of organic compounds. There are also other acylating agents.

#### SALES SPECIFICATION

APPEARANCE	Clear to slightly yellow liquid
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ASSAY	98.0% min
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HCl	0.1% max
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FREE ACID	0.5% max
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#### TRANSPORTATION

PACKING	200kgs in drum
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HAZARD CLASS	8 (Packing group: II)
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UN NO.	2502
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#### OTHER INFORMATION

Hazard Symbols: C, Risk Phrases: 10-34, Safety Phrases: 7-9-16-28-33

#### PRICES