

## Interpolymer offers several suggested formulations for Syntran<sup>®</sup> PC 5117.

*(This is an interactive PDF file. Simply click on the links appropriate to the information you wish to view.)*

- 55% VOC Pump Hair Spray—Hard Hold F-18-68 \*\*
- 55% VOC Pump Hair Spray—Medium Hold F-18-69
- 35% VOC Aerosol Hair Spray—Medium Hold F-18-70 \*\*
- 55% VOC Aerosol Hair Spray—Medium Hold F-18-71 \*\*
- Root Lifter / Spray Gel F-24-22 \*\*
- Sculpting and Smoothing Fiber Crème F-24-25 \*\*
- Cocoa Butter Pomade F-24-28 \*\*
- Firm-Hold Crystal Spritz F-24-31
- Straightening Gel F-24-34 \*\*

\*\* Samples readily available

**55% VOC PUMP HAIR SPRAY—HARD HOLD**
**Formulation F-18-68-01**

Quick drying 55% VOC formulation with firm hold and gloss. Excellent style support yet easily washes out of hair. Deposits flexible film with good adhesion to hair surface, combs out without flaking. Great humidity resistance.

	<u>INCI Designation</u>	<u>Weight %</u>
<b>Phase A</b>		
SDA-40B 200Proof	Alcohol Denatured	55.00
Distilled Water	Water	14.45
AMP-95 (Angus)	Aminomethyl Propanol	0.40
Dow Corning 193 Fluid (Dow Corning)	PEG-12 Dimethicone	0.10
Crovol PK-70 (Croda)	PEG-45 Palm Kernel Glycerides	0.05
<b>Phase B</b>		
<b>SYNTRAN PC 5400</b>	<b>Ammonium Acrylates Copolymer</b>	10.00
<b>SYNTRAN PC 5117</b>	<b>Polyacrylate-18 (and) Polyacrylate-19</b>	20.00
AMP-95 (Angus)		Adjust to pH 8.0-8.5
	YIELD:	100.00

Procedure

Add ingredients to appropriate vessel as listed. Stir between each addition until batch is clear and homogenous.

Adjust pH at end with AMP-95 to 8.0 – 8.5.

Appearance: Product is a clear and homogenous solution.

3/2005

**55% VOC PUMP HAIR SPRAY—MEDIUM HOLD**
**Formulation F-18-69-01.117**

Quick drying 55% VOC formulation with medium hold. Excellent style support and gloss, yet easily washes out of hair. Deposits flexible film with good adhesion to hair surface, combs out without flaking. Superior humidity protection. Can be restyled or shaped after dry with styling iron or blow dryer without adding additional product to hair.

	<u>INCI Designation</u>	<u>Weight %</u>
<b>Phase A</b>		
SDA-40B 190 Proof	Alcohol Denatured	55.00
Distilled Water	Water	19.45
AMP-95 (Angus)	Aminomethyl Propanol	0.40
DC 193 Fluid (Dow Corning)	PEG-12 Dimethicone	0.10
Crovol PK-70 (Croda)	PEG-45 Palm Kernel Glycerides	0.05
<b>Phase B</b>		
<b>SYNTRAN PC 5400</b>	<b>Ammonium Acrylates Copolymer</b>	5.00
<b>SYNTRAN PC 5117</b>	<b>Polyacrylates-18 (and) Polyacrylates-19</b>	20.00
AMP-95 (Angus)		Adjust to pH 8.0-8.5
	YIELD:	100.00

**Procedure**

Add ingredients to appropriate vessel as listed. Stir between each addition until batch is clear and homogenous.

Adjust pH at end with AMP-95 to 8.0 – 8.5.

Appearance: Product is clear and homogenous.

3/2005

**35% VOC AEROSOL HAIR SPRAY—MEDIUM HOLD**
**Formulation F-18-70-01.117**

Break-through 35% VOC aerosol formulation with firm hold and shine. Quick drying and high humidity resistant film provides excellent style support, yet easily washes out of hair. Combs out without flaking.

