

Technical tip

Eastman Triacetin non-phthalate plasticizer for waterborne adhesives

Advantages

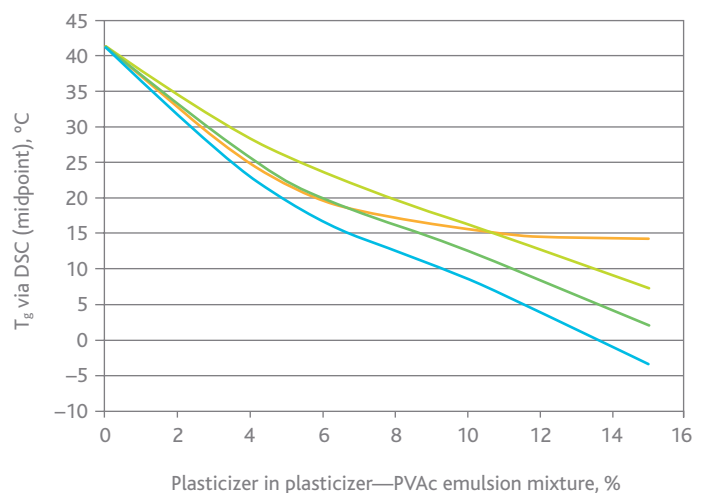
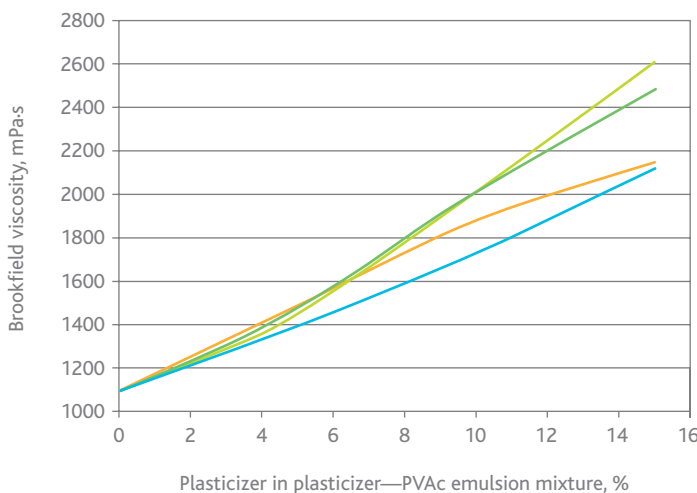
- Excellent T_g suppression in vinyl acetate homo- and copolymer emulsions
- Readily biodegradable
- Reliability of supply with no adverse labeling required
- Good compatibility with natural and synthetic rubber
- Clear odorless liquid

In vinyl acetate homopolymer formulations (PVAc)

Triacetin has traditionally been used as a plasticizer in many applications. In polyvinyl acetate (PVAc) systems, triacetin is very effective in T_g reduction and facilitates desired viscosity increase in the final emulsion (see chart below). Triacetin is very similar in performance to other common plasticizers, but in the event additional viscosity increase is required, Eastman Triacetin is compatible with many other plasticizers, such as Benzoflex™ 50 plasticizer, Eastman Effusion™ plasticizer, and Eastman TXIB™ formulation additive, and can be blended to yield the desired final properties.

Eastman Triacetin can be used alone or in combination with the other plasticizers shown to optimize the T_g suppression benefit while maximizing viscosity increase. You should determine the correct Eastman Triacetin level for your specific formulation.

