

# Stick with the safe choice.

Eastman non-phthalate plasticizers  
for adhesives, sealants, and caulks



# Flexible solutions for strong brands.

Creating much-needed elasticity, plasticizers improve the performance of adhesives, sealants, and caulks—optimizing viscosity, low-temperature efficacy, set-time functionality, impact resistance, and even tack. Changing regulations and consumer preferences now demand that manufacturers use more non-phthalate plasticizers in the marketplace. Eastman Chemical Company is poised to meet that demand.

For more than 50 years, Eastman has produced innovative plasticizers that are used in a variety of applications. Our versatile line of plasticizers includes many non-phthalate solutions to address the market’s emerging regulatory needs and perceptions. Today, we’re the global leader in non-phthalate plasticizers with the broadest portfolio line in the industry.

## Which Eastman non-phthalate plasticizer is right for you?

End-use recommendations for European Markets

	Benzoflex 50	Benzoflex 2088	Benzoflex LA-705	Benzoflex 9-88	Benzoflex 9-88 SG	Benzoflex 352	Benzoflex PS-507	Benzoflex 1046	Eastman 168	Eastman Effusion	Eastman TXIB	Eastman Triacetin	Eastman VersaBond
<b>Adhesives</b>	Cyanoacrylate adhesives			●						●			
	Polyurethane adhesives				●						○		
	Hot melt adhesives					●							
	Latex construction adhesives	●	○							●	○		
	Latex packaging adhesives—polyvinyl acetate		●	○						○	○	●	
	Latex packaging adhesives—vinyl acetate/ethylene copolymer		●	○							○	○	
	Latex packaging adhesives—vinyl acetate/acrylic copolymer		●							●	○	○	
Latex pressure sensitive adhesives (PSA)		●						●			○		
<b>Sealants</b>	Polyurethane sealants			○	●								
	Latex sealants	●	○						●	○	○		
	PVC plastisol sealants		●					●	●		●		
	Polysulfide sealants		○		○		○						●

● Recommended      ○ Suitable in some formulations

For technical data, sales specifications, and SDS, visit [www.EastmanPlasticizers.com](http://www.EastmanPlasticizers.com).

Eastman Chemical Company was among the first to develop non-phthalate alternative plasticizers for making PVC flexible. In fact, Eastman 168™ non-phthalate plasticizer has been safely used for more than 35 years, with proven performance in a wide variety of applications. Benzoflex™ non-phthalate high-solvating plasticizers from Eastman have a 25-year track record of successful and safe use in adhesives, caulks, and sealants.

# Eastman non-phthalate plasticizers for adhesives, sealants, and caulks.

## **Benzoflex™ 2088 plasticizer**

Benzoflex 2088 is a high-solvating plasticizer primarily known for its exceptional performance in polyvinyl acetate and water-based adhesive systems. In adhesives, it displays excellent wet tack, set times, and open times and also improves adhesion in acrylic latex caulks. It may also be used when formulating pressure sensitive acrylics. Benzoflex 2088 is also used in the A side of 2K polysulfide sealants.

## **Benzoflex™ 50 plasticizer**

A versatile plasticizer, Benzoflex 50 is compatible with polyvinyl acetate (PVAc) homopolymer and copolymer emulsions. It is suitable for most adhesive systems, providing improved wet tack, set times, and open times. It is also an efficient plasticizer in acrylic latex caulk formulations.

## **Benzoflex™ 9-88 plasticizer**

A high-solvating plasticizer used in a wide variety of applications including both adhesives and caulks, Benzoflex 9-88 can be recommended in such polymer systems as cyanoacrylate adhesives, polyurethane dispersions, polysulfide sealants, and polyurethane sealants.

## **Benzoflex™ 9-88 SG plasticizer**

Benzoflex 9-88 SG is very compatible and efficient for 2K polyurethane systems—recommended for cast urethane applications that require minimum cure interference and maximum compatibility.

Adaptable to both metering and hand batch urethane mix systems, Benzoflex 9-88 SG offers excellent inert filler acceptance and contributes improved tear strength, better rebound, and reduced swell with certain solvents.

## **Benzoflex™ LA-705 plasticizer**

Benzoflex LA-705 offers a global solution for waterborne adhesives, including those based on polyvinyl acetate homopolymers and copolymers. It allows manufacturers of waterborne adhesives to maintain the same excellent levels of performance as Benzoflex 50 while reducing formulation cost.

## **Benzoflex™ 352 plasticizer**

Benzoflex 352 is a white flake solid with a melt point of 118°C, which can offer significant performance advantages in a variety of hot melt adhesive applications. It also modifies melt flow characteristics with improved resistance to yellowing in powder coatings.

