



Polysolvan® 0 (Glycolic Acid-n-Butylester)

KEY FEATURES:

- Excellent dissolving power for a broad range of polymers
- Miscible with the common organic solvents
- Highly effective flow agent





Polysolvan® O

(Glycolic Acid-n-Butylester)

PRODUCT DESCRIPTION

Polysolvan O (Glycolic Acid-n-Butylester/Poly O) is a colorless liquid with a very faint, ester-like odor.

Polysolvan O is miscible with the common organic solvents but only partially miscible with water. With respect to the thermal stability of **Polysolvan O** as a "2-hydroxy ester," reactions such as glycolide formation, transesterification, saponification and etherification occur at elevated temperatures, especially at the boiling point, creating an upwards extension of the boiling range.

DISSOLVING POWER

Polysolvan O has excellent dissolving power for polyvinyl acetates, polyvinyl butyrals, vinyl acetate/vinyl chloride/dicarboxylic acid copolymers, nitrocellulose, celluloid, cellulose ethers, chlorinated rubber, many natural and synthetic resins, and most oils and plasticizers. The following substances are sparingly soluble: manila copal, shellac, cellulose acetate, polystyrene (painted articles), indene resin and alkyd resins modified with oleic acid or fatty acid. **Polysolvan O** does not dissolve: dammar, rubber, bitumen, aldehyde resins, polyisobutylene, painted articles made of polyvinyl chloride (not post-chlorinated) and polyvinyl carbazole, polymethacrylates and polyacrylates.

APPLICATIONS

Because of its very low volatility, **Polysolvan O** is used chiefly as a paint additive in the form of a highly effective flow agent. In amounts of 3%-5% it gives nitrocellulose lacquers excellent gloss and smooth flow properties. To produce a higher gloss, the amount of **Polysolvan O** in leather lacquers based on nitrocellulose can be increased. Because of its faint odor, **Polysolvan O** is also used in brush-applied paints. It can be added to cellulose acetate paints, alkyd resin and oil paints to prevent blushing at high relative humidity. The occasionally severe wrinkling of various oil paints can be largely prevented by an addition of 1%-2% **Polysolvan O**. The addition of **Polysolvan O** as a high-boiling solvent to stoving finishes effects uniform flow of the paint film. It is also employed in the manufacture of printing inks, where extremely faint odor, high boiling point and low volatility are of particular importance. The high dilutability of **Polysolvan O** has a beneficial effect in all applications. It lowers the minimum film-forming temperature (DIN 53 787) of polyvinyl acetate dispersions. When **Polysolvan O** is added, initial thickening might occur as a result of partial dissolving of the polymer particles; slow addition is, therefore, recommended. Furthermore, it is advisable first to emulsify **Polysolvan O** with an equal quantity of water.

TYPICAL PROPERTIES

	Unit	
Boiling point (DIN 53 171)	°C	180
Melting point	°C	-26
Density at 20°C (DIN 51 423)	g/cm ³	1.015 – 1.023
Refractive index n _D at 20°C (DIN 51 423, part 2)	°C	1.423 – 1.426
Viscosity at 20°C (calc.)	mPa · s	5,23
Solubility in water at 20°C	g/l	46
Water absorption at 20°C	% (w/w)	25
Vapor pressure at 20°C	mbar	1.3
Specific heat at 20°C	kJ/kg · K	Approx. 2.1
Heat of vaporization at 1013 hPa	J/g	Approx. 373
Dielectric constant at 20°C		Approx. 13
Electrical conductivity at 20°C	S	Approx. 2.5 · 10 ⁻⁷
Evaporation number (DIN 53 170, diethyl ether = 1)		Approx. 460
Evaporation (DIN 53 249, dipentene)	% (w/w)	18