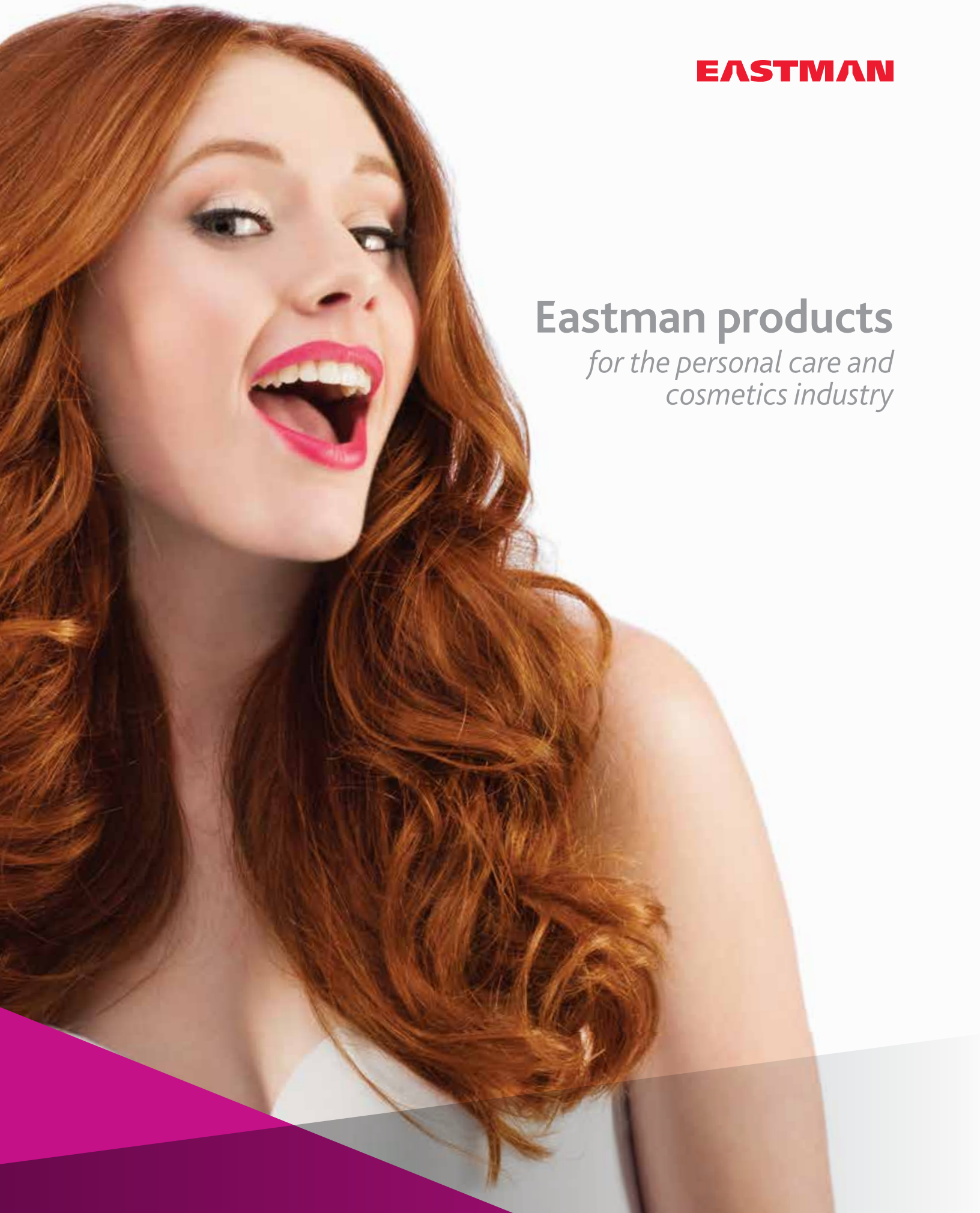


EASTMAN

Eastman products

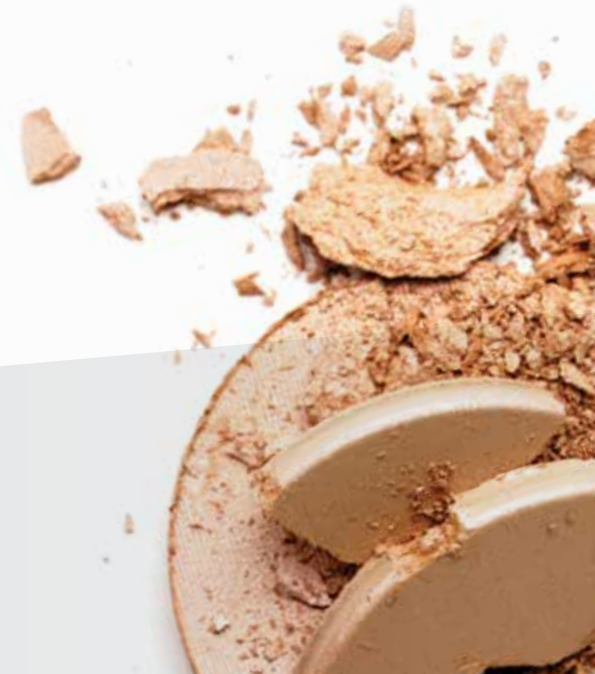
for the personal care and cosmetics industry

Beauty
on the molecular level

It's all about the ingredients.

Eastman has a long history of providing specialty ingredients to the personal care and cosmetics industry. We have a wide variety of products available—from adhesion promoters to film formers to emollient esters—to help boost your product performance.

For product development, personal care and cosmetics formulators need innovative solutions to create and successfully introduce new products with tangible consumer benefits. Eastman is committed to establishing original technologies and fresh ideas for those