

# Enabling every day

*Eastman non-phthalate  
plasticizers*



# The world's most trusted plasticizers

*Making everyday products extraordinary*

Every day, your life is made a little better by plasticizers. After all, you'll find them in everyday places—at home, in the car, and at the office—and in everyday products, from the floor you walk on to the chair you sit in to the toys your children enjoy. Plasticizers make thousands of products easier to handle, more flexible, and ultimately better able to perform.

We have a long history of producing innovative non-phthalate plasticizers for worldwide markets, including:

- Adhesives
- Automotive
- Decals, graphics, graphic arts, and inks
- Fabric and furniture upholstery
- Flexible PVC
- Flooring and interior surfaces
- Food contact
- Gaskets, hoses, and tubing
- Medical
- Peroxides
- Polyurethane
- PVC plastisols
- Sealants and caulks
- Toys and childcare products
- Wire and cable

Your business, however, needs more than reliable plasticizers—it needs a reliable plasticizer manufacturer. As the world's No. 1 producer of non-phthalate plasticizers, Eastman has proven to be a dependable and trusted plasticizer supplier for more than 50 years. With manufacturing capabilities around the globe, including sites in North America, Europe, Latin America, and Asia, we are positioned to deliver the plasticizers you need to thrive in a rapidly changing industry and a dynamic regulatory environment. Our production facilities deliver consistent products to fit your needs and ensure a secure supply.

Our versatile portfolio represents the broadest range of non-phthalate plasticizers in the industry. In fact, we are the world's leading producer of non-phthalate general-purpose and specialty plasticizers.

**What can Eastman plasticizers enable for you today?**



# Drop in to greater sustainability

*Right now*

Today, sustainability is on everybody's radar with consumers and big brands driving the need for change. Yet product performance remains paramount, and the right plasticizer can make all the difference. At Eastman, we're revolutionizing sustainability by replacing traditional fossil feedstocks with renewable content—contributing to a cleaner environment. Eastman Renew plasticizers can be used as drop-in replacements without compromising performance.

## **Eastman 168™ Renew 20 non-phthalate**

**plasticizer** contains 20% certified recycled content\* and offers the same heritage of proven performance as its legacy product. See how it can improve your formulations for flexible PVC, coated fabric, flooring, and more.

## **Eastman DOA Renew 20 plasticizer**

contains 20% certified recycled content\* and offers U.S. FDA and European FSA clearances for food packaging and clear films.

**Eastman Triacetin Renew 59** contains 59% certified recycled content\* and 41% glycerin derived from biobased resources. It offers 100% sustainable content and is cleared for food contact applications by the U.S. FDA and European FSA.

\*Certified recycled content is achieved using mass balance allocation.

Your **same formula—**  
with a world of **difference**

Contact your Eastman  
plasticizers representative or visit

[eastman.com/plasticizers](http://eastman.com/plasticizers)



to find out how you can be part  
of the change today.



## **Sustainability without compromise**

Drop-in solutions identical in chemical makeup, performance, and regulatory certifications



## **Sustainability without greenwashing**

ISCC-certified recycled content



## **Sustainability without waiting**

Powered by Eastman's molecular recycling technologies and available right now





# Adhesives

## *Stick with the safe choice*

Plasticizers improve the performance of adhesives by creating much-needed elasticity and optimizing viscosity, low-temperature efficiency, set-time functionality, impact resistance, and even tack.

Eastman offers a diverse portfolio of non-phthalate, high-solvating plasticizers to help adhesive manufacturers meet performance and regulatory challenges. Our benzoate-based Benzoflex™ plasticizers have become the standard of excellence for the industry by providing the optimal balance of performance and value for water-based adhesives.

In most cases, our non-phthalate alternatives can be substituted for phthalates without requiring significant changes to your manufacturing operations.

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**Benzoflex 2088**

**Benzoflex 352**

**Benzoflex 50**

**Benzoflex 9-88 SG**

**Benzoflex 9-88**

**Benzoflex LA-705**

**Eastman Triacetin**

**Eastman Triacetin Renew 59**

**Eastman TXIB**

# Automotive

## *Driving performance*

Many of Eastman's plasticizers are geared to meet the demanding needs of the automotive industry. Eastman Effusion™ plasticizer, for example, is ideal for automotive underbody coatings and body seam sealers, as it is highly efficient and effective at lowering fusion temperatures. If you're looking to replace DINP in your formulation, give Eastman VersaMax™ Plus plasticizer a try. You will find the properties provided by VersaMax Plus can expand your formulation window as it provides lower gel and fusion temperatures, higher efficiency, and lower viscosity when compared to DINP.

