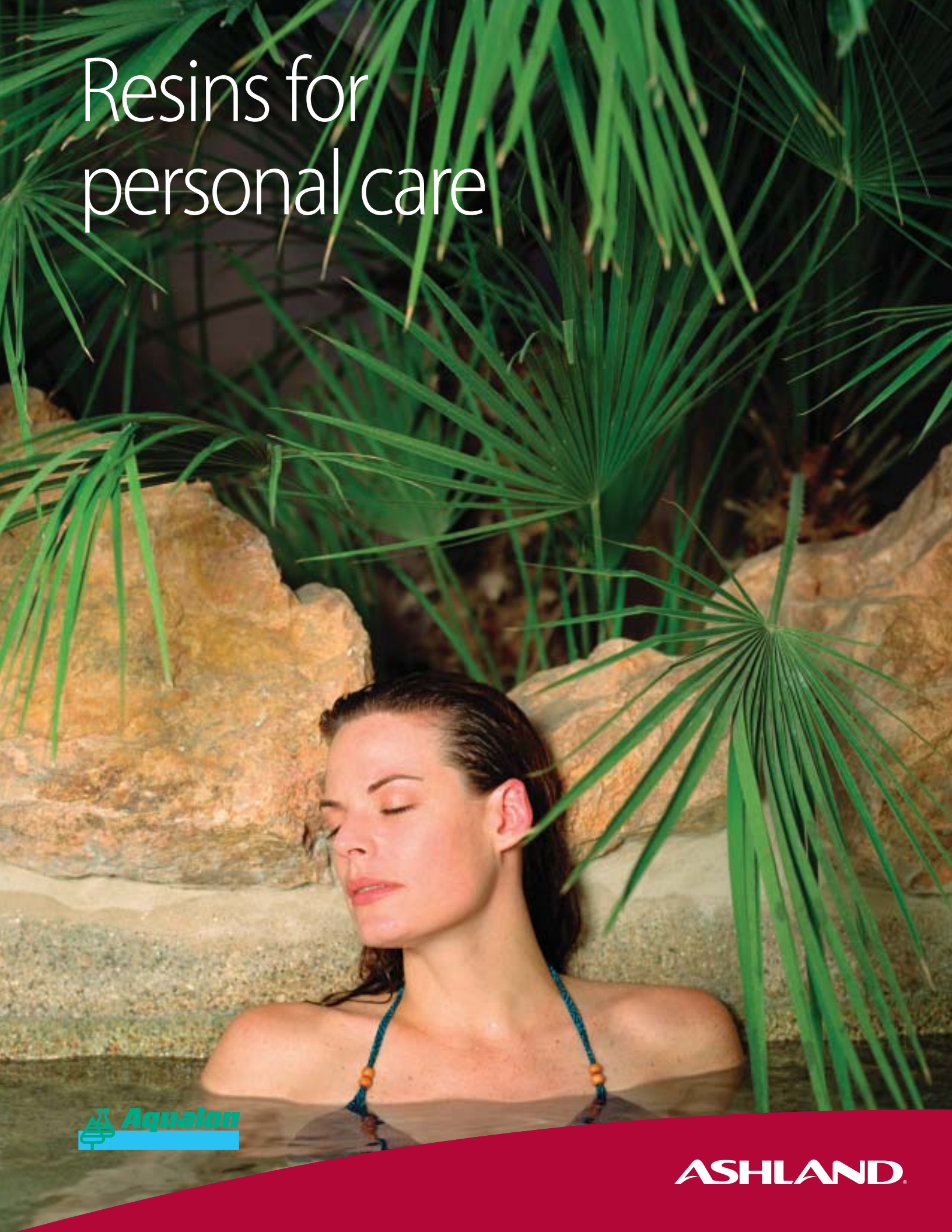
Resins for personal care



Aqualon

ASHLAND

Resins for personal care

Endere® S synthetic resin

INCI name: glyceryl hydrogenated rosinate

Endere® S synthetic resin is a highly hydrogenated allergen-tested resin particularly suited for use in skin contact products. This exceptionally pale, thermoplastic resin has outstanding resistance to oxidation and discoloration caused by heat and aging. Endere® S resin is produced from a naturally derived rosin feedstock.

Typical Applications in Personal Care
- Color Cosmetics, such as lipsticks
- Hair preparations

Benefits
- Allergen Tested
- High degree of hydrogenation
- Very light color and low odor
- Oxidation resistance
- Excellent heat stability and color retention
- Inherent tackiness
- Widely compatible with polymers and solvents
- Broad regulatory approval

Ashland Inc. has conducted *in vitro*, animal, and human patch test studies on this product. Data from these models indicate that this product is not cytotoxic and has very low potential to induce skin sensitization.