formulators. Our global team of personal care and cosmetics experts is continually seeking new ways to help formulators improve product performance and the product development cycle.



Polymers and functional film formers

Eastman's advancements in film formation provide improved smudge and transfer resistance in color cosmetics, water resistance in sunscreens, and tunable firmness in hairstyling products. Eastman experts leverage their long-standing know-how across technologies and industries to develop fresh ideas. They are always looking for new ways to enhance skin care and hairstyling products and improve adhesion and endurance in color cosmetics.

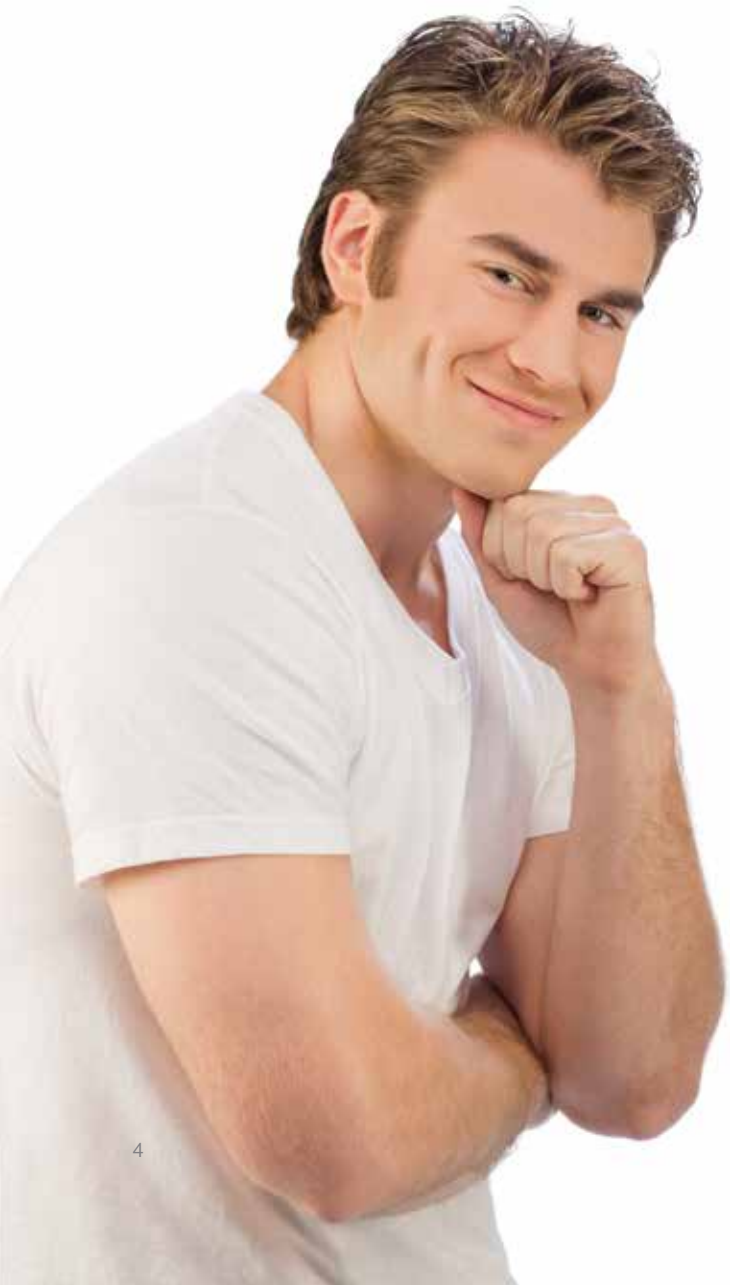
Delivery systems and innovative ingredients

