

A high-angle, rear-side view of a silver car, showing the rear wheel, trunk, and rear window. The car is positioned on a light gray surface that curves away into the distance. The background is white.

EASTMAN

Efficiency meets fast fusing

*Eastman Effusion™ plasticizer for
automotive applications*

The efficient choice

for automotive applications

Eastman Effusion™ plasticizer is a unique, fast-fusing solution that enables increased production line speeds and lower processing temperatures, allowing you to reduce your energy costs. Ideal for automotive underbody coatings and body seam sealers, it is both highly efficient and effective at lowering fusion temperatures.

And it outperforms traditional “fast fusers,” making Effusion a viable non-phthalate alternative. When compared to traditional fast-fusing plasticizers, Effusion provides similar properties at a lower loading level.

Underbody and sealer formulations . . . above the competition

Fast fusing and efficient, Eastman Effusion™ plasticizer can be used as an effective replacement for less efficient plasticizers . . . and is a solution that helps improve automotive

brand experiences. Effusion enables underbody coatings to have superior flexibility even at subzero temperatures and can also help improve paintability of coating and sealer formulations.

Blend to optimize

As an energy-saving measure, automotive OEMs may be able to reduce their paint oven temperatures by blending a fast fuser like Effusion with a general-purpose plasticizer such as Eastman 168™ non-phthalate plasticizer. Also, plastisols made by blending these two plasticizers exhibit lower initial and aged viscosities as shown in Figure 1 while other properties remain the same (Table 1).

Blending plasticizers can also give manufacturers more options when trying to target a replacement for phthalate plasticizers. For instance, specific blends of Eastman 168 and Effusion can provide equivalent processing and performance to phthalate plasticizers as shown in Figures 2 and 3.

Figure 1

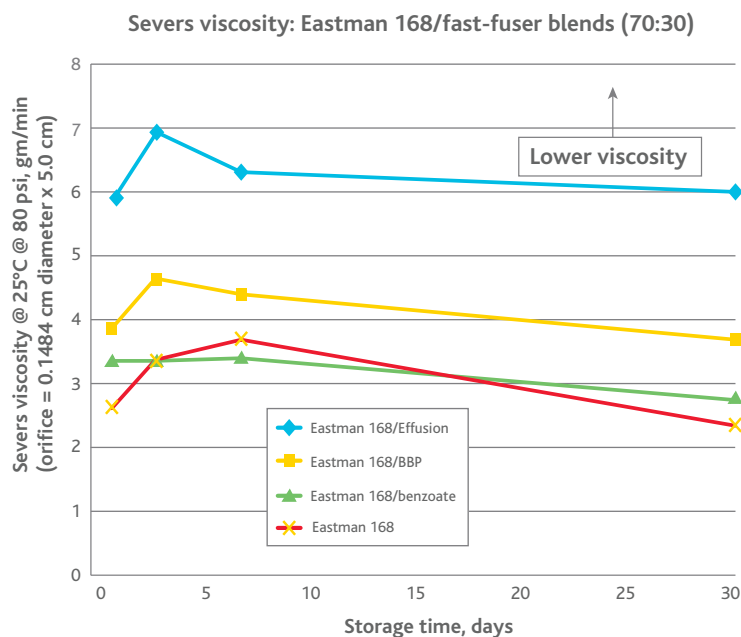




Figure 2

Eastman Effusion blends versus common phthalates:
Fusion temperature at 60 phr loading

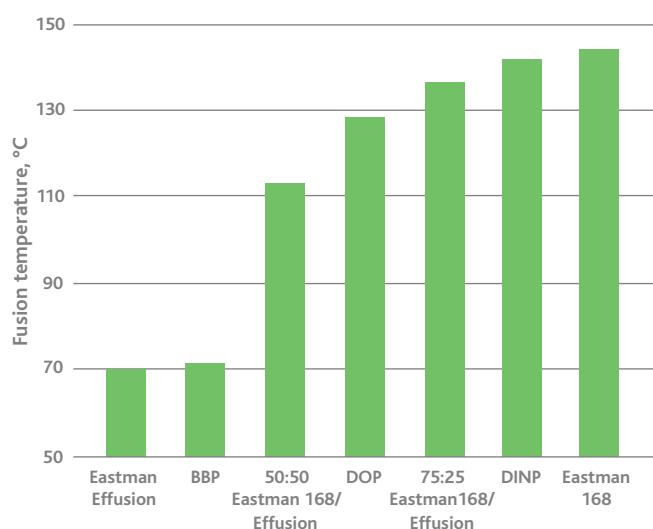


Figure 3

Eastman Effusion blends versus common phthalates:
Shore A hardness at 60 phr loading

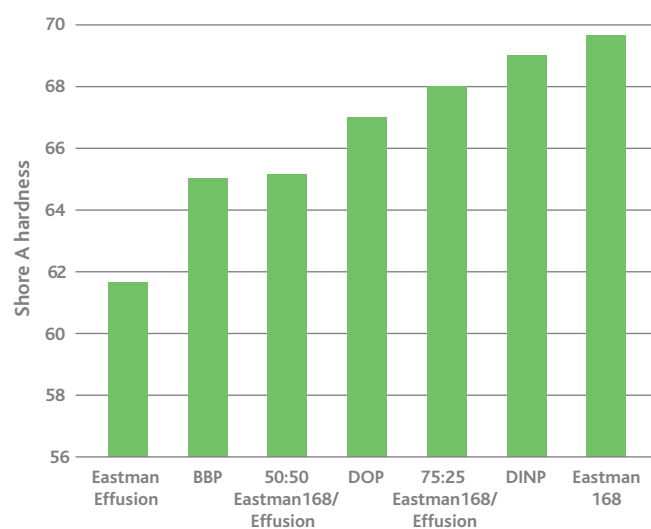


Table 1

Mechanical properties: Eastman 168 blends

Property	Eastman 168/ Effusion 70/30 at 60 phr	Eastman 168/ BBP 70/30 at 60 phr	Eastman 168/ benzoate 70/30 at 60 phr	Eastman 168 at 60 phr
Fusion temperature, °C	128	131	134	148
Tensile strength, MPa	17.4	17.2	17.5	17.9
Elongation at break, %	299	304	298	321
Modulus at 100% elongation, MPa	9.4	8.5	8.6	9.1
Shore A hardness	67	67	67	71
Tear resistance, kN/m	65	65	65	64
Tear energy, N*mm	1191	1250	1123	1136
Brittleness temperature, °C	-45	-36	-39	-47

To find out more about the secure supply and efficiency of Eastman Effusion as a fast-fusing non-phthalate plasticizer for automotive applications, call your Eastman representative today or visit www.eastmanplasticizers.com.

Protect your bottom line

When your formulation requires a fast fuser to achieve extremely low fusion temperatures, Eastman Effusion is your non-phthalate solution. And when you switch, an Eastman technical specialist will be by your side to help make your transition seamless.

Formulation features

- Non-phthalate
- Fast fusing
- Highly efficient



Performance benefits

- Excellent solvating ability in PVC
 - Lower-temperature processing of PVC
 - Faster line speeds
 - Wider processing windows
- Excellent in-process heat stability
- Greater efficiency at lowering hardness
 - Reduction of plasticizer use in formulation
 - Better low-temperature flexibility
- Lower density, which can be a benefit when selling by volume
- Excellent viscosity stability when formulated with general-purpose plasticizers such as Eastman 168

EASTMAN

The results of **insight**™

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