

Interpolymer offers several suggested formulations for Syntran[®] PC 5320.

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** Samples readily available

COLOR RETAINING CONDITIONING SHAMPOO

Formulation F-18-73-01.205

This mild "sulfate-free" conditioning shampoo with rich, luxurious lather not only gently cleanses "fragile" chemically processed hair but protects the hair from color "wash-out". Unique combination of Olefin/Graft and Conditioning polymers create a complex on the hair surface to lock color and shine into the hair. Keep that first day color longer. Extend the time between color treatments.

	<u>INCI Designation</u>	<u>Weight %</u>
Phase A		
Distilled Water	Water	46.20
Dissolvine Na2S (Akzo Nobel)	Disodium EDTA	0.10
Glycerin, USP, 99.7%	Glycerin	1.00
Stepan Mild LSB (Stephanl)	Sodium Lauryl Sulfoacetate, Disodium Laureth Sulfosuccinate	30.00
Lexaine C (Inolex)	Cocamidopropyl Betaine	12.00
Tauranol I-78 C (Finetex)	Sodium Cocoyl Isethionate	3.00
Mackamide CMA (McIntyre)	Cocamide MEA	1.00
Crothix (Croda)	PEG-150 Pentaerythrityl Tetrastearate	0.05
Incroquat 18 MEA 40 (Croda)	Quaternium-33, Dipropylene Glycol	0.50
Glycol Stearate (Choice)	Glycol Stearate	0.50
Phase B		
Syntran PC 5205	Polyacrylate-15 (and) Polyacrylate-17	3.00
Syntran PC 5320	Polyquaternium-37	1.25
Ritapan D,L (RITA)	Panthenol	0.50
Phase C		
Germall Plus (ISP)	Diazolidinyl Urea, IPBC	0.35
Fragrance	Fragrance	0.30
Trolamine 99%, N.F. (Dow)	Triethanolamine	0.25
	YIELD:	100.00

Procedure

Heat Phase A ingredients to 75-80°C with moderate agitation. Stir at 75-80°C until homogenous. Cool slowly with moderate agitation to avoid aeration to 55°C. At 55°C, individually add each Phase B ingredient to main batch with continuous agitation until a homogenous mixture is obtained. Cool slowly with moderate agitation to avoid aeration to 40-45°C, individually add Phase C ingredients to batch, stir between each addition until homogenous. Adjust pH of batch between 6.0-6.2.

SULFATE-FREE TEXTURIZING SHAMPOO WITH DETANGLING
Formulation F-18-75

This mild "sulfate-free" conditioning shampoo with rich, luxurious lather not only gently cleanses "fragile" chemically processed hair but protects the hair from color "wash-out". Unique combination of Olefin/Graft and Conditioning polymers create a complex on the hair surface to lock color and shine into the hair. Keep that first day color longer. Extend the time between color treatments.

	<u>INCI Designation</u>	<u>Weight %</u>
Phase A—Heat to 75°C		
Distilled Water	Water	43.00
Dissolvine Na2S (Akzo Nobel)	Disodium EDTA	0.10
Stepan Mild LSB (Stepanl)	Sodium Lauryl Sulfoacetate, Disodium Laureth Sulfosuccinate	30.00
Capmul S12L(Abitec)	Sodium Lauroyl Lactylate	2.00
Amphosol HCG (Stepan)	Cocamidopropyl Betaine	6.00
Tauranol I-78 C (Finetex)	Sodium Cocoyl Isethionate	5.00
Mackamide CMA (McIntyre)	Cocamide MEA	1.00
Crothix (Croda)	PEG-150 Pentaerythrityl Tetrastearate	0.35
Glycol Stearate	Glycol Stearate	0.50
Phase B—Add at 60°C		
Syntran PC 5208	Polyacrylate-15	6.00
Syntran PC 5100	Polyacrylate 21 (and) Acrylates/ Dimethylaminoethyl Methacrylate Copolymer	1.50
Ritapan D,L (RITA)	Panthenol	0.50
Syntran PC 5320	Polyquaternium-37	2.00
Fancorsil LIM-1 (Fancor)	Dimethicone PEG-8 Meadowfoamate	1.00
Phase C—Add at 40°C		
Germall Plus (ISP)	Diazolidinyl Urea, IPBC	0.35
Fragrance	Fragrance	0.30
TEA 99%, N.F. (Dow)	Triethanolamine	0.40
		Adjust pH to 6.10
	YIELD:	100.00

Procedure

Heat Phase A ingredients to 75-80°C with moderate agitation. Stir at 75-80°C until homogeneous. Cool slowly with moderate agitation to avoid aeration to 55°C. At 55°C, individually add each Phase B ingredient to main batch with continuous agitation until a homogenous mixture is obtained. Cool slowly with moderate agitation to avoid aeration to 40-45°C, individually add Phase C ingredients to batch, stir between each addition until homogenous. Adjust pH of batch between 6.0-6.3.

