

Pentyl Acetate

Medium-volatility liquid with high solvent power for numerous natural and synthetic resins. The main application is in the coating industry.

Chemical nature

Reaction mass of 2-methylbutyl acetate and pentyl acetate

Mixture of isomeric pentyl esters of acetic acid (n-/iso-pentyl acetate; n-/iso-amyl acetate)

- n-Pentyl Acetate	Approx. 65%	CAS-No. 628-63-7
- 2-Methylbutyl Acetate	Approx. 30%	CAS-No. 624-41-9
- 3-Methylbutyl Acetate	Approx. 5%	CAS-No. 123-92-2

Molecular formula $C_7H_{14}O_2$

Molar mass 130.19 g/mol

Delivery specification

Property	Value	Unit	Test method
- Pentyl Acetate isomers	98.0 min.	%	GC-Method BASF
- Water	0.1 max.	%	DIN 51777, Part 1
Pt/Co color value (Hazen)	10 max.	-	DIN EN ISO 6271
Acid value	0.3 max.	mg KOH/g	DIN EN ISO 2114

Properties

Pentyl Acetate is a clear, medium-volatility liquid with a mild odor typical of esters. It is miscible with most common organic solvents, but practically insoluble in water.

Pentyl Acetate is similar to butyl acetate in solvent power and diluent tolerance, but evaporates more slowly.

Physical data

The following physical data have been compiled from the literature as well as from BASF measurements and calculations. They provide no guarantee of properties in the legal sense, however.

Property	Condition	Value	Test method
Boiling range	at 1013 hPa; 95 Vol.-%; 2-97 ml	146 – 149°C	DIN 51751
Density	at 20°C	0.875 – 0.877 g/cm ³	DIN 51757
Refractive index n_{20D}		1.402 – 1.404	DIN 51423
Solidification point		Approx. -74°C	
Dielectric constant ϵ		4.68	
Evaporation rate	ether = 1	28	DIN 53170
Solubility	at room temperature	Mass fraction of	
- Pentyl Acetate in water		Approx. 0.1%	
- Water in Pentyl Acetate		Approx. 0.4%	

T [°C]	Vapor pressure P [hPa]	Specific heat Cp [kJ/(kg·K)]	Density ρ [g/cm ³]	Viscosity η [mPa·s]	Refractive index n_D
-20	0.15		0.9158	2.00	
-10	0.40		0.9060	1.58	
0	0.95	2.013	0.8962	1.29	1.4119
10	2.1	2.018	0.8863	1.08	1.4071
20	4.2	2.025	0.8765	0.92	1.4022
30	8.1	2.037	0.8667	0.79	1.3972
40	14.6	2.051	0.8569	0.69	1.3921
50	25.3	2.068	0.8471	0.61	1.3816
60	42.0	2.089	0.8373	0.54	1.3707
80	104.1	2.139	0.8176	0.43	
100	228.8	2.203	0.7980	0.36	
120	456.3	2.279	0.7784	0.30	
140	839.6	2.368	0.7588	0.26	
146.7	1013				

Applications

Pentyl Acetate is a good solvent for numerous synthetic and natural resins, e. g. acrylics and cellulose derivatives. Thus it can be used in the coatings industry for cellulose nitrate lacquers or acrylic paints. In many sectors, the throwing power of paints applied by electrostatic spraying can be improved with Pentyl Acetate. Other examples are aftermarket automotive finishes based on polyurethane resins, cellulose nitrate emulsion paints for leather finishes, and special coatings, e. g. for tennis racquets.

Pentyl Acetate is also used in cleaners.

By virtue of its low solubility in water, Pentyl Acetate is a useful extractant for removing substances from aqueous systems, e. g. in the production of penicillin.

Storage & Handling

Pentyl Acetate should be stored under nitrogen. The storage temperature must not exceed 40°C and moisture are excluded. Under these conditions, a storage stability of 12 months can be expected.

Safety

When using this product, the information and advice given in our Safety Data Sheet should be observed. Due attention should also be given to the precautions necessary for handling chemicals.

Note

The data contained in this Technical Information is based on our current knowledge and experience as well as our investigations according to the today's state-of-the-art. In view of the many factors that may affect processing and application of the Product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the Product for specific purpose. No liability of BASF can be derived therefrom. It is the responsibility of the recipient of the Product to ensure that any proprietary rights and existing laws and legislation are observed.

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