Our global personal care experts focus on innovative ingredients and delivery systems. With Eastman's understanding of controlled and sustained-release technologies which have been applied in other industries, the promise of an improved delivery of ingredients in the cosmetics industry becomes reachable. New treatments for skin care and hairstyling, along with improved fragrance performance and endurance, are now possible and will positively impact the consumers' perception of the product's benefits. Eastman is dedicated to offering formulators innovative ingredients to assure they take the lead in bringing these technologies to the personal care and cosmetics market.

Personal care and cosmetics solutions

Sun care

Eastman supplies the sun care segment of the personal care industry with Eastman AQ™ 38S polymer, a water-dispersible film former that has the capability to greatly improve water resistance in a variety of sunscreen lotions and sprays for the care and protection of the skin. It is found to be valuable in increasing the duration of UV protection in sunscreen formulas. For example, AQ 38S offers superior water resistance, providing retention of UV absorbers on the skin even during water exposure. It is characterized by ultrafine dispersions, is an excellent film former, is perfect for use in water-resistant sunscreens, requires no neutralization, goes into the water phase, and aids the emulsification of oil-phase UV absorbers and other organic emollients usually present in sunscreen emulsions.



Hairstyling

Eastman AQ™ polymers are widely used in the hairstyling segment of the personal care industry. These versatile polymers serve as hair fixatives in applications such as hair sprays, styling creams, and gels. Eastman AQ polymers provide low tack, excellent hold and curl retention, and enhanced gloss to a variety of hairstyling products. Dry time, a major factor in hair spray performance, is also greatly reduced with the use of Eastman AQ polymers.

Eastman ingredients for shampoos and conditioners include Eastman Sustane™ SAIB (sucrose acetate isobutyrate) to improve manageability and add body to the hair.

Color cosmetics

In color cosmetics where water, smudge, and transfer resistance are critical, Eastman AQ polymers are invaluable ingredients. These multipurpose film formers provide improved performance in all the resistance properties essential in applications such as foundation, eyeliner, and mascara.

Both Sustane SAIB and SAIB-90 are excellent choices for lipstick formulations because of their superior pigment-dispersing capability and compatibility with many of the oils used in lipstick. Additionally, they improve transfer resistance, a critical characteristic in lipstick, lip gloss, and lip liner formulations.

Foral™ 85-E CG and Foral 105-E CG hydrogenated rosinates, Foralyn™ 5020-F CG hydrogenated rosin ester, and Regalite™ R1100 CG hydrocarbon resin are also excellent options for lipstick and other lip care formulations. In addition to contributing to gloss and adhesion, they offer a wide range of solubility and compatibility with other cosmetics ingredients.

Eastman GEM™ 2-ethylhexyl palmitate is a high quality ester for use in color cosmetics and skin care applications. Eastman GEM™ retinyl linoleate is a high-purity antiaging ingredient that increases ease of formulation and offers excellent performance. Both offer the added benefit of sustainable manufacturing.

Other color cosmetics ingredients include cellulose esters, coalescing aids and plasticizers, and solvents to improve gloss, hardness, and dry times in nail polishes and lacquers.

