

# Trifluoroacetyl chloride (TFAC)



Trifluoroacetyl chloride is a colorless gas with a pungent odor. It is easily hydrolysed, fumes in air and is easily soluble in organic solvents.

## Chemical reactions and applications

Trifluoroacetyl chloride is a typical intermediate in organic synthesis. Due to the electron-attracting effect of the  $\text{CF}_3$ -group, the reactivity of the carbonyl group to nucleophilic reagents compared with the non-fluorinated analogue  $\text{CH}_3\text{COCl}$  is increased and the basicity of the carbonyl oxygen is reduced.

## Delivery and handling

Trifluoroacetyl chloride is supplied in pressure cylinders. By hydrolysis, trifluoroacetyl chloride is converted to trifluoroacetic acid and hydrochloric acid. For this reason skin contact and inhalation of vapors have to be avoided. Affected parts of the body must be immediately rinsed with a lot of running water and diluted sodium carbonate solution. Care should be taken to ensure adequate ventilation of the working area.

## Toxicological data

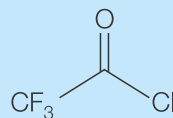
TXDS: ihl-rat LC<sub>50</sub>: 5,000 mg/m<sup>3</sup> NDRC\* –,7,43

Lit.:\* NDRC: National Defense Research Committee, Office of Scientific Research and Development, Progress Report

**Availability** t-lots

**HS. Code No.** 29159090

## Molecular Structure



## Physical Properties

Chemical name:	Trifluoroacetyl chloride
CAS-No.:	354-32-5
Chemical formula:	$\text{CF}_3\text{COCl}$
Molecular formula:	$\text{C}_2\text{ClF}_3\text{O}$
Molecular weight:	132.47
Boiling point:	-19.3 °C
Melting point:	-146 °C
Density:	1.3844 kg/l at 20 °C
Evaporation enthalpy:	21.836 kJ/mol

## Specification

Purity:	min. 99.5 %
Hydrolysable fluoride:	max. 0.02 %

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