<u>Bulk Concentrate</u>	<u>INCI Designation</u>	<u>Weight %</u>
<b>Phase A</b>		
SDA-40B 200 Proof	Alcohol Denatured	70.00
AMP-95 (Angus)	Aminomethyl Propanol	0.50
Dow Corning 193 Fluid (Dow Corning)	PEG-12, Dimethicone	0.10
Crovol PK-70 (Croda)	PEG-45 Palm Kernel Glycerides	0.05
<b>Phase B</b>		
<b>SYNTRAN PC 5117</b>	<b>Polyacrylates-18 (and) Polyacrylates-19</b>	19.35
<b>SYNTRAN PC 5400</b>	<b>Ammonium Acrylates Copolymer</b>	10.00
	YIELD:	<u>100.00</u>

**Procedure**

Add ingredients to appropriate vessel as listed. Stir between each addition until batch is clear and homogenous. Adjust pH to 8.4 – 8.8 with AMP-95 at end, stir until homogenous. Product is a slightly turbid solution.

**Final Formula:**

		<u>Weight %</u>
Bulk concentrate	Bulk concentrate	50.00
Propellant	Hydrofluorocarbon 152A	50.00
	YIELD:	<u>100.00</u>

**Precision-Valve Specifications:**

020 MB Concave Kosmos  
 016 S90  
 Buna N S90  
 018 X 013 S90  
 Alum, Epon T/B, Cut Gasket

3/2005

**55% VOC AEROSOL HAIR SPRAY—MEDIUM HOLD**
**Formulation F-18-71-01**

Next generation 55% VOC aerosol formulation with medium hold and great gloss. Quick drying and high humidity resistant film provides excellent style support, yet easily washes out of hair. Combs out without flaking.

<u>Bulk Concentrate</u>	<u>INCI Designation</u>	<u>Weight %</u>
<b>Phase A</b>		
SDA-40B 200 Proof	Alcohol Denatured	70.00
AMP-95 (Angus)	Aminomethyl Propanol	0.50
Dow Corning 193 Fluid (Dow Corning)	PEG-12, Dimethicone	0.10
Crovol PK-70 (Croda)	PEG-45 Palm Kernel Glycerides	0.05
<b>Phase B</b>		
<b>SYNTRAN PC 5400</b>	<b>Ammonium Acrylates Copolymer</b>	10.00
<b>SYNTRAN PC 5117</b>	<b>Polyacrylates-18 (and) Polyacrylates-19</b>	19.35
	YIELD:	<u>100.00</u>

**Procedure**

Add ingredients to appropriate vessel as listed. Stir between each addition until batch is clear and homogenous. Adjust pH to 8.4 – 8.8 with AMP-95 at end, stir until homogenous. Product is a slightly turbid solution.

<u>Final Formula:</u>		<u>Weight %</u>
Bulk concentrate	Bulk concentrate	63.00
Propellant	Dimethyl Ether	10.50
Propellant	Hydrofluorocarbon 152A	26.50
	YIELD:	<u>100.00</u>

**Precision-Valve Specifications:**

020 MB Concave Kosmos  
 013 S90  
 Buna N S90  
 013 X 013 S90  
 Alum, Epon T/B, Cut Gasket

3/2005

## PUMP SPRAY GEL

### Formulation F-24-22

Great for natural curls and wavy styles. Leaves hair with body, bounce and shine. Humidity protection, style memory

	<u>INCI Designation</u>	<u>Weight %</u>
<b>Phase A</b>		
Deionized Water	Water	89.22
Structure 3001 (National Starch)	Acrylates/Ceteth-20 Itaconate Copolymer	2.35
<b>SYNTRAN® PC 5117</b>	<b>Polyacrylate-18 (and) Polyacrylate-19</b>	6.00
Keravis (Croda)	Hydrolyzed Vegetable Protein	0.10
Glycerin	PG-Propyl Silanetrol	0.50
Promois S-720 (RITA)	Glycerin	0.50
	Hydrolyzed Silk	0.30
<b>Phase B</b>		
Lipocol HCO-40 (Lipo)	PEG-40 Hydrogenated Castor Oil	0.40
Fragrance	Fragrance	0.10
<b>Phase C</b>		
Glydant Plus Liquid (Lonza)	DMDM Hydantoin, IPBC	0.30
0.10% aq. Green #5 (LCW)	Green 5	0.15
0.10% aq. Yellow #5 (LCW)	Yellow 5	0.05
AMP-95 (Angus)	Aminomethyl Propanol	0.53
		adjust to pH 8.5-8.75
	<b>YIELD:</b>	<b>100.00</b>