Application guide

Product application	Skin care	Sun care	Hair care	Hair styling	Color cosmetics	Nail enamel/ remover	Fragrances	AP/ DEO	Depilatories
Adhesion promoters									
Eastman Sustane™ SAIB (sucrose acetate isobutyrate), food grade, kosher					✔				
Eastman Sustane™ SAIB MCT (sucrose acetate isobutyrate) food grade, kosher					✔	✔			
Eastman SAIB-90					✔	✔			
Eastman SAIB-90EA					✔	✔			
Eastman SAIB-100					✔	✔			
Eastman TXIB™ formulation additive						✔			
Foral™ 85-E CG hydrogenated rosinate					✔				
Foral 105-E CG hydrogenated rosinate					✔				
Foralyn™ 5020-F CG hydrogenated rosin ester					✔		✔		
Regalite™ R1100 CG hydrocarbon resin					✔				
Regalite R1090 hydrocarbon resin									✔
Eastman ester gum 8D resin									✔
Antioxidants									
Eastman Tenox™ BHT antioxidant, food grade	✔	✔	✔		✔		✔	✔	
Eastman Tenox™ TBHQ antioxidant, food grade, kosher	✔	✔	✔		✔		✔	✔	
Film formers—cellulose esters									
Eastman cellulose acetate butyrate (CAB)	✔					✔			
Eastman cellulose acetate propionate (CAP)	✔					✔			
Film formers—water-dispersible polymers									
Eastman AQ™ 38S polymer	✔	✔							
Eastman AQ 48 ultra polymer				✔					
Eastman AQ 55S polymer				✔	✔				
Fragrance fixatives									
Eastman Sustane™ SAIB			✔		✔	✔	✔		
Plasticizers									
Eastman SAIB-90						✔			
Eastman SAIB-90EA						✔			
Functional skin care ingredients									
Eastman hydroquinone, USP grade	✔								
Eastman GEM™ retinyl linoleate	✔				✔				
Solvents									
Eastman EastaPure *n*-butyl acetate						✔			
Eastman ethyl acetate, food grade, kosher						✔			
Eastman methyl acetate, high purity				✔		✔	✔		
Emollient esters									
Eastman GEM™ 2-ethylhexyl palmitate	✔	✔			✔			✔	
Preservatives									
Eastman benzoic acid, TG, flake	✔	✔	✔		✔			✔	
Probenz™ SG sodium benzoate, kosher	✔	✔	✔		✔			✔	

Adhesion promoters

Eastman Sustane™ SAIB and Eastman SAIB are sucrose-based adhesion promoters used to improve adhesion of products to fingernails, skin, and hair. SAIB is available in a variety of low-viscosity blends for personal care and cosmetics applications.

The inclusion of 10% to 20% SAIB (based on total solids) in solvent-based nail lacquers can result in improved film-former flexibility and adhesion.

In transfer-resistant lipstick, SAIB can function as a plasticizer to soften the primary film former and improve its adhesion and flexibility. In traditional lipstick, it can improve wear properties by reducing creeping, bleeding, and feathering.

In epilatories, SAIB is used as a tackifier. Its low odor is often preferred over other typically used tackifiers.

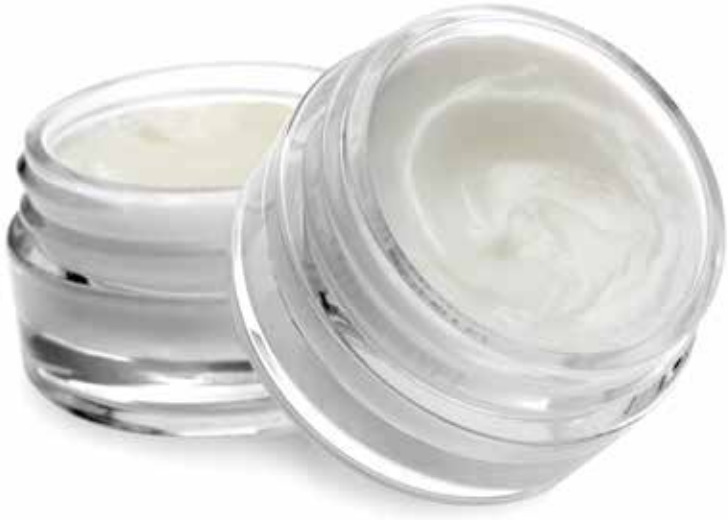
In shampoo and conditioning products, SAIB deposits on the hair to provide body and manageability.

Foral™ 85-E CG and Foral 105-E CG hydrogenated rosinates and Foralyn™ 5020-F CG hydrogenated rosin ester are based on gum rosin—a natural, renewable source. Regalite™ R1100 CG hydrocarbon resin is a fully hydrogenated resin derived from petroleum. Color cosmetics and depilatory wax applications benefit from their inherent adhesive properties. In addition, these resins contribute gloss, an important attribute for lipstick and other lip care products. Foralyn 5020-F CG is also used as a plasticizer and fragrance fixative.

Regalite R1090 and ester gum 8D resin are used in deodorants.

