



# EASTOFLEX

amorphous polyolefin

## Solubility of *Eastoflex* Amorphous Polyolefins (APOs) in Various Solvents

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Three different *Eastoflex* amorphous polyolefins have been evaluated in various solvents.<sup>1</sup> They include:

- *Eastoflex* E1003 low viscosity propylene ethylene copolymer
- *Eastoflex* E1060 propylene ethylene copolymer
- *Eastoflex* P1023 propylene homopolymer

The APOs were added at a level of 10% by weight and mildly agitated for 24 hours at room temperature. Solubility of each APO in various solvents is shown in Table 1. Results indicate that all three APOs are soluble at a 10% level in aromatic and chlorinated solvents. Low molecular weight E1003 displays increased solubility in aliphatic solvents and several ketones.

This information will aid customers in selecting appropriate solvents for amorphous polyolefins used in solution coatings and adhesives, as well as choosing solvents for cleaning equipment used to process amorphous polyolefins.

<sup>1</sup>*Other amorphous polyolefins were evaluated with similar results.*

Table 1

Solubility Values and Ratings of Amorphous Polyolefins<sup>a</sup>

Solvent	Solubility Parameter	Hydrogen Bonding Value	<i>Eastoflex</i>		
			E1003 APE	E1060 APE	P1023 APP
Mineral spirits	6.1	2.5	S	INS	INS
n-Decane	6.6	2.5	S	C	C
Kerosene	7.2	2.5	S	INS	INS
Hexane	7.3	2.1	S	C	C
Heptane	7.4	2.2	S	C	C
VM&P naphtha	7.6	2.5	S	C	C
Diethyl amine	8.0	8.5	INS	INS	INS
Ethyl alcohol	8.0	8.5	INS	INS	INS
Diethyl carbitol	8.1	5.5	INS	INS	INS
Lauryl alcohol	8.1	8.5	INS	INS	INS
Cyclohexane	8.2	2.2	S	C	C
Isopropyl acetate	8.4	6.0	INS	INS	INS
Methyl isoamyl ketone	8.4	8.2	INS	INS	INS
Methyl isobutyl ketone	8.4	5.5	S	INS	INS
Methyl n-amyl ketone	8.5	5.5	S	INS	INS
Carbon tetrachloride	8.6	3.4	S	C	C
Butyl bromide	8.7	5.5	INS	INS	INS
<i>Cellosolve</i> acetate	8.7	5.5	INS	INS	INS
Diethyl ketone	8.8	6.2	PS	INS	INS
n-Butyl acetate	8.8	5.5	PS	INS	INS
Xylene	8.8	3.5	S	S	S
Toluene	8.9	3.3	S	S	S
Butyl <i>Cellosolve</i>	8.9	7.0	INS	INS	INS
Mesityl oxide	9.0	5.5	INS	INS	INS
Ethyl acetate	9.1	5.2	INS	INS	INS
Isophorone	9.1	7.0	INS	INS	INS
Diacetone alcohol	9.2	6.8	INS	INS	INS

<sup>a</sup>10% by weight solutions

Legend: S = clear solution, C = cloudy solution, INS = insoluble, PS = phase separation

Table 1 (Continued)

Solvent	Solubility Parameter	Hydrogen Bonding Value	<i>Eastoflex</i>		
			E1003 APE	E1060 APE	P1023 APP
Methyl ethyl ketone	9.3	5.4	INS	INS	INS
Dibutyl phthalate	9.3	7.0	INS	INS	INS
Trichloroethylene	9.3	2.5	S	S	S
2-Ethylhexanol	9.5	8.5	INS	INS	INS
Methyl acetate	9.6	5.5	INS	INS	INS
<i>Carbitol</i>	9.6	9.7	INS	INS	INS
Nitropropane	9.9	1.9	INS	INS	INS
1,4-Dioxane	9.9	6.7	INS	INS	INS
<i>Cellosolve</i>	9.9	6.8	INS	INS	INS
Acetone	10.0	5.9	INS	INS	INS
Acetic anhydride	10.3	8.5	INS	INS	INS
Dimethyl phthalate	10.7	5.5	INS	INS	INS
Methyl <i>Cellosolve</i>	10.8	6.5	INS	INS	INS
n-Amyl alcohol	10.9	8.5	INS	INS	INS
Nitroethane	11.1	2.5	INS	INS	INS
Cyclohexanol	11.4	8.5	C	C	C
Isopropyl alcohol	11.5	8.7	INS	INS	INS
Aniline	11.8	4.5	INS	INS	INS
Allyl alcohol	11.8	8.5	INS	INS	INS
Acetonitrile	11.9	2.5	INS	INS	INS
Dimethyl sulfoxide	12.0	5.5	INS	INS	INS
Diethylene glycol	12.1	8.5	INS	INS	INS
Butyrolactone	12.6	5.5	INS	INS	INS
Propylene glycol	12.6	5.5	INS	INS	INS
Nitromethane	12.7	2.5	INS	INS	INS
Benzene	—	—	—	—	—

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