Plasticizers play an integral role in the overall automotive industry. They help enable some of the driving forces in this industry, such as lightweighting and energy reduction. Bumper to bumper, inside and out, Eastman has the plasticizers that manufacturers need today and down the road.

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**Admex 770**

**Benzoflex 9-88**

**Eastman 168**

**Eastman 168 Renew 20**

**Eastman Effusion**

**Eastman TEG-EH**

**Eastman TXIB**

**Eastman VersaMax Plus**





## Decals, graphics, graphic arts, and inks

*Designed to perform*

Eastman plasticizers help increase flowability and reduce film formation temperature in inks and graphic arts. The nonmigrating properties of our non-phthalate solutions make Eastman plasticizers an excellent choice for inks in food packaging applications, decorative decals, screen printing on apparel, and automotive instrument panels. With excellent extraction resistance and weatherability, our plasticizers are also well suited for exterior graphics.

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**Admex 770**

**Benzoflex 9-88 SG**

**Eastman 168**

**Eastman 168 Renew 20**

**Eastman Effusion**

**Eastman Triacetin**

**Eastman Triacetin Renew 59**

**Eastman VersaMax Plus**

# Fabric and furniture upholstery

## *Furnishing flexibility and resilience*

Eastman's specialty plasticizers offer performance properties from low-viscosity and low-temperature flexibility to superior permanence. Plasticizers are used in fabric to make furniture and automotive upholstery more comfortable, resilient, and resistant to becoming brittle over time.



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Eastman 168

Eastman 168 Renew 20

Eastman VersaMax Plus



## Flexible PVC

### *Setting the new standard*

Eastman 168™ non-phthalate plasticizer has been safely used in PVC for generations. With proven performance as an alternative to DOP/DEHP and DINP, Eastman 168 and Eastman VersaMax™ Plus plasticizer can be used for a wide variety of flexible PVC applications. In many cases, our non-phthalate solutions can be a drop-in replacement for traditional phthalates in your manufacturing process.

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**Benzoflex 2088**

**Benzoflex 50**

**Eastman 168**

**Eastman 168 SG**

**Eastman 168 Renew 20**

**Eastman TXIB**

**Eastman VersaMax Plus**



# Flooring and interior surfaces

## *A step above the rest*

Whether you produce PVC-backed carpet, resilient flooring, luxury vinyl tile, or vinyl composite tile, Eastman has the plasticizer that meets your needs. In addition to an array of general-purpose solutions, we offer an extensive portfolio of specialty non-phthalate plasticizers—including fast fusers, viscosity reducers, and low-VOC options.

Eastman plasticizers can also help protect your bottom line. Eastman Effusion plasticizer, for example, is a high-solvating, fast-fusing solution that offers improved efficiency and lower fusion temperatures—creating increased line speeds and wider processing windows that can reduce your energy costs.

