Ethyl acetate

$CH_3COOCH_2CH_3$

Acetic acid ethyl ester
Acetic ester

CAS no. 141-78-6
EINECS no. 205-500-4

Sales specifications

Ethyl acetate (Gas chromatography)	% (w/w)	min. 99.7
Ethanol (Gas chromatography)	% (w/w)	max. 0.05
Water	% (w/w)	max. 0.03
(DIN 51777 / ASTM D 1364 / mod. Karl-Fischer method)		
Acid as acetic acid (DIN EN ISO 3682 / ASTM D 1613)	% (w/w)	max. 0.005
Platinum/Cobalt Colour (Hazen/APHA colour, DIN EN 1557 / DIN ISO 6271 / ASTM D 1209)		max. 10

The product is constantly monitored to ensure that it adheres to the specified values

Technical data

Refractive index n_D at 20 °C (DIN 51423, part 2)		1.371 – 1.373
Residue on evaporation (DIN 53172)	mg/100 ml	max. 2.0
Density at 20 °C (DIN 51757, method D)	g/cm^3	0.899 – 0.901
Melting temperature	°C	-84
Boiling range at 1013 hPa (DIN 53171)	°C	76 – 78
Evaporation number (DIN 53170, diethyl ether = 1)		2.9
Vapour pressure at 20 °C	mbar	102
Dielectric constant at 20 °C (DIN 53483)		6
Water absorption at 20 °C	% (w/w)	3.3
Solubility in water at 20 °C	g/l	78

The technical data are used solely to describe the product and are not subject to constant monitoring.

UZGÖREN

Product description

Ethyl acetate is a neutral colourless liquid with a faint, pleasantly fruity odour. It is miscible in all proportions with the common organic solvents.

Dissolving power:
Ethyl acetate is an excellent solvent for nitrocellulose, cellulose ethers, celluloid, chlorinated rubber, some natural resins and numerous synthetic resins e.g. polyvinyl acetates, polyacrylates, polystyrene (coatings), and alkyd resins as well as plasticizers, fats, waxes and oils.

A mixture of Ethyl acetate and 20 % ethanol is a good solvent for cellulose acetate.

Insoluble substances:
Rubber, bitumen, polyisobutylene, polyvinyl carbazole, polyvinyl chloride (not post-chlorinated) and some natural resins e.g. elemi, shellac, dammar and congo copal.

Applications
The main uses of Ethyl acetate are in the manufacture of nitrocellulose and cellulose acetate lacquers and as a solvent component in adhesives and in spread-coating compounds for artificial leather. It may be used in organic syntheses (esters, drugs) and as an extractant (extraction of water from foods in a vacuum) and cleaner (paint solvent).

Ethyl acetate may also be used as a gelling agent in the manufacture of powder, as an essence and perfume, as a denaturant, as an auxiliary in the manufacture of glazed and transparent paper and as an additive to polishes.

Ethyl acetate may be used as a solvent for the isocyanate component of catalysed lacquers etc.

In the construction sector Ethyl acetate may be used as a hardener for the alkali-sodium silicate stabilizer (alkali silicates) employed in soil stabilization by the soil injection technique.

Safety and handling

Occupational exposure limit [1]	ml/m^3 mg/m^3	400 1500 exceeding factor =1= pragnancy group Y
Acute oral toxicity LD_{50} (rat)	mg/kg	6100
Acute inhalation toxicity LC_{50} (rat, 4 h)	mg/l	> 29.3
Flash point (DIN 51755)	°C	– 4
Ignition temperature (DIN 51 794)	°C	460
Temperature class (DIN VDE 0165)		T1
German clean air regulations		(5.2.5.)
Lower/upper explosion limit in air at 1013 hPa	% (V/V)	2.1 / 11.5
Classification according to hazardous substances directive 67/548/ECC		must bear a hazard warning label hazard symbol: F, Xi hazard warning: highly flammable, irritant R phrases: 11-36-66-67 S phrases: 16-26-33
Water hazard class (VwVwS)		1 (95)

[1] Published by the „Kommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der Deutschen Forschungsgemeinschaft“. (MAK-Werte, TRGS 900/905)

The very mild odour of Ethyl acetate should in no way mislead users into failing to observe the general safety precautions for handling solvents.

Provision should be made for good room ventilation and fresh air. Inhalation of the vapours should be avoided. Ethyl acetate has a narcotic effect and is readily absorbed through the skin. Vessels containing Ethyl acetate should be kept closed.

Before transfer or filling operations, measures should be taken to prevent electrostatic charging.

Contact with the skin and mucous membranes should be avoided. Splashes on the skin or in the eyes should be washed away with plenty of water (if necessary call a doctor). If the product is swallowed, a doctor must be called at once.

Contaminated clothing should be changed at once.

As with all solvents, precautions such as the use of skin creams are advisable.

In the event of fire the following extinguishing agents maybe used: foam, dry powders, carbon dioxide water spray jet; a powerful jet of water is unsuitable.

Self-contained breathing apparatus should be used.

For safe disposal in accordance with the regulations Ethyl acetate has to be taken to an authorized disposal site (e.g. incineration plant).

Small quantities that have been spilt or have leaked out should be taken up with an absorbent material and disposed of in accordance with the regulations.

Dispatch and storage

Storage category (VCI)	3A
GGVE/RID	Cl. 3 / II
GGVS/ADR	Cl. 3 / II
ADNR	Cl. 3 / II
IMDG code	3 / II
UN number	1173
IATA-DGR	3 / 1173 / II

Ethyl acetate is dispatched in containers, rail and road tankers.

Ethyl acetate can be stored in containers made of steel, aluminium or stainless steel. Plastic containers may be used for storage only if they are solvent-resistant.

In closed containers Ethyl acetate maybe stored for a considerable length of time.

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