

Eastman 425 plasticizer for flexible PVC

Non-phthalate and fast fusing

Eastman 425 is a non-phthalate plasticizer for vinyl compounds and plastisols. It is compatible with PVC as well as PVC/VA copolymers. The performance of Eastman 425 plasticizer is equal to or better than other available higher-solvating plasticizers.

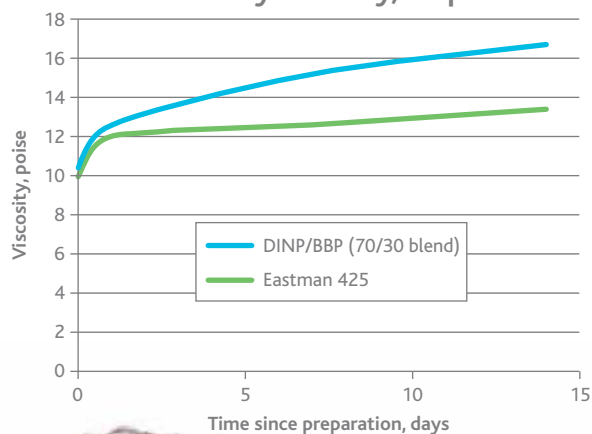
Higher-solvating plasticizers are used in flexible vinyl to reduce the processing temperature or to increase line speed. Lower processing temperatures can save energy costs or may be required when flexible vinyl is used with other more heat-sensitive materials.

Replacing DINP/BBP

Plastisols prepared using 80 phr of Eastman 425 in place of a 70/30 blend of DINP/BBP result in plastisols with a slightly lower and more stable viscosity as shown in Figure 1. PVC made from those plastisols has very similar mechanical and permanence properties as shown in Table 1. In addition, the low-temperature properties of PVC made with either Eastman 425 or the DINP/BBP blend, as measured by the torsion modulus or low-temperature impact, are virtually identical.

Changing regulations and consumer preferences have caused a technology shift towards non-phthalate plasticizers in the marketplace. Eastman 425 is poised to meet that need for flexible PVC applications.

Figure 1 Plastisol Brookfield viscosity stability, 80 phr^a



^a23°C (73°F), 20 RPM, #6 Spindle, ASTM D1824

Table 1 Physical properties of 80 phr plastisols

Mechanical properties	Eastman 425	DINP/BBP (70/30 blend)	Reference
Shore A hardness, 10 s	64	64	ASTM D1706
Tensile strength, mPa (psi)	8 (1,160)	7 (1,015)	ASTM D412
Elongation, %	202	202	ASTM D413
Tear strength, N/mm (ppi)	26 (148)	24 (137)	ASTM D624
Permanence, % loss			
Soapy water extraction	2.4	0.9	ASTM D1239
Oil extraction	31.3	26.9	ASTM D1239
Hexane extraction	26.2	42.3	ASTM D1239
Activated carbon	7.4	10.3	ASTM D1203



For more information, contact your Eastman representative at 1 800 EASTMAN or visit EastmanPlasticizers.com.

Performance benefits

In flexible vinyl compounds, Eastman 425 offers

- Non-phthalate
- Faster dry-blending times
- Lower temperature or faster processing
- Excellent mechanical properties
- Low-temperature flexibility
- Low volatility

In flexible vinyl plastisols, Eastman 425 offers

- Non-phthalate
- Low viscosity
- Good viscosity stability
- Fast fusing
- Efficiency comparable to traditional plasticizers
- Excellent mechanical properties
- Good low-temperature flexibility
- Low volatility

Table 2 Typical properties of Eastman 425

Property	Typical value, units ^a
Form ^b	Liquid
Color ^b	Colorless
Odor ^b	Slight
Specific gravity @ 25°C	1.018
Boiling point	>300°C (>572°F)
Viscosity @ 25°C	0.0572 Pa·s (57.2 cP)
Flash point, Setaflash closed cup	208.4°C (407.1°F)

^aUnits are in SI or US customary units.

^bAt 23°C (73°F) and 50% relative humidity.



EASTMAN

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