Appearance: White, creamy, medium viscosity shampoo.

TEXTURIZING SHAMPOO

Formulation F-18-76

This shampoo with rich, thick lather not only cleanses hair but volumizes and texturizes fine limp hair. Unique combination of Olefin/Graft and Bimodal polymers surround and support each strand to give root-lift, manageability and excellent shine to lifeless hair. This texturizing shampoo formula adds style-support and texture while leaving hair with a clean, natural feel.

	<u>INCI Designation</u>	<u>Weight %</u>
Phase A—Heat to 75°C		
Distilled Water	Water	43.17
Dissolvine Na2-S (Akzo Nobel)	Disodium EDTA	0.10
Steol CS-230 (Stepan)	Sodium Laureth Sulfate	16.00
Stepanol AM (Stepan)	Ammonium Lauryl Sulfate	14.00
Amphosol HCG (Stepan)	Cocamidopropyl Betaine	8.00
Tauranol I-78 C (Finetex)	Sodium Cocoyl Isethionate	5.00
Mackamide CMA (McIntyre)	Cocamide MEA	1.00
Crothix (Croda)	PEG-150 Pentaerythrityl Tetrastearate	0.25
Glycol Stearate	Glycol Stearate	0.50
Phase B—add at 60°C		
SYNTRAN PC 5208	Polyacrylate-15	6.00
SYNTRAN PC 5100	Polyacrylate 21 (and) Acrylates/ Dimethylaminoethyl Methacrylate Copolymer	1.50
Ritapan DL (RITA)	Panthenol	0.75
SYNTRAN PC 5320	Polyquaternium-37	2.00
Fancorsil LIM-1 (Fancor)	Dimethicone PEG-8 Meadowfoamate	1.00
Phase C—add at 40°C		
Germall Plus (ISP)	Diazolidinyl Urea and IPBC	0.35
Fragrance	Fragrance	0.30
Citric Acid	Citric Acid	0.08
	YIELD:	100.00%

Procedure

Heat Phase A ingredients to 75-80°C with moderate agitation. Stir at 75-80°C until homogeneous. Cool slowly with moderate agitation to avoid aeration to 55°C. At 55°C, individually add each Phase B ingredient to main batch with continuous agitation until a homogenous mixture is obtained. Cool slowly with moderate agitation to avoid aeration to 40-45°C, individually add Phase C ingredients to batch, stir between each addition until homogenous. Adjust pH of batch between 5.5-6.5.

LEAVE-IN CONDITIONER WITH COLOR PROTECTION

Formulation F-18-78

Excellent detangling and softening power on hair combined with color retention properties. Great for all hair types. Superior color protection against color wash-out and UV rays.

	<u>INCI Designation</u>	<u>Weight %</u>
Phase A		
Distilled Water	Water	87.18
Dissolvine Na2S (Akzo Nobel)	Disodium EDTA	0.05
Propylene Glycol	Propylene Glycol	1.50
Ritapan DL (Rita)	Panthenol	0.30
SYNTRAN 5320	Polyquaternium-37	3.00
Protaquat CT-29 (Protamcen)	Cetrimonium Chloride	1.50
Crodasorb UV-HPP (Croda)	Polyquaternium-59, Butylene Glycol	0.50
Phase B		
Mackstat DM (McIntyre)	DMDM Hydantoin	0.40
Promois Silk 1000Q (Rita)	Hydroxypropyltrimonium Hydrolyzed Silk	0.10
Promois S-720 (Rita)	Hydrolyzed Silk	0.05
Phase C		
Brij 98 Veg (Uniquema)	Oleth-20	0.35
Fragrance	Fragrance	0.07
Phase D		
SYNTRAN PC 5205	Polyacrylate-15 (and) Polyacrylate-17	5.00
Citric Acid	Citric Acid	Adjust to pH 4.5-5.5
	YIELD:	100.00

Procedure

Heat water to 40°C. Individually, add Phase A ingredients. Stir between each addition until homogenous. Add Phase B ingredients. Melt Phase C ingredients at 45°C, add to Phase A/B, stir until homogenous. Add Phase D ingredients. Adjust pH with Citric Acid to 4.5 – 5.5.

