

Interpolymer offers
several suggested formulations for
Syntran[®] PC 5227 for Skin Care.

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

SKIN CARE

- Moisturizing Crème F-24-39 **
- Skin Moisturizer with SPF 15 F-24-52 **
- Broad Spectrum SPF Facial & Body Moisturizer F-24-81
- Moisturizing Crème with Broad Spectrum SPF Protection F-24-87
- Economical, Light Textured, Low Actives SPF Crème F-24-92
- SPF 20 Skin Moisturizer F-24-164 **

MOISTURIZING CRÈME WITH SYNTRAN® PC 5227

Rich textured moisturizing crème provides elegant skin feel and lubricity. Non-greasy formula with no residual tackiness. Instantly makes dry skin more supple and hydrated. Patented Olefin/Graft polymer technology provided by **SYNTRAN® PC 5227** imparts enhanced moisturization, softness and unique rub-in and re-fatting qualities to skin.

Formulation F-24-39

	<u>INCI Designation</u>	<u>Weight %</u>
Phase A-1 —Heat to 75°C		
Distilled Water	Water	65.80
Dissolvine Na2S (Akzo Nobel)	Disodium EDTA	0.05
Phase A-2 – Add at 45°C		
Butylene Glycol	Butylene Glycol	3.00
Ticaxan Xanthan NF (TIC Gum)	Xanthan Gum	0.25
Phase A-3 - Add at 75°C		
Phenoxetol (Clariant)	Phenoxyethanol	1.00
SYNTRAN® PC 5227	Polyacrylate-15, Polyacrylate-17	10.00
Phase B—Add at 75°C		
Prolipid 141 (ISP)	Glyceryl Stearate, Behenyl Alcohol, Palmitic Acid Stearic Acid , Lecithin, Lauryl Alcohol Myristyl Alcohol, Cetyl Alcohol	3.00
Cetyl Alcohol (Protameen)	Cetyl Alcohol	1.50
Protachem CTG (Protameen)	Caprylic/Capric Triglyceride	3.00
Protachem ISP (Protameen)	Isostearyl Palmitate	2.00
Ceraphyl SLK (ISP)	Isodecyl Neopentanoate	3.00
Protachem SMO (Protameen)	Sorbitan Oleate	0.20
Lipovol A (LIPO)	Persea Gratissima (Avocado) Oil	1.00
Phase C—Add at 55°C		
DC 245 Fluid (Dow Corning)	Cyclopentasiloxane	5.00
DC 200 Fluid 350 cst (Dow Corning)	Dimethicone	1.00
Phase D—Add at 45°C		
Fragrance	Fragrance	0.20
10% Citric Acid	Citric Acid	Q.S.
	YIELD:	100.00

Procedure

Combine Phase A-1 ingredients and begin heating to 45° C. Premix Phase A-2 and add to A-1 at 45°C. Batch will thicken, adjust stirring to avoid aeration. Continue heating to main vessel to 75°C. At 75°C individually add Phase A-3 ingredients. Stir until smooth and homogeneous. In a separate vessel add all Phase B ingredients and heat to 75°C until melted. Add Phase B to Phase A @ 75°C. Cool batch to 55°C, add Phase C ingredients. Homomix batch until uniform. Cool batch to 45°C add Phase D. Adjust pH to 6.5 +/- 0.5

SKIN MOISTURIZER with SPF 15

Moisturizing lotion with patented Olefin/Graft polymer technology designed to boost organic UV absorbers to perform at a level of ~SPF 15. Superior moisturizing formula spreads easily and rubs in quickly. Satin smooth skin feel. Instantly makes dry skin more supple and hydrated.

SYNTRAN® PC 5227 also imparts enhanced moisturization, softness and unique rub-in and re-fattening qualities to skin. Low irritation potential.

Formulation F-24-52

	<u>INCI Designation</u>	<u>Weight %</u>
Phase A-1—Heat to 75°C		
Distilled Water	Water	63.15
Dissolvine Na2S (Akzo Nobel)	Disodium EDTA	0.05
Phase A-2 – Add at 45°C		
Butylene Glycol	Butylene Glycol	2.00
Ticaxan Xanthan Gum NF (TIC Gum)	Xanthan Gum	0.25
Phase A-3—Add at 75°C		
Phenoxyetol (Clariant)	Phenoxyethanol	0.75
SYNTRAN® PC 5227	Polyacrylate-15 (and) Polyacrylate-17	10.00
Phase B—Add at 75°C		
Protachem CTG (Protameen)	Caprylic/Capric Triglyceride	1.00
Protachem ISP (Protameen)	Isostearyl Palmitate	2.00
Ceraphyl SLK (ISP)	Isodecyl Neopentanoate	3.00
Protachem SMO (Protameen)	Sorbitan Oleate	0.10
Lipovol A (LIPO)	Persea Gratissima (Avocado) Oil	1.00
Escalol 557 (ISP)	Octinoxate	2.50
Escalol 567 (ISP)	Oxybenzone	1.50
Escalol 587 (ISP)	Octisalate	1.50
Crodafos CES (Croda)	Cetearyl Alcohol (and) Ceteth-10 Phosphate (and) Dicetyl Phosphate	5.00
Phase C—Add at 55°C		
DC 245 Fluid (Dow Corning)	Cyclopentasiloxane	3.00
DC 200 Fluid 200 cst (Dow Corning)	Dimethicone	3.00
Phase D—Add at 45°C		
Fragrance	Fragrance	0.20
	YIELD:	100.00