Eastman product	INCI name
Eastman Sustane SAIB, food grade, kosher	Sucrose acetate isobutyrate
Eastman SAIB-90	Sucrose acetate isobutyrate, alcohol, methyl alcohol, MIBK, ethyl acetate, heptane
Eastman SAIB-90EA	Sucrose acetate isobutyrate, ethyl acetate
Eastman SAIB-100	Sucrose acetate isobutyrate
Foral 85-E CG hydrogenated rosinate	Glyceryl hydrogenated rosinate
Foral 105-E CG hydrogenated rosinate	Pentaerythrityl hydrogenated rosinate
Foralyn 5020-F CF hydrogenated rosin ester	Methyl hydrogenated rosinate
Regalite R1100 CG hydrocarbon resin	Hydrogenated styrene/methyl styrene/indene copolymer
Regalite R1090 hydrocarbon resin	Hydrogenated styrene/methyl styrene/indene copolymer
Eastman ester gum 8D resin	Glyceryl rosinate

Antioxidants



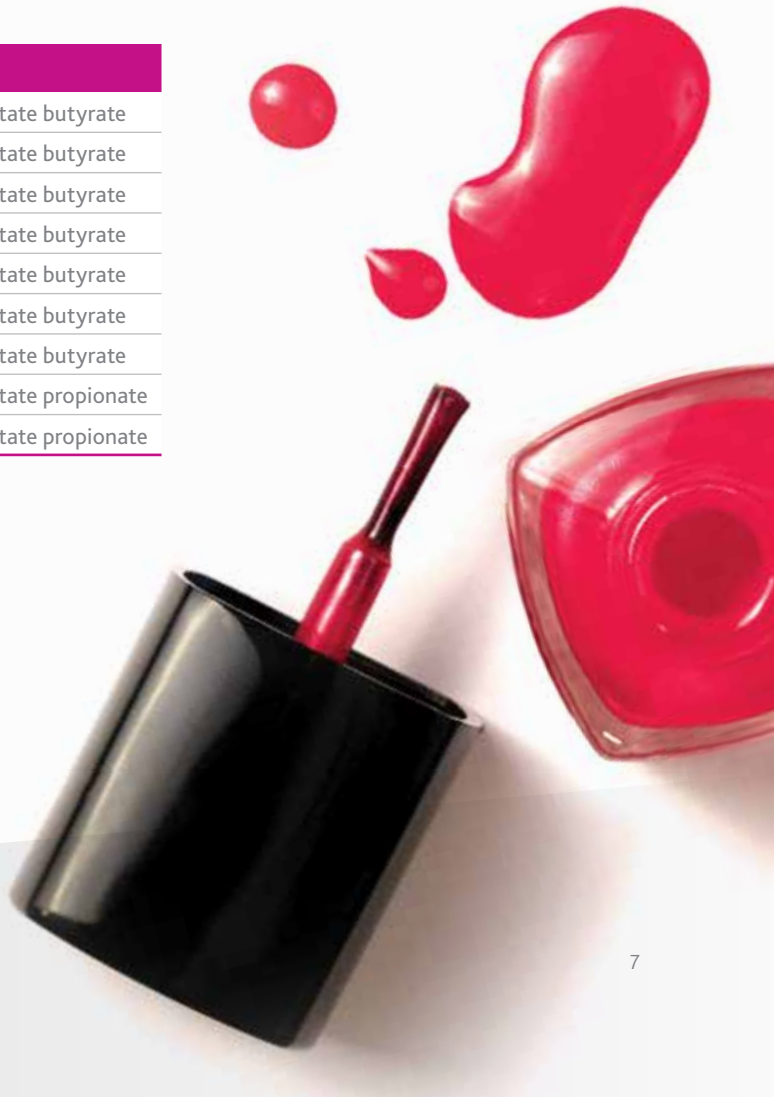
Eastman Tenox™ BHT (butylated hydroxytoluene) antioxidant is available for multiple applications within personal care and cosmetics. Antioxidants are used to stabilize many oils, particularly unsaturated oils. They act as free radical scavengers to inhibit the rancidity of creams and lotions and the degradation of fragrances. Antioxidants are used in fragrances, skin care products, tanning lotions, hairstyling products, color cosmetics, and antiperspirants and deodorants. Tenox BHT antioxidant is food grade and kosher.