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SOFT HOLD STRAIGHTENING FOAM

Formulation F-18-79

Excellent detangling and softening power on hair. Smooths surface of hair and eliminates frizz and flyaways. Adds sheen to dull hair. This soft-hold formula is not sticky or tacky and leaves hair with a soft natural feel when dry. Unique polymer adds weight to hair to hold it straight until next shampoo. No unwanted buildup, flaking or crispiness imparted to hair.

	<u>INCI Designation</u>	<u>Weight %</u>
Phase A		
Purified Water	Water	90.95
Dissolvine Na2S (Akzo Nobel)	Disodium EDTA	0.05
Phase B		
Lipocol HCO-40 (Lipo)	PEG-40 Hydrogenated Castor Oil	0.60
Fragrance	Fragrance	0.05
Phase C		
Ritapan DL (Rita)	Panthenol	0.20
Dow Corning 193 Surfactant (Dow)	PEG-12 Dimethicone	0.50
Germall Plus (ISP)	Diazolidinyl Urea, IPBC	0.40
Mackpro WWP (McIntyre)	Wheatgermamidopropyl Dimethylamine Hydrolyzed Wheat Protein	0.25
Phase D		
SYNTRAN PC 5320	Polyquaternium-37	7.00
Citric Acid	Citric Acid	Adjust to pH 4.0-5.0
	YIELD:	100.00

Procedure

Prepare Phase A and warm to 35-40° C with moderate stirring. In a separate vessel warm HCO-40 (temperature not to exceed 45° C), add fragrance and stir until homogenous. Add Phase B to Phase A and stir until clear, homogenous mixture obtained. Individually add Phase C ingredients to batch, stir between each addition until clear and homogenous. Add Phase D, stir until clear and homogenous. Cool to room temperature. Adjust pH with citric acid to 4.0-5.0 .

Fill into Airspray WR T4 Foamer.

9/2005

LEAVE-IN CONDITIONER

Formulation F-24-12

Excellent detangling and softening power leaves hair soft and silky. Great for natural curls and relaxed styles. Leaves hair with excellent manageability, body and sheen.

	<u>INCI Designation</u>	<u>Weight %</u>
Phase A		
Deionized Water	Water	83.20
Incromectant AMEA-100(Croda)	Acetamide MEA	3.00
Glycerin	Glycerin	2.00
DC 193 Fluid (Dow Corning)	PEG-12 Dimethicone	1.00
SYNTRAN 5320	Polyquaternium-37	8.00
MackPro WWP (McIntyre)	Wheatgermamidopropyl Dimethyl-Amine Hydrolyzed Wheat Protein	1.50
Phase B		
Brij 98 Veg (Uniquema)	Oleth-20	0.75
Fragrance	Fragrance	0.15
Phase C		
Glydant Plus Liquid (Lonza)	DMDM Hydantoin, IPBC	0.30
Citric Acid	Citric Acid	0.10
		adjust to pH 4.2-4.5
	YIELD:	100.00

Procedure

Heat water to 40°C. Individually, add Phase A ingredients. Stir between each addition until homogenous. Premix Phase B ingredients at 45°C, add to Phase A, stir until solution clears. Add Phase C ingredients. Stir until clear and homogeneous. Adjust pH with Citric Acid to 4.2 – 4.5. Appearance: Clear liquid, sprayable

BLOW-DRY LOTION

Formulation F-24-13

Adds Body, Bounce and Shine. Great for all relaxed hair styles. Controls frizz as you blow-dry and style. Hair feels silky yet maintains excellent style memory.