General Sales Specifications

Ring and Ball Softening Point, ºC	69 to 77
Color, USDA, maximum	XA
Acid Number, mg KOH/g	3-10

Typical Properties

Color, USDA	XB
Acid Number, mg KOH/g	6
Specific Gravity @25/25 ºC	1.07

Foral ® 85 synthetic resin

INCI Name: glyceryl hydrogenated rosinate

Foral® 85 synthetic resin is the glycerol ester of highly hydrogenated refined wood rosin. It is an exceptionally pale thermoplastic resin that has outstanding resistance to oxidation and to discoloration caused by heat and aging.

Typical Applications in Personal Care
- Color Cosmetics, such as lipsticks
- Hair preparations

Benefits
- Resistant to oxidation
- Pale color
- Excellent color retention
- Inherent tackiness
- Wide solubility and compatibility with polymers and solvents
- Low odor

General Sales Specifications

Softening Point, Hercules drop method, ºC	80 to 88
Color, USDA, maximum	X
Acid Number, mg KOH/g	3-10

Typical Properties

Color, USDA, maximum	XB
Density at 25 ºC, lb/gal (kg/l)	8.9 (1.07)
Acid Number, mg KOH/g	7

To request literature or samples, please contact Ashland Aqualon Functional Ingredients Customer Service at (302) 345-0447 or e-mail us at webrequest@herc.com.

Resins for personal care

Staybelite® Ester 10 synthetic resin

INCI Name: glyceryl hydrogenated rosinate

Staybelite® Ester 10 synthetic resin is the glycerol ester of partially hydrogenated wood rosin. It is a pale, thermoplastic resin with excellent resistance to oxidation and discoloration. In general, it is useful where there is need for pale, non-oxidizing, and color stable resin.

Typical Applications in Personal Care
- Component of depilatory wax compounds

Benefits
- Pale
- Tacky
- Oxidation resistance
- Emulsifiable
- Widely compatible with polymers and solvents
- Broad regulatory approval

General Sales Specifications

Softening Point, Hercules drop method, ºC	80 to 88
Color, USDA rosin scale, maximum	N
Acid Number, maximum	10

Typical Properties

Softening Point, Drop, ºC	84
Color, USDA rosin scale	WW
Acid Number	5 – 6
Hydroxyl content	<1
Density at 25 ºC, lb/gal (kg/l)	8.9 (1.07)

Foral® AX synthetic resin

INCI Name: hydrogenated rosin

Foral® AX resin is a thermoplastic, acidic resin produced by hydrogenating wood rosin to an exceptionally high degree. It is the palest, most highly stabilized rosin commercially available. Compared with Staybelite® synthetic resin, a hydrogenated rosin long established and widely used for its pale color and high oxidation stability, Foral® AX resin has better initial color and color retention, and even greater resistance to oxidation. It is especially indicated as the tackifier and resin modifier in hot melt applied coatings and adhesives that must excel in these properties.

Typical Applications in Personal Care
- Component of hot melt depilatory waxes

Benefits
- Highest degree of hydrogenation available
- Exceptional color
- Excellent heat stability and color retention
- Good acid functionality
- Low odor
- Widely compatible with polymers and solvents
- Broad regulatory approval

General Sales Specifications

Softening Point, Ring and Ball, ºC, minimum	66
Color, USDA rosin scale, maximum	XB

Typical Properties

Softening Point, Ring and Ball , ºC	69
Color, USDA rosin scale	XC
Acid Number	165
Density at 25ºC, lb/gal (kg/l)	8.9 (1.07)

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Resins for personal care

Pexalyn ® 9085 stabilized rosin ester

INCI Name: glyceryl rosinate or glyceryl abietate

Pexalyn® 9085 resin is a pale, thermoplastic glycerol ester of rosin produced via a special process that delivers light initial color and product stability. Pexalyn® 9085 resin should be considered as a cost effective tackifier resin in various depilatory formulations and cosmetic waxes.

Typical Applications in Personal Care

- Resin modifier for depilatory formulations and cosmetic waxes

Benefits

- Pale color
- Good color stability
- Low acid number
- High tack and adhesion properties
- Low odor
- Widely compatible with polymers and solvents

General Sales Specifications

Softening Point, Ring and Ball, ºC	82-90
Color, USDA, max	X
Acid Number, mg KOH/g	3 – 12

Typical Properties

Softening Point, Ring and Ball, ºC	86
Color, USDA	X
Acid Number, mg KOH/g	7
Density at 25ºC, lb/gal (kg/l)	8.9 (1.07)

Pexalyn® 9030 stabilized rosin ester

INCI name: triethylene glycol rosinate

Pexalyn® 9030 triethylene glycol ester of rosin is produced via a special process that delivers light initial color and product stability. It is a pale, viscous liquid with tackifying and plasticizing characteristics. Pexalyn® 9030 should be considered for a multitude of applications requiring a cost-effective, color-stable, lower viscosity liquid resin.