Eastman product	INCI name
Solid antioxidants	
Eastman Tenox BHT antioxidant	BHT

Film formers—cellulose esters

Cellulose esters are polymers used by the nail care industry as film formers. Films formed from cellulose esters have fast solvent release. Compared to nitrocellulose, cellulose esters are nonyellowing and have excellent clarity and stability. They can be safely used in nail care products and are easily pigmented. Cellulose acetate butyrate (CAB) and cellulose acetate propionate (CAP) resins are available in a range of viscosities and solubilities to meet the formulator's needs.

Eastman product	INCI name
Eastman cellulose acetate butyrate (CAB-381-0.1)	Cellulose acetate butyrate
Eastman cellulose acetate butyrate (CAB-381-0.5)	Cellulose acetate butyrate
Eastman cellulose acetate butyrate (CAB-381-2)	Cellulose acetate butyrate
Eastman cellulose acetate butyrate (CAB-381-20)	Cellulose acetate butyrate
Eastman cellulose acetate butyrate (CAB-551-0.01)	Cellulose acetate butyrate
Eastman cellulose acetate butyrate (CAB-551-0.1)	Cellulose acetate butyrate
Eastman cellulose acetate butyrate (CAB-551-0.2)	Cellulose acetate butyrate
Eastman cellulose acetate propionate (CAP-482-0.5)	Cellulose acetate propionate
Eastman cellulose acetate propionate (CAP-504-0.2)	Cellulose acetate propionate



Film formers—water-dispersible polymers

Eastman AQ™ polymers are highly water-dispersible polymers used in hairstyling, sun care, and color cosmetics for their film-forming properties. They are formulated in a variety of hairstyling products including hair gels, sprays, and waxes. AQ polymers are also used in sunscreen lotions, creams, and milk sprays. In color cosmetics, they are used in mascara, eyeliner, and makeup.

Eastman AQ polymers are sulfopolyesters that disperse directly in water without the assistance of emulsifiers, organic cosolvents, inorganic bases, amines, or other additives. AQ polymers aid the dispersion of hydrophobic ingredients in water-based formulations and form clear films at room temperature from aqueous dispersions. AQ polymers differ in glass transition temperature (T_g), alcohol tolerance, and degree of water resistance.

Eastman AQ 38S polymer provides excellent film formation and water resistance in sunscreen products. As indicated by the number in the product name, AQ 38S polymer has a T_g of about 38°C. Because of its low T_g, AQ 38S forms flexible films on the skin. It imparts a smooth feel to creams, lotions, and sprays and adheres to the skin.

Eastman AQ 48 ultra polymer was designed specifically for use as a hair fixative in 55% VOC hair spray. Therefore, it is more compatible with higher levels of alcohol than Eastman AQ 38S or 55S and is easy to wash out with shampooing. AQ 48 ultra polymer provides excellent hold at high humidity in aerosol and pump hair sprays, as well as in clear styling gels.

Eastman AQ 55S polymer has good film integrity when combined with other cosmetics ingredients and is the preferred AQ polymer to improve water and smudge resistance of water-based makeup and mascara. In hairstyling products, AQ 55S provides excellent hold under high-humidity conditions and stiffness that is easily modified with plasticizers and thickeners.

Eastman product	INCI name
Eastman AQ 38S polymer	Polyester-5
Eastman AQ 48 ultra polymer	Polyester-5
Eastman AQ 55S polymer	Polyester-5

Fragrance fixatives

Eastman Sustane™ SAIB can be used as a fragrance fixative to retard evaporation and promote the long-lasting aroma of perfumes. Sustane SAIB is used in the compounding of fragrance concentrates and in the formulation of finished fragrances. Light in color and odorless, Sustane SAIB is stable to heat and UV light.

Eastman product	INCI name
Eastman Sustane SAIB	Sucrose acetate isobutyrate

Plasticizers

Eastman plasticizers are used by the nail care industry to increase the flexibility of films. Consumers expect their nails to look good for five to seven days after a manicure. If films are overplasticized, they will dry too slowly and become dull because of marring. If the plasticizer is too volatile, it will evaporate and the film will become brittle. Eastman supplies SAIB 90 and SAIB 90-EA to the nail care industry. Both are a light colored, stable liquid that is soluble in most alcohols.

Eastman product	INCI name
Eastman SAIB-90	Sucrose acetate isobutyrate, alcohol, methyl alcohol, MIBK, ethyl acetate, heptane
Eastman SAIB-90EA	Sucrose acetate isobutyrate, ethyl acetate

Functional skin care ingredients

From sunscreens to moisturizing creams, Eastman offers a variety of ingredients to improve skin care formulations. Eastman supplies novel ester technology and functional film formers.