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**Benzoflex 2088**

**Benzoflex 9-88**

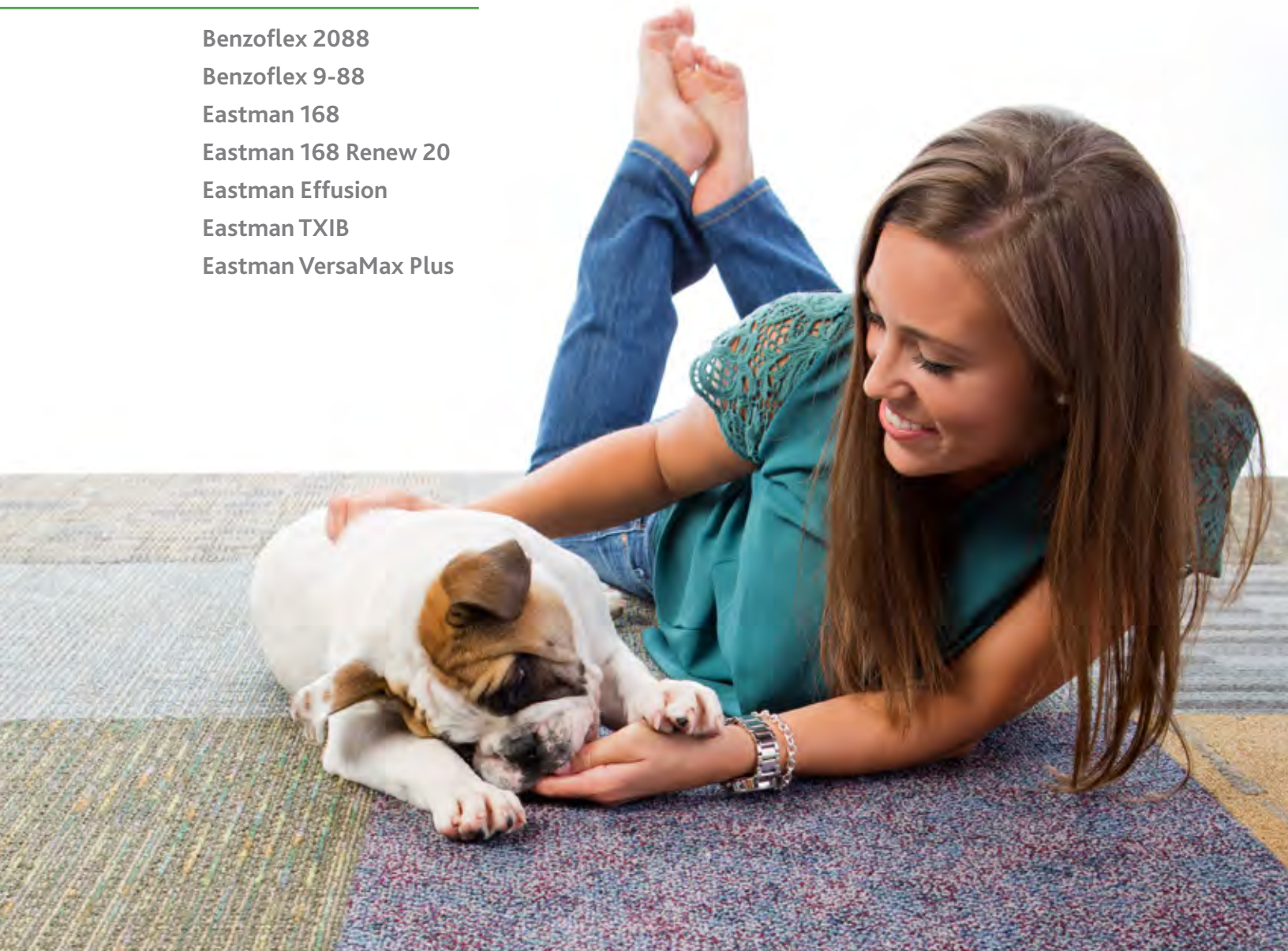
**Eastman 168**

**Eastman 168 Renew 20**

**Eastman Effusion**

**Eastman TXIB**

**Eastman VersaMax Plus**



# Food contact

## *Serving up safe choices*

Perhaps no market is more challenged by emerging legislative demands than the materials used in food contact applications. Manufacturers looking for safe alternatives are increasingly turning to Eastman for answers. With clean toxicological and regulatory profiles, including FDA and EFSA clearances, our non-phthalate solutions are especially suited for many food contact applications, such as food wrap film, PVC gloves, hoses and tubing, conveyor belting, and metal cap and closure liners. And in most cases, a solution such as Eastman VersaMax Plus plasticizer and Eastman 168 SG non-phthalate plasticizer can be a near drop-in replacement for DOP and DINP.

Eastman 168

Eastman 168 SG

Eastman 168 Renew 20

Eastman DOA

Eastman DOA kosher

Eastman DOA Renew 20

Eastman Effusion

Eastman Triacetin

Eastman Triacetin (food grade)

Eastman Triacetin (kosher, food grade)

Eastman Triacetin Renew 59

Eastman VersaMax Plus





## **Gaskets, hoses, and tubing**

### *Innovation in the pipeline*

Effective plasticizers are not only essential for keeping hoses, gaskets, and tubing pliable; they're also important in the extrusion manufacturing process. Eastman has non-phthalate solutions with excellent low-temperature flexibility, resistance to extraction by soapy water, and excellent nonmigration properties. And, as always, our worldwide manufacturing and distribution network helps keep your products flowing.

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**Eastman 168**

**Eastman 168 Renew 20**



## Medical

### *Vital flexibility*

Eastman has a long history of producing innovative plasticizers for medical supplies. Today, our products improve the flexibility, durability, longevity, and utility of medical packaging, devices, and materials worldwide. You'll find our plasticizers throughout hospital corridors, in pharmaceutical labs, and in doctors' offices—from pliable blood bags and tubing to safer floor mats, from handheld devices to coated fabrics.