### Procedure

Individually add Phase A ingredients to water with moderate agitation. Stir between each addition until homogenous. Premix Phase B ingredients and add to Phase A, stir until homogeneous. Individually add Phase C ingredients. Stir until clear and homogeneous. Adjust pH with AMP-95 to 8.5 – 8.75.

Appearance: Translucent thin gel, pump-sprayable through Optima 160 mcl output Fine mist pump

## SCULPTING AND SMOOTHING FIBER CRÈME

### Formulation F-24-25

High-tech sculpting and smoothing crème contains Nylon Fibers and can be applied to wet or dry hair. Firm yet Flexible hold formula shapes hair for sleek-straight look or natural looking curls/waves. Instantly restores moisture and natural oils to dry hair. Creates ultra-glossy finish, smoothes away frizz and fights high humidity.

	<u>INCI Designation</u>	<u>Weight %</u>
<b>Phase A</b>		
Distilled Water	Water	69.45
Propylene Glycol	Propylene Glycol	5.00
<b>SYNTRAN® PC 5117</b>	<b>Polyacrylate-18, Polyacrylate-19</b>	8.00
<b>Phase B</b>		
Finsolv TN	C12-15 Alkyl Benzoate	3.00
DC 200 Fluid - 20 cst (Dow Corning)	Dimethicone	1.50
DC 200 Fluid - 100 cst (Dow Corning)	Dimethicone	1.00
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, Cetareth-20	2.00
Stearyl Alcohol (Protameen)	Stearyl Alcohol	0.75
Cetyl Alcohol	Cetyl Alcohol	0.75
Ceraphyl SLK (ISP)	Isodecyl Neopentanoate	2.00
<b>Phase C</b>		
Rapithix A-60 (ISP)	Sodium Polyacrylate, Hydrogenated Polydecene, Trideceth-6	1.50
<b>Phase D</b>		
Germall Plus Liquid (ISP)	DMDM Hydantoin, IPBC	0.70
Fiberlon Y10(LCW)	Nylon-6, Silica	0.03
Fragrance	Fragrance	0.12
	<b>YIELD:</b>	<b>100.00%</b>

### Procedure

Add water and propylene glycol to vessel and begin heating to 75°C. Add **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 55°C and add Rapithix. Batch will thicken. Stir until homogeneous and smooth. Cool batch to 45°C and add Phase D ingredients. Stir and cool batch to room temperature. Adjust pH to 6.8-7.0. Appearance: white glossy creme.

## COCOA BUTTER POMADE

### Formulation F-24-28

This luxurious pomade rich in Cocoa Butter, Jojoba oil and Tribehenin is great for the “piecey”, matte-look finish for modern hair styles. Moisturizes, deflates frizz and gives unique feel and hold.

	<u>INCI Designation</u>	<u>Weight %</u>
<b>Phase A</b>		
Distilled Water	Water	75.60
Glycerin	Glycerin	2.00
<b>SYNTRAN® PC 5117</b>	Polyacrylate-18, Polyacrylate-19	6.00
<b>Phase B</b>		
Cocoa Butter USP (Protameen)	Theobroma Cacao (Cocoa) Seed Butter	5.00
Lipocol SC-25 (Lipo)	Cetareth-25	1.00
Jojoba Oil, Colorless (Desert Whale)	Simmondsia Chinensis Seed Oil	2.00
Syncrowax HR-C (Croda)	Tribehenin	2.00
Escalol 557 (ISP)	Ethylhexyl Methoxycinnamate	0.30
Stearyl Alcohol	Stearyl Alcohol	1.00
Cetyl Alcohol	Cetyl Alcohol	3.00
<b>Phase C</b>		
Rapithix A-60 (ISP)	Sodium Polyacrylate, Hydrogenated Polydecene, Trideceth-6	1.50
Timirion Silk Gold (EMD RONA)	Titanium Dioxide, Mica	0.10
<b>Phase D</b>		
Glydant Plus Liquid (Lonza)	DMDM Hydantoin, IPBC	0.40
Fragrance	Fragrance	0.10
	<b>YIELD:</b>	<u>100.00%</u>