Typical Applications in Personal Care

- Component in depilatory waxes and other personal care preparations

Benefits

- Liquid
- Light initial color with good stability
- Tacky
- Low acid number
- Good plasticizing ability
- Wide range of solubility and compatibility

General Sales Specifications

Color, USDA rosin scale, maximum	WW
Acid number	5 - 12
Viscosity at 100ºC, SUS	220-300

Typical Properties

Color, USDA rosin scale, maximum	XA
Acid Number, mg KOH/g	10
Viscosity at 100ºC, SUS	260
Density at 25ºC, lb/gal (kg/l)	8.8 (1.06)

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Resins for personal care

Staybelite® Ester 3 synthetic resin

INCI name: triethylene glycol hydrogenated rosinate

Staybelite® Ester 3 synthetic resin, the triethylene glycol ester of partially hydrogenated wood rosin, is a pale, viscous, balsamic liquid with the resistance to oxidation and discoloration characteristic of the Staybelite series of rosin esters. In general, it finds use where there is a need for a pale, nonoxidizing, color-stable, highly tacky liquid resin.

Typical Applications in Personal Care

- Component in depilatory waxes and other personal care preparations

Benefits

- Liquid
- Tacky, highly adhesive
- Oxidation resistant
- Readily emulsifiable
- Wide range of solubility and compatibility

General Sales Specifications

Color, USDA rosin scale, maximum	M
Acid number	2 - 10
Viscosity at 100ºC, SUS	350 - 425

Typical Properties

Color, USDA rosin scale, maximum	N
Acid Number, mg KOH/g	7
Viscosity at 100ºC, SUS	385
Density at 25ºC, lb/gal (kg/l)	9.0 (1.08)

Hercolyn® D methyl ester of hydrogenated rosin

INCI name: methyl hydrogenated rosinate or hydrogenated methyl abietate

Hercolyn® D methyl ester of hydrogenated rosin is a light amber liquid resinous tackifier and plasticizer. Being hydrogenated, it has marked resistance to aging. It is given a special steam purification treatment to assure consistent mild odor. Hercolyn D synthetic resin is used extensively in fragrance compounds, where it functions as a fixative, carrier, and compatibilizer.

Typical Applications in Personal Care

- Component in depilatory waxes and other personal care preparations
- Component of fragranced candles

Benefits

- High refractive index
- Low odor
- Low vapor pressure
- High boiling point
- Resistant to oxidation
- Excellent pigment wetting properties
- Allergen tested
- Broad regulatory clearances
- Wide range of solubility and compatibility

Ashland Inc. has conducted *in vitro*, animal, and human patch test studies on this product. Data from these models indicate that this product is not cytotoxic and has very low potential to induce skin sensitization.

General Sales Specifications

Color, Gardner neat, maximum	6
Acid number	4-8
Viscosity at 25ºC, Gardner Holdt	Z-Z4
Appearance	EFFM

Typical Properties

Color, Gardner neat	4
Saponification number, mg KOH/g	155
Refractive index at 20ºC	1.52
Density at 25ºC, lbs/gal (kg/l)	8.5 (1.02)
Flashpoint, Setaflash CC, ºF (ºC)	388 (198)
Boiling point, 760 mm mercury, ºC	360-364

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Resins for personal care

Resins for Personal Care Product Line Summary

Product	Softening Point R&B, °C	Softening Point Drop Method °C	Color, USDA Rosin Grading Color Scale (USRG), max	Color, Gardner	Specific Gravity at 25/25 °C
Endere® S synthetic resin	69 - 77		XA, XB[1]		1.07[1]
Foral® 85 synthetic resin		80 - 88	X, XB[1]		1.07[1]
Staybelite® Ester 10 synthetic resin		80 - 88	N, WW[1]		1.07[1]
Foral® AX synthetic resin	66 Min		XB, XC[1]		1.07[1]
Pexalyn® 9085 stabilized rosin ester	82 - 90		X, X[1]		1.07[1]
Pexalyn® 9030 stabilized rosin ester			WW, XA[1]		1.06[1]
Staybelite® Ester 3 synthetic resin			M, N[1]		1.08[1]
Hercolyn® D methyl ester of hydrogenated rosin				6, 4[1]	1.02[1]

[1]Typical property, not a sales specification.

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