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#### Eastman 168 SG

#### *A sensitive-grade solution*

A non-DEHP solution designed specifically for the extensive testing and qualifications within the medical market, Eastman 168™ SG plasticizer is held to higher purity standards—with more comprehensive testing and documentation. We subject the plasticizer to the same analysis manufacturers are required to do, including:

- United States Pharmacopeial Convention (USP) Class VI certification
- European Union directives
- ISO 10993 standards
- Hemocompatibility testing according to ISO 10993-4

# Peroxides

## *Reacting to demands for more efficiency*

Usually found in applications using unsaturated polyesters, plasticizers work as solvents or carriers that deliver peroxides to the end-use product. Many industrial formulations use MEKP (methyl ethyl ketone peroxide) to initiate cross-linking reactions for applications such as gel coats for boats. Often, MEKP is diluted with a suitable diluent or carrier. Eastman TXIB™ formulation additive is frequently chosen as an effective diluent for MEKP because of its value as a non-phthalate, low-viscosity diluent with a low freezing point that contributes to easier handling.

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Eastman TXIB



# Polyurethane

## *Flexibility and strength for a versatile market*

In today's markets, polyurethane excels in a growing number of products. And Eastman plasticizers are making polyurethane more versatile than ever before.

Our plasticizers help regulate the rheological, thermal, and mechanical properties in polyurethane, making it more adaptable, more pliable, and more extrudable in a variety of applications. And their lower viscosity allows easier processing and higher filler loading, which in turn enable a cost savings over the base polymer alone.

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**Benzoflex 9-88**

**Benzoflex 9-88 SG**

**Benzoflex TPU-405**

**Eastman TXIB**

**Eastman TEG-EH**



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### *Polyurethane applications*

- Cast polyurethane
- Polyurethane adhesives
- Polyurethane sealants

# PVC plastisols

## *Highly efficient solutions*

When formulating PVC plastisols, your next tool should be Eastman's plasticizers. With a long history of proven success, we have the broadest line of plasticizers in the industry. The excellent solvating characteristics of these plasticizers allow fast processing of vinyl compositions. In both dry-compounded and plastisol-based PVC applications, they serve as fast fusers, delivering lower processing temperatures and lower volatility.

As an alternative to benzoate plasticizers, Eastman Effusion™ plasticizer provides lower plastisol viscosity and excellent low-temperature flexibility in PVC formulations.

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**Benzoflex 2088**

**Benzoflex 50**

**Eastman Effusion**

**Eastman 168**

**Eastman 168 Renew 20**

**Eastman TXIB**

**Eastman VersaMax Plus**

**Eastman TEG-EH**



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### *PVC plastisol applications*

- Coatings
- Textile printing inks
- Plastisol sealants
- Plastisol adhesives
- Plastisol molding compounds
- Plastisol foams

# Sealants and caulk

## *Performance that bonds*

Sealants and caulks need plasticizers to perform. However, regulatory pressures on phthalates and product formulations have forced sealant and caulk formulators to find alternatives to traditional plasticizer options. Eastman has the widest range of benzoate plasticizers in the industry, providing an optimal balance of performance and value. Our plasticizers promote better low-temperature properties, allow for higher filler loads, optimize adhesion to various substrates, and deliver flexibility and superior performance for sealants and caulks.

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### *Sealants and caulks applications*

- Latex
- Polyurethane
- PVC plastisol
- Polysulfide

**Benzoflex 2088**

**Benzoflex 50**

**Benzoflex 9-88 SG**

**Benzoflex 9-88**

**Benzoflex PS-507**

**Eastman TXIB**

**Eastman VersaBond**





# Toys and child care

## *A growing market*

Eastman was among the first companies to develop alternative plasticizers for making PVC flexible. For nearly 50 years, Eastman 168 non-phthalate plasticizer has offered a safe alternative to phthalates and is commonly found in children's toys and other articles designed for children. Eastman VersaMax Plus plasticizer is an optimal solution when plastisols are predominant, and it is a near drop-in replacement for DINP. With a clean toxicological profile, manufacturers can play in expanded markets, knowing that their choice in plasticizer is suitable for sensitive applications.

