



ACETIC ANHYDRIDE

Key features

- Clear, colorless liquid
- Pungent, vinegar-like odor
- Key raw material in pharmaceuticals, detergents and food ingredients

Product description

Acetic anhydride is a clear, colorless liquid with a very pungent, penetrating, vinegar-like odor. It is completely miscible with diethyl ether and can be easily dissolved in the usual organic solvents; it reacts with alcohols. Acetic anhydride is an excellent solvent for numerous organic and inorganic products.

In the presence of water, **Acetic anhydride** reacts slowly at room temperature to form acetic acid. At moderate and elevated temperatures, however, this reaction can be extremely exothermic and violent.

It is accelerated by catalytic quantities of sulfuric acid or other mineral acids and may even be explosive.

Applications

In the chemical industry, the reactivity of the acetyl group of **Acetic anhydride** is used to synthesize end products and intermediates.

Acetic anhydride is widely employed industrially for its acetylating and dehydrating properties.

A major use for it is the acetylation of cellulose to produce acetate fibers, plastics, coatings and films. It is especially

valuable for the direct esterification of alcohols where acetic acid cannot be used.

Another large use for **Acetic anhydride** is in the manufacture of acetylsalicylic acid (aspirin), acetylcholine hydrochloride, acetophenacetin, sulfonamides, acetyl-p-aminophenol, cortisone, acetanilide, theophylline, sulfa drugs, certain vitamins and hormones, and many other pharmaceuticals and pharmaceutical intermediates.

Acetic anhydride is also used to produce acetyl ricinoleates, triacetin, acetyl tributyl citrate and other plasticizers. Triacetic glycerol esters are used as plasticizers in the plastics and paint industry, as fixatives in perfumery and as solvents for fungicides and basic dyes. Acetylated fatty acid monoglycerides and acetylated animal and vegetable fats are used as additives and auxiliaries in the food industry.



Typical Properties

	Unit	
Molar mass	g/mol	102.09
Boiling point at 1013 hPa	°C	140
Melting temperature	°C	-73
Vapor pressure at 20°C at 50°C	hPa hPa	4.7 28.8
Vapor density (air = 1)		3.5
Density at 20°C	g/ml	1.080
Solubility in water		hydrolyses
Evaporation number (n-butyl acetate = 1)		0.46

Americas: sales-ic-am@celanese.com

Europe: sales-ic-eu@celanese.com

Asia Pacific: sales-ic-aoc@celanese.com

China: sales-ic-cn@celanese.com

Celanese

222 W. Las Colinas Blvd., Irving, TX 75039

t: +1 877 832 7782 (Technical Service)

t: +1 800 845 0940 (Customer Service)

w: celanese.com

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