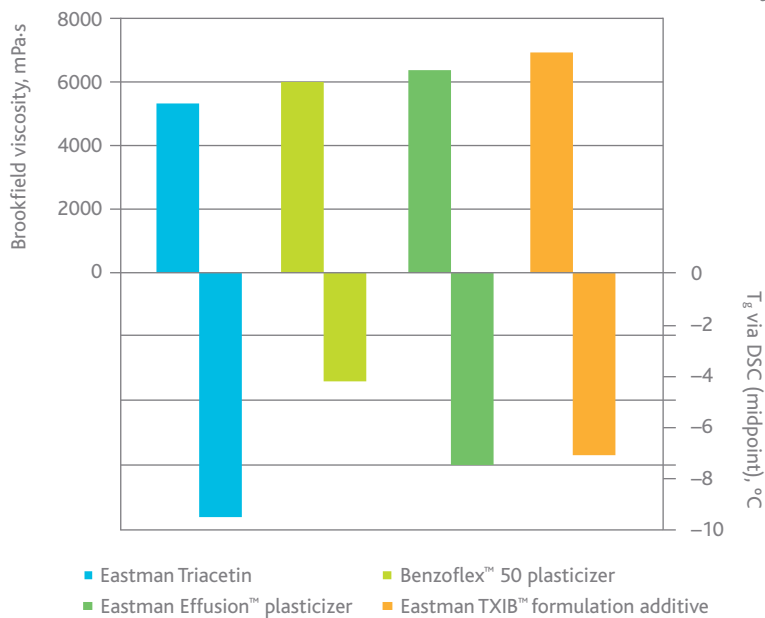
Effect of plasticizer on PVAc viscosity



— Eastman Triacetin — Benzoflex 50 — Eastman Effusion — Eastman TXIB

In vinyl acetate ethylene copolymer formulations (VAE)

The following graph shows that Eastman Triacetin imparts excellent T_g suppression. As in PVAc adhesives, the viscosity increase seen on the addition of Eastman Triacetin is less than some of the other polymers in our range. To optimize your formulation, blends of Eastman Triacetin with our other plasticizers mentioned can achieve the desired balance of viscosity and T_g suppression.



Other applications

Eastman Triacetin is used as a highly effective non-phthalate plasticizer for cellulosic resins and is compatible in all proportions with cellulose acetate, nitrocellulose, and ethyl cellulose. Eastman Triacetin is useful for imparting plasticity and flow to laminating resins, particularly at low temperatures, and is also used as a plasticizer for vinylidene polymers and copolymers. It serves as an ingredient in inks for printing on plastics and as a plasticizer in nail polish. In other technical applications, Eastman Triacetin can be a core sand binder in the metal foundry section.

To find out more about the secure supply and efficiency of Eastman Triacetin in lowering T_g , contact your Eastman representative today.

Regulatory status in food contact application

Product regulatory information sheets for Eastman Triacetin, Benzoflex 50, Eastman Effusion, and Eastman TXIB are available on request. Contact Eastman at 800-EASTMAN or visit www.EastmanPlasticizers.com for more information.

	North America Region	European Union – (EU) No. 10/2011*
Eastman Triacetin	Lawful for use as a prior-sanctioned plasticizer in food packaging	Lawful for use in certain food contact applications
Benzoflex™ 50 plasticizer	Lawful for use in certain food contact applications	Not listed
Eastman Effusion™ plasticizer	Lawful as a plasticizer in polymers for use: (1) in adhesives, (2) in pressure sensitive adhesives, and (3) as a coating or component of paper or paperboard intended for use in contact with dry foods with no free surface fat or oil	Not listed
Eastman TXIB™ formulation additive	Lawful for use in certain food contact applications	Lawful for use in certain food contact applications

*Regulation 10/2011 refers to food contact applications in plastics.

Typical properties

	Eastman Triacetin	Benzoflex 50	Eastman Effusion	Eastman TXIB
Specific gravity @ 20°C	1.16	1.15	1.05	0.95
Surface tension @ 25°C, dynes/cm	36	43	34	27.5
Boiling point @ 760 mm Hg, °C	258	370	337	281
Freezing point, °C	3.2	<16*	16	-70
Viscosity, Brookfield @ 25°C, mPa·s	17	78	16	5

* The plasticizer has the possibility to solidify at 16°C, however, they supercool. The melting point is 16°C. The pour point is <-21°C. Experience indicates that Benzoflex 50 remains liquid down to 0°C.



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