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**Eastman 168**

**Eastman 168 SG**

**Eastman 168 Renew 20**

**Eastman VersaMax Plus**



# Wire and cable

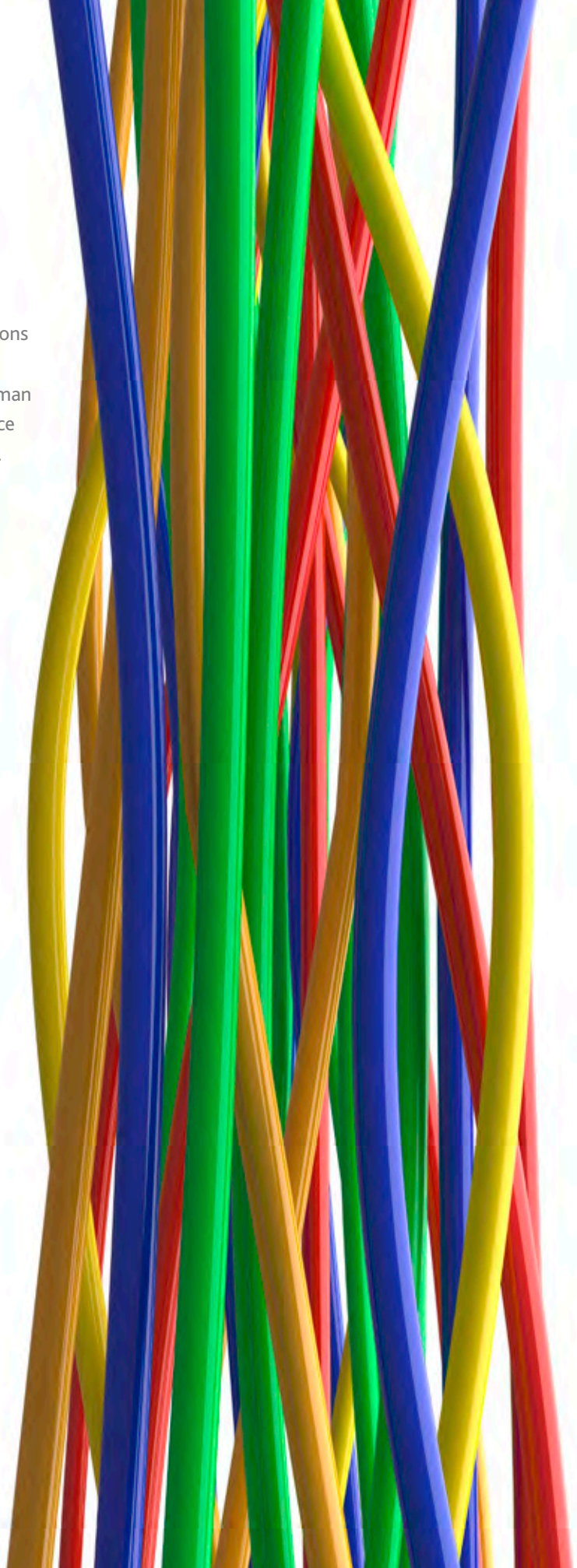
## *Solutions for a connected market*

Flexible PVC is widely used in protective materials or insulation of wires and cables used in electronics, appliances, and communications systems. Without plasticizers, these critical products would become brittle and cracked, resulting in safety hazards. With innovative Eastman general-purpose and specialty plasticizers, manufacturers can produce wire and cable sheathing with the necessary flexibility and longevity.

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**Eastman 168**

**Eastman 168 Renew 20**



# Eastman non-phthalate plasticizers A to Z

## *Proven performance*

Our product breadth and ability to develop novel molecules and new products can give you a long-lasting competitive advantage. Eastman's readily available plasticizers provide good fusion profiles, excellent low-temperature flexibility, and excellent heat stability for both general-purpose and specialty applications.

Eastman's top-notch technical and field-based support teams offer analytical testing, formulation know-how, and reformulation expertise to help you stay ahead of trends and create new competitive advantages. In addition, we have the resources, resolve, and financial and technical strength to continue to lead the industry. . . and enable your success every day.



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Admex™ 770 plasticizer

Benzoflex™ 2088 plasticizer

Benzoflex 352 plasticizer

Benzoflex 50 plasticizer

Benzoflex 9-88 plasticizer

Benzoflex 9-88 SG plasticizer

Benzoflex LA-705 plasticizer

Benzoflex PS-507 plasticizer

Benzoflex TPU-405 plasticizer

Eastman 168™ non-phthalate plasticizer

Eastman 168 SG non-phthalate plasticizer

Eastman 168 Renew 20 non-phthalate plasticizer

Eastman DOA plasticizer

Eastman DOA plasticizer, kosher

Eastman DOA Renew 20 plasticizer

Eastman Effusion™ plasticizer

Eastman TEG-EH plasticizer

Eastman Triacetin

Eastman Triacetin, food grade

Eastman Triacetin, kosher, food grade

Eastman Triacetin Renew 59

Eastman TXIB™ formulation additive

Eastman VersaBond™ plasticizer

Eastman VersaMax™ Plus plasticizer

To find out more about the Eastman advantage, visit [EastmanPlasticizers.com](http://EastmanPlasticizers.com).



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