Eastman's novel ester technology features high selectivity and mild reaction conditions to tailor functional active ingredients for skin care. By carefully selecting the alcohol and acid components, the ester derivative can show superior performance, increased stability and solubility, and better skin compatibility compared to the starting alcohol or acid. Eastman has developed this technology to manufacture derivatives of retinol, idebenone, resveratrol, DMAE, kojic acid, and azelaic acid.

For many years, hydroquinone has been formulated into creams, lotions, and gels to produce effective skin-lightening products. Eastman hydroquinone, USP grade, meets or exceeds the requirements of the United States Pharmacopeia and is produced under current good manufacturing practices for drugs. Eastman maintains information on our products in a drug master file with the U.S. FDA. Because a high quality hydroquinone is needed to ensure safety, effectiveness, and consistent purity and potency, Eastman supplies only Eastman hydroquinone, USP grade, for skin-lightening products worldwide, subject to applicable laws and regulations.

Eastman AQ™ 38S polymer provides excellent film formation and improved water resistance in sun care products.

Eastman product	INCI name
Eastman AQ 38S polymer	Polyester-5
Eastman hydroquinone, USP grade	Hydroquinone

Preservatives

Preservatives can help your product last longer and protect them from damaging microorganisms. Eastman offers benzoic acid and Probenz™ SG sodium benzoate as preservatives for the personal care and cosmetics industry. Both ingredients can be used in skin care, hairstyling, color cosmetics, and deodorant products.

Eastman product	INCI name
Eastman benzoic acid, TG, flake	Benzoic acid
Probenz SG sodium benzoate, kosher	Sodium benzoate

Solvents

Eastman esters, which are most commonly used in nail care products, include methyl acetate, high purity. Methyl acetate, which evaporates very fast, is exempt from regulation as a VOC under U.S. federal law and can be used to lower the VOCs in hair sprays. It is also used in nonacetone nail polish removers.

Eastman product	INCI name
Eastman methyl acetate, high purity	Methyl acetate
Eastman *n*-butyl acetate	Butyl acetate

Eastman GEM™ technology

Eastman GEM technology is setting a new standard in sustainably manufactured cosmetics ingredients. Eastman's proprietary GEM technology, a process that uses enzymes and closely controlled manufacturing conditions to eliminate high temperatures, strong acids, and unwanted by-products, consumes less energy compared with conventional manufacturing processes.

GEM 2-ethylhexyl palmitate is a high quality colorless liquid emollient ester. GEM retinyl linoleate is a high-purity antiaging ingredient that increases ease of formulation and provides excellent performance. Both materials used for skin care and color cosmetics have the added benefit of sustainable manufacturing, guided by the U.S. EPA's Twelve Principles of Green Chemistry. The beauty is in the process.

Sustainable advantages of Eastman GEM technology:

- Consumes less energy
- Low greenhouse gas emissions
- Minimal waste generated
- No process water consumption
- Adheres to the Twelve Principles of Green Chemistry
- Can utilize natural source materials to produce ingredients

