

Coating solvent compatibility guide

Selecting coating solvents for use with Eastman Trēva™ engineering bioplastic

With the growing interest in HMI lenses and decorative trim, many engineers and designers are achieving functional and aesthetic success with Eastman Trēva™ engineering bioplastics. Trēva is an innovative glasslike polymer that is based on cellulose ester chemistry and engineered for optimum performance and sustainability. Trēva offers excellent flow, low birefringence, and low volatile organic components (VOC), making it suitable for many standard coating methods.

This guide helps you select the best solvents for coatings applied to Trēva. Tests were conducted with Eastman cellulose acetate propionate (CAP) resins as proxies for Trēva. Results are shown in the following table. Additional results appear on the reverse side along with a special cautionary note about using solvent blends.

Table 1

Solvent, 15% solids in each	Rating
Ketones	
Acetone	S
Methyl ethyl ketone (MEK)	S
Methyl <i>n</i> -propyl ketone (MPK)*	S
Methyl isobutyl ketone (MIBK)*	S
Methyl isoamyl ketone (MIAK)*	S
Methyl <i>n</i> -amyl ketone (MAK)*	S
Cyclohexanone	S
Eastman C-11 ketone*	I
Diisobutyl ketone (DIBK)*	I
Isophorone	S
Esters	
Methyl acetate	S
Ethyl acetate (85%)*	S
Ethyl acetate (99%)*	S
2-Ethylhexyl acetate*	PS
<i>n</i> -Propyl acetate*	S
Isopropyl acetate*	S
Isobutyl acetate*	S
<i>n</i> -Butyl acetate*	S
Ethylene glycol diacetate*	S
Dibasic esters	S
Isobutyl isobutyrate (IBIB)*	PS
Amyl acetate	PS
Ether ester	
Eastman EEP solvent*	S

Solvent, 15% solids in each	Rating
Alcohols	
Diacetone alcohol	S
Tecsol™ C anhydrous alcohol*	I
Methyl alcohol	PS
Ethyl alcohol (undenatured)	I
Tecsol™ C alcohol (95%)	PS
Eastman Texanol™ ester alcohol*	I
Amyl alcohol	I
Glycol ethers	
Eastman PM solvent*	S
Eastman DM solvent*	S
Eastman DE solvent*	S
Eastman DP solvent*	S
Eastman DB solvent*	S
Dipropylene glycol monomethyl ether	S
Eastman EP solvent*	S
Eastman EB solvent*	S
Eastman EEH solvent*	I
Propylene glycol monobutyl ether	PS
Propylene glycol monopropyl ether	PS
Propylene glycol mono- <i>t</i> -butyl ether	PS
Aliphatic hydrocarbon solvents	I
Glycol ether esters	
Eastman PM acetate*	S
Eastman EB acetate*	S
Eastman DE acetate*	S
Eastman DB acetate*	S



Table legend

Term	Meaning	Risk of solvent damage
S	Soluble	High
PS	Partially soluble	Moderate
I	Insoluble	Low

For more information, see the reverse side, visit www.eastman.com/products, or contact your Eastman technical service representative.

*Product manufactured by Eastman

Additional testing was conducted on less common solvents and blended coating solvents, again using CAP resins as proxies for Eastman Trēva™ engineering bioplastics.

NOTE FOR SOLVENT BLENDS: Care should be taken applying test results to blended coating solvent systems. For example, in these tables, toluene is identified as having a moderate risk of solvent damage and ethyl alcohol is identified as presenting a low risk. However, when these two solvents are blended, they create a high risk of damage.

Table legend

Term	Meaning	Risk of solvent damage
S	Soluble	High
PS	Partially soluble	Moderate
I	Insoluble	Low

Solvent, 15% solids in each	Rating
Miscellaneous	
Tetrahydrofuran (THF)	S
Dimethylformamide (DMF)	S
M-Pyrol™ solvent	S
1,1,1-Trichloroethane	S
Heptane	I
Xylene	S
Methylene chloride	S
Toluene	PS
Blends	
Toluene/xylene/Tecsol C anhydrous* (60/20/20)	S
Tecsol C anhydrous*/ethyl acetate* (70/30)	S
Tecsol C anhydrous*/ethyl acetate* (80/20)	S
Tecsol C anhydrous*/ <i>n</i> -propyl acetate* (80/20)	S
Tecsol C anhydrous*/ <i>n</i> -propyl acetate* (90/10)	S
Tecsol C anhydrous*/isopropyl acetate* (70/30)	S
Tecsol C anhydrous*/isopropyl acetate* (80/20)	S
Tecsol C anhydrous*/Isopropyl acetate* (90/10)	S

Solvent, 15% solids in each	Rating
Blends (continued)	
<i>n</i> -Propyl alcohol*/water (85/15)	S
<i>n</i> -Propyl alcohol*/water (70/30)	S
<i>n</i> -Propyl alcohol*/ethyl acetate* (80/20)	S
Isopropyl alcohol*/ethyl acetate* (80/20)	S
Isopropyl alcohol*/water (85/15)	S
Isopropyl alcohol*/water (75/25)	S
Isopropyl alcohol*/isopropyl acetate* (90/10)	PS
Isopropyl alcohol*/isopropyl acetate* (80/20)	PS
<i>n</i> -Propyl alcohol*/ethyl acetate* (90/10)	PS
Isopropyl alcohol*/ethyl acetate (85%–88%) (90/10)	PS
Toluene/Tecsol C anhydrous* (80/20)	S
<i>n</i> -Propyl acetate*/ethyl acetate (65/35)	S
Isopropyl acetate/toluene (60/40)	S
Tecsol C anhydrous*/ethyl acetate (99%) (70/30)	S
Tecsol C anhydrous*/ethyl acetate (99%) (80/20)	S
<i>n</i> -Propanol/isopropyl alcohol*/water (40/40/20)	S

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For details and more information about selecting solvents for coatings applied to Trēva, contact your Eastman technical service representative.

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