### Procedure

Add water, glycerin and **SYNTRAN® PC 5117** to vessel and begin heating to 75°C. 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 55°C and individually add each Phase C ingredient. Batch will thicken. Stir until homogeneous and smooth. Cool batch to 45 C and add Phase D ingredients.

Appearance: glossy, white creme.

pH = 6.4 – 6.6

**FIRM-HOLD CRYSTAL SPRITZ**
**Formulation F-24-31**

Fast drying formula can be used to shape and fix hair in any style. Leaves hair with glass-like sheen. Great for all hair styles. Leaves hair non-tacky, never oily. Flake-free formula has excellent style memory.

	<u>INCI Designation</u>	<u>Weight %</u>
<b>Phase A</b>		
SDA 40 B 190 proof	Alcohol Denat.	57.50
Deionized Water	Water	11.70
AMP-95 (Angus)	Aminomethyl Propanol	0.55
Lipocol HCO-40(LIPO)	PEG-40 Hydrogenated Castor Oil	0.20
Hydrotriticum WAA(Croda)	Wheat Amino Acids	0.05
<b>Phase B</b>		
<b>SYNTRAN® PC 5400</b>	<b>Ammonium Acrylates Copolymer</b>	10.00
<b>SYNTRAN® PC 5117</b>	<b>Polyacrylate-18 (and) Polyacrylate-19</b>	20.00
AMP-95 (Angus)	Aminomethyl Propanol	Adjust to pH 8.6-8.8
	YIELD:	100.00

**Procedure**

Individually, add Phase A ingredients to appropriate vessel. Stir between each addition until homogenous. Individually add Phase B ingredients to Phase A, stir until solution clears. Adjust pH to 8.7.

Appearance: Clear liquid  
pH: 8.6-8.8

## STRAIGHTENING GEL

Formulation F- 24-34

Apply to wet or dry hair and blow dry to get ultra-sleek look on any hair type. Hair has weight and stays straight without using heavy oils or waxes. Hair retains its straightness even under high humidity conditions. Controls frizz and fly-aways.

	<u>INCI Designation</u>	<u>Weight %</u>
<b>Phase A</b>		
Deionized Water	Water	83.70
Structure 3001 (National Starch)	Acrylates/Ceteth-20 Itaconate Copolymer	7.00
<b>SYNTRAN® PC 5117</b>	<b>Polyacrylate-18, Polyacrylate-19</b>	6.00
Keravis (Croda)	Hydrolyzed Vegetable Protein	
	PG-Propyl Silanetrol	0.10
Glycerin	Glycerin	1.00
<b>Phase B</b>		
Lipocol HCO-40 (Lipo)	PEG-40 Hydrogenated Castor Oil	0.40
Fragrance	Fragrance	0.10
<b>Phase C</b>		
Glydant Plus Liquid (Lonza)	DMDM Hydantoin, IPBC	0.30
0.10% aq. Ext. Violet #2 (LCW)	Ext. Violet 2	0.20
AMP-95 (Angus)	Aminomethyl Propanol	1.20
		adjust to pH 8.60-8.80
	<b>YIELD:</b>	<u>100.00</u>

### Procedure

Individually add Phase A ingredients to water with moderate agitation. Stir between each addition until homogenous. Premix Phase B ingredients and add to Phase A, stir until homogeneous. Individually add Phase C ingredients. Stir until clear and homogeneous. Adjust pH with AMP-95 to 8.60 – 8.80. Appearance: Translucent thin gel.