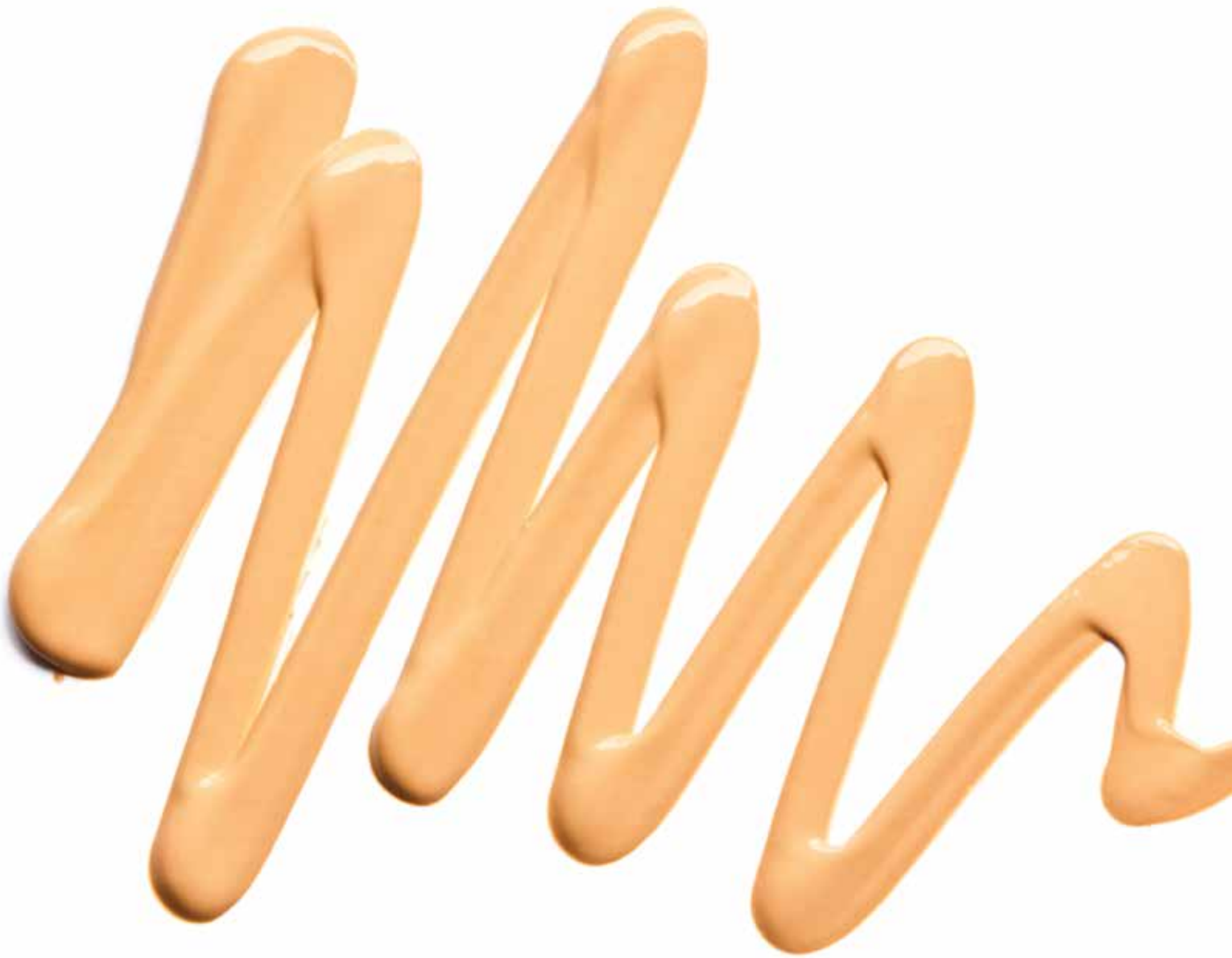
Informational literature

ADD-COS-008	Personal care and cosmetics application guide
ADD-COS-013-1	Hairstyling
ADD-COS-013-2	Sun care
ADD-COS-013-3	Skin care
ADD-COS-013-4	Cosmetics
ADD-4605	Success with water-dispersible sulfopolyesters
CB-31	Eastman products for the fragrance industry
CB-37	Eastman SAIB and Eastman Sustane™ SAIB (sucrose acetate isobutyrate) for cosmetics and personal care
CB-40	Eastman AQ™ 48 ultra polymer formulating tips for clear 55% VOC hair spray
CB-41	Eastman AQ™ polymers for cosmetics and personal care
CB-54	Benefits and compatibility of Eastman Sustane™ SAIB in formulations containing silicones
CB-67	Clear conditioning gel with Eastman AQ™ 48 polymer and UCARE™ polymers JR
CB-68	Eastman resins for cosmetics and personal care
CB-138	Eastman GEM™ 2-ethylhexyl palmitate for skin care and color cosmetics

Starting point formulations

In product development, personal care and cosmetics formulators need innovative solutions to develop and successfully introduce new products. Eastman's personal care and cosmetics ingredients experts are continually developing new ways to help formulators improve their products' performance and deliver consumers the benefits they most desire. Visit our literature center at **www.eastman.com/personalcare** as we continue to add new formulations!

ADD-COS-4531	Lipstick
ADD-COS-4533	Lip gloss light
ADD-COS-4534	Lip gloss robust
ADD-COS-4535	Creamy facial cleanser
CB-128	Water-resistant sunscreen lotion
CB-134	Hairstyling spray gel composition
CB-135	High SPF sunscreen spray
CB-136	Hairstyling cream



To learn more about how Eastman ingredients can best enhance your personal care and cosmetics products, visit us at www.eastman.com/personalcare.

EASTMAN

The results of **insight**™

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