## **Benzoflex™ 1046 plasticizer**

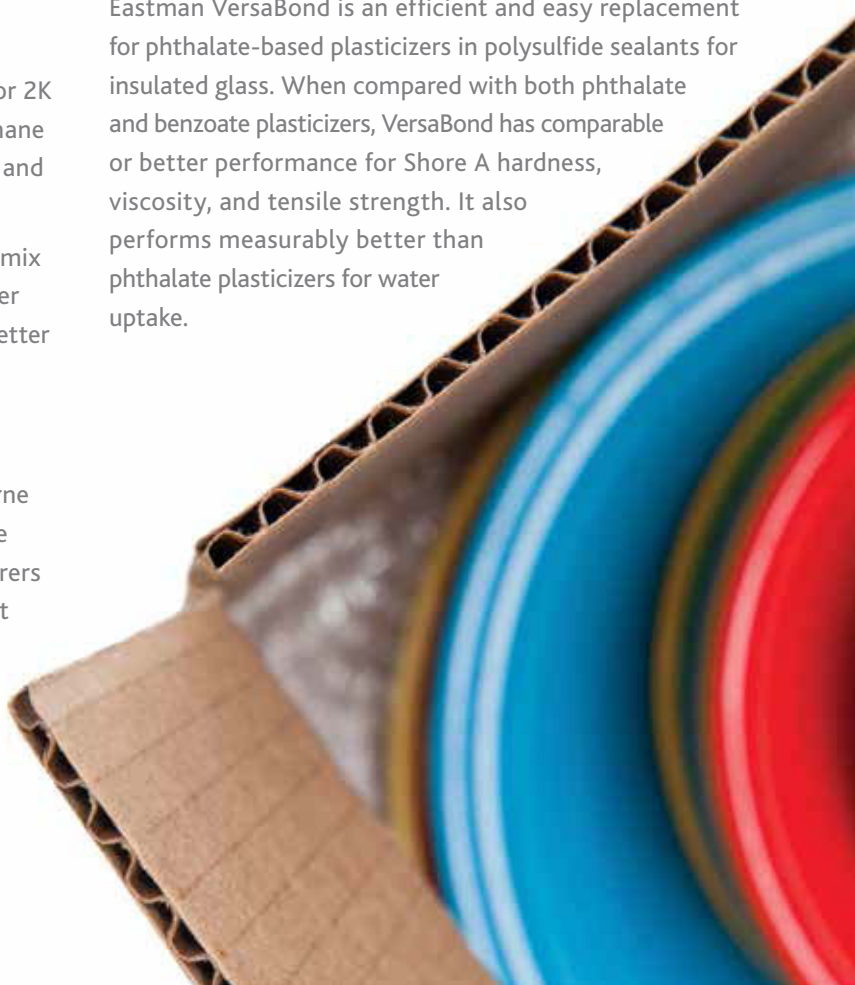
In PVC plastisol sealants, Benzoflex 1046 offers excellent rheological properties and high resin solvation at elevated temperatures. It imparts excellent stain resistance and has a high tolerance for fillers. Its low hydroxyl number, moisture content, acid value, and color make it an excellent choice for many PVC plastisol sealant applications.

## **Benzoflex™ PS-507 plasticizer**

Designed for use in 1K and 2K polysulfide sealants, Benzoflex PS-507 is an efficient plasticizer that decreases viscosity and improves flow, leveling, and workability. It is a cost-efficient solution in the A side of a 2K sealant.

## **Eastman VersaBond™ plasticizer**

Eastman VersaBond is an efficient and easy replacement for phthalate-based plasticizers in polysulfide sealants for insulated glass. When compared with both phthalate and benzoate plasticizers, VersaBond has comparable or better performance for Shore A hardness, viscosity, and tensile strength. It also performs measurably better than phthalate plasticizers for water uptake.



## Eastman Effusion™ plasticizer

Eastman Effusion is a high-solvating non-phthalate plasticizer for waterborne adhesives that lowers a system's glass transition temperature ( $T_g$ ) and provides comparable viscosity response to traditional plasticizers. It demonstrates very low water solubility and is readily biodegradable.

## Eastman 168™ non-phthalate plasticizer

Eastman 168 is an excellent non-phthalate plasticizer for acrylic latex sealants and adhesives with performance comparable to the general-purpose *ortho*-phthalate plasticizers. It offers good performance properties, low-temperature flexibility, and excellent nonmigration properties. When compared to *ortho*-phthalate plasticizers in acrylic sealants such as diisononyl phthalate (DINP), Eastman 168 is an ideal choice for a non-phthalate replacement.

Eastman 168 is used at low addition levels in some specialty pressure sensitive adhesives where listing in the Plastics Regulations is required.

## Eastman TXIB™ formulation additive

In water-based adhesives based on vinyl acetate-ethylene (VAE), Eastman TXIB often yields a slightly higher viscosity response than many common plasticizers and yields lower  $T_g$  for better low-temperature properties.

## Eastman Triacetin plasticizer

Eastman Triacetin demonstrates excellent  $T_g$  suppression in vinyl acetate homo- and copolymer emulsions, is readily biodegradable, offers a reliable supply with no adverse labeling required, and shows good compatibility with natural and synthetic rubber. Eastman Triacetin is made to the appropriate current good manufacturing practices (cGMP) for use as a plasticizer in vinyl acetate based food-packaging adhesives.

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To find out more about the Eastman advantage and our complete line of non-phthalate plasticizer solutions, visit us at [www.EastmanPlasticizers.com](http://www.EastmanPlasticizers.com).

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# EASTMAN

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