

# SOLUBILITY AND COMPATIBILITY OF NITCHEN PVAC SOLID RESINS

## Solubility of Nitchen PVAC Solid Resins in Different Solvents and Monomers

### Esters

Methyl acetate	●
Ethyl acetate	●
n-Propyl acetate	●
n-Butyl acetate	●
sec-Butyl acetate	●
iso-Butyl acetate	●
tert-Butyl acetate (TBAC)	●
Amyl acetate	●
Glycolic acid butyl ester	●
2-Methoxy ethyl acetate	●
2-Ethoxy ethyl acetate	●

### Ketones

Acetone	●
Methyl ethyl ketone	●
Methyl isobutyl ketone	●
Cyclohexanone	●
Isophorone	●

### Aromatic Hydrocarbons

Ethyl benzene	⦿
Toluene	⦿
Xylene	○
Styrene	●

### Chlorinated Hydrocarbons

Methylene chloride	●
Chloroform	●
Trichloroethylene	●

### Aliphatic Hydrocarbons

White spirit	○
Mineral oils	○

### Acrylic Monomers

Methyl methacrylate (MMA)	●
1,3-Butanediol dimethacrylate (1,3-BDDMA)	●
1,4-Butanediol dimethacrylate (1,4-BDDMA)	●

- Soluble
- ⦿ Partially soluble (depends on molecular weight)
- Insoluble

### Alcohols

Methanol	●
Ethanol, anhydrous	⦿
Ethanol, 94%	●
Ethanol, 50%	⦿
i-Propanol, anhydrous	○
i-Propanol, 90%	●
n-Butanol	●
Cyclohexanol	○
Ethylene glycol	○
2-Ethoxy ethanol	⦿
2-Butoxy ethanol	⦿

### Ethers

Diethyl ether	○
Tetrahydrofuran	●

- Soluble
- ⦿ Partially soluble (depending on molecular weight)
- Insoluble

## Compatibility of Nitchen Solid Resins with Other Binders

### Synthetic Polymers / Plastics

Polyethylene (PE)	⦿
Polypropylene (PP)	⦿
Polystyrene (PS)	○
Vinyl chloride – vinyl acetate copolymers	○
Ethylene butyl acrylate copolymers (EBA)	⦿
Ethylene vinyl acetate copolymers (EVA)	⦿
Polymethyl methacrylate (PMMA)	⦿
Polyesters	⦿
Nitrocellulose (soluble in alcohol)	⦿
Nitrocellulose (soluble in ester)	●
Polyvinyl methyl ether	●
Urea-formaldehyde	○
Unsaturated polyester resins (UP resins)	●
Vinyl ester resins (VE resins)	●
Epoxy resins (EP resins)	●

- Compatible
- ⦿ Partial compatibility or compatibility depends on specific grade and/or ratio
- Incompatible

### Natural and Hydrocarbon Resins

Alkyd resins	⦿
Rosin esters	⦿
Terpene resins	⦿
Hydrocarbon resins	⦿

- Compatible
- ⦿ Partial compatibility or compatibility depends on specific grades and/or ratio
- Incompatible

### Plasticizers

Plasticizers can be added to Nitchen PVAC resins to increase flexibility and tack, to lower the heat-sealing temperature and to increase water resistance. Coatings and adhesives based on Nitchen PVAC resins usually require only small amounts of plasticizer to increase their flexibility. Higher levels of plasticizer (20% or more) lower the softening point considerably, reducing the heat-resistance of the adhesives and increasing the surface tackiness of adhesives and coatings based on Nitchen PVAC Resin.

Recommended plasticizers for Nitchen PVAC solid resins are:

- Dibenzoates E.g. diethylene glycol dibenzoate or dipropylene glycol dibenzoate
- Citrates E.g. tributyl-o-acetyl citrate (ATBC) or tris-(2-ethylhexyl) o-acetyl citrate (ATEHC)
- Polymeric plasticizers E.g. polyadipates
- Triacetin (glycerol triacetate)