	<u>INCI Designation</u>	<u>Weight %</u>
Phase A		
Deionized Water	Water	87.45
Incromectant AMEA-100 (Croda)	Acetamide MEA	2.00
Glycerin	Glycerin	1.00
DC 193 Fluid (Dow Corning)	PEG-12 Dimethicone	1.00
Phase B		
Brij 98 Veg (Uniquema)	Oleth-20	1.00
Fragrance	Fragrance	0.20
Phase C		
Glydant Plus Liquid (Lonza)	DMDM Hydantoin, IPBC	0.35
Phase D		
SYNTRAN [®] 5320	Polyquaternium-37	3.00
SYNTRAN [®] 5208	Polyacrylate-15	4.00
	YIELD:	100.00

Procedure

Heat water to 40°C. Individually, add Phase A ingredients. Stir between each addition until homogenous. Premix Phase B ingredients at 45°C, add to Phase A, stir until solution clears. Add Phase C ingredients. Stir until clear and homogeneous. Add Phase D ingredients. Stir until homogeneous.

CONDITIONING MOUSSE

Formulation F-24-23

This fast drying, alcohol free formula provides excellent style memory and frizz free results. Can be used for blow-dry and wrap styling.

	<u>INCI Designation</u>	<u>Weight %</u>
Phase A		
Distilled Water	Water	81.15
Dissolvine Na2-S (AKZO NOBEL)	Disodium EDTA	0.05
Phase B		
Brij 98 Veg (Uniquema)	Oleth-20	0.50
Fragrance	Fragrance	0.10
Phase C		
DC 193 Fluid (Dow Corning)	PEG-12 Dimethicone	1.50
Ritapan DL (RITA)	Panthenol	0.30
Amphosol HCG (Stepan)	Cocamidopropyl Betaine	1.00
Glydant Plus Liquid (Lonza)	DMDM Hydantoin, IPBC	0.40
Phase D		
SYNTRAN[®] PC 5320	Polyquaternium-37	5.00
SYNTRAN[®] PC 5208	Polyacrylate-15	10.00
	YIELD:	100.00%

Procedure

Add water to vessel and heat to 45°C. Add Dissolvine and stir until dissolved. Premix Brij 98 and fragrance and heat to 40-45°C. Add Phase B to Phase A. Stir until clear and homogeneous. Individually add each Phase C ingredient, stir between each addition until batch is clear and homogeneous. Individually add **SYNTRAN[®] PC 5320** and **SYNTRAN[®] PC 5208**. Stir until homogeneous solution results. Appearance: Semi-translucent liquid.

WRAPPING AND SHINE CRÈME

Formulation F-24-24

This luxurious formula rich in Avocado and Jojoba oils adds style support, sheen, moisture and protection to fragile hair. Excellent for wrapping hair. Conditions, detangles and eliminates frizz while providing style memory.

	<u>INCI Designation</u>	<u>Weight %</u>
Phase A		
Distilled Water	Water	65.45
Glycerin	Glycerin	2.50
Propylene Glycol	Propylene Glycol	2.50
Cellosize HEC QP 5200 (Amerchol)	Hydroxyethylcellulose	0.25
SYNTRAN® PC 5320	Polyquaternium-37	2.00
SYNTRAN® PC 5208	Polyacrylate-15	5.00
Phase B		
Finsolv TN	C12-15 Alkyl Benzoate	3.00
Petrolatum (Penreco)	Petrolatum	4.00
Avocado Oil (Desert Whale)	Persea Gratissima Oil	3.00
Jojoba Oil (Desert Whale)	Simmondsia Chinensis Seed Oil	3.00
Protachem SMO (Protameen)	Sorbitan Monooleate	0.20
Escalol 557 (ISP)	Ethylhexyl Methoxycinnamate	1.00
Procol CS-20D (Protameen)	Cetearyl Alcohol, Ceteareth-20	5.00
Stearyl Alcohol	Stearyl Alcohol	1.00
Cetyl Alcohol)	Cetyl Alcohol	1.50
Phase C		
Glydant Plus Liquid (Lonza)	DMDM Hydantoin, IPBC	0.40
Fragrance	Fragrance	0.20
	YIELD:	100.00%

Procedure

Add water, glycerin and propylene glycol to vessel and begin heating to 75°C. Add HEC and stir until completely hydrated and solution is clear. Individually add each **SYNTRAN** polymer. Stir until batch is homogeneous. With batch at 75°C, individually add each Phase B ingredient to batch. Stir between each addition until homogeneous emulsion results. Cool batch to 45°C and individually add each Phase C ingredient. Stir until homogeneous emulsion results. Appearance: white glossy creme.