Procedure

Combine Phase A-1 ingredients and begin heating to 45° C. Premix Phase A-2 and add to A-1 at 45°C. Batch will thicken, adjust stirring to avoid aeration. Continue heating to main vessel to 75°C. At 75°C individually add Phase A-3 ingredients. Stir until smooth and homogeneous. In a separate vessel add all Phase B ingredients and heat to 75°C until melted. Add Phase B to Phase A @ 75°C. Cool batch to 55°C, add Phase C ingredients. Homomix batch until uniform. Cool batch to 45°C add Phase D. Adjust pH to 7.0 +/- 0.5

BROAD SPECTRUM SPF FACIAL & BODY MOISTURIZER
Formulation F-24-81

Moisturizing lotion with patented Olefin/Graft polymer technology designed to boost organic UV absorbers to perform at a SPF 30+. Superior moisturizing formula spreads easily and rubs in quickly. Satin smooth skin feel. Instantly makes dry skin more supple and hydrated. **SYNTRAN® PC 5227** also imparts enhanced moisturization, softness and unique rub-in and re-fattening qualities to skin. Low irritation potential.

	<u>INCI Designation</u>	<u>Weight %</u>
Phase A-1—Heat to 75°C		
Distilled Water	Water	68.05
Dissolvine Na2S (Akzo Nobel)	Disodium EDTA	0.10
Ultrez 21 (Noveon)	Acrylates/C10-30 Alkyl Acrylates Crosspolymer	0.40
Phase A-2 – Add at 45°C		
Butylene Glycol	Butylene Glycol	3.00
Ticaxan Xanthan Gum NF (TIC Gum)	Xanthan Gum	0.25
Phase A-3—Add at 75°C		
Optiphen (Actichem)	Phenoxyethanol, Caprylyl Glycol	1.00
Phase B—Add at 75°C		
Protachem CTG (Protameen)	Caprylic/Capric Triglyceride	1.00
Protachem ISP (Protameen)	Isostearyl Palmitate	2.00
Ceraphyl SLK (ISP)	Isodecyl Neopentanoate	3.00
Procetyl AWS (Croda)	PPG-5-Ceteth-20	1.00
Parsol 1789 (DSM)	Avobenzene	2.00
Escalol 567 (ISP)	Benzophenone-3	1.50
Escalol 587 (ISP)	Ethylhexyl Salicylate	3.00
Parsol 340 (DSM)	Octocrylene	1.00
Cetyl Alcohol	Cetyl Alcohol	1.50
Stearyl Alcohol	Stearyl Alcohol	0.50
Phase C—Add at 60°C		
DC 245 Fluid (Dow Corning)	Cyclopentasiloxane	2.00
DC 200 Fluid 350 cst (Dow Corning)	Dimethicone	2.00
Phase D—Add at 60°C		
TEA 99%	Triethanolamine	0.50
SYNTRAN® PC 5227	Polyacrylate-15 (and) Polyacrylate-17	6.00
Phase E—Add at 45°C		
Fragrance	Fragrance	0.20
	YIELD:	<u>100.00</u>

Procedure

Combine Phase A-1 ingredients and begin heating to 45°C. Stir until Ultrez is completely hydrated. Premix Phase A-2 and add to A-1 when batch reaches 45°C. Batch will thicken, adjust stirring to avoid aeration. Continue heating to 75°C. Add Phase A-3. In a separate vessel add all Phase B ingredients and heat to 75°C until melted. Add Phase B to Phase A @ 75°C. Cool batch to 60°C, add Phase C ingredients. Homomix batch until uniform. Add TEA at 60°C, batch will thicken, add Syntran® PC 5227 and stir until homogeneous. Cool batch to 45°C add Phase E. Adjust pH to 6.5 +/- 0.5 1/07
In Vitro SPF = 30+.

MOISTURIZING CRÈME WITH BROAD SPECTRUM SPF PROTECTION

Formulation F-24-87

Stable crème with novel SPF boosting polymers designed to boost both UVA and UVB organic sunscreens. Superior moisturizing formula spreads easily and rubs in quickly. Satin smooth skin feel. Great for dry or chapped skin.

	<u>INCI Designation</u>	<u>Weight %</u>
Phase A-1 —Heat to 75°C		
Deionized Water	Water	68.05
Dissolvine Na2S (Akzo Nobel)	Disodium EDTA	0.05
Ultrez 10 (Noveon)	Carbomer	0.20
Phase A-2		
Butylene Glycol	Butylene Glycol	3.00
Ticaxan Xanthan NF (TIC Gum)	Xanthan Gum	0.20
Phase A-3		
Microcare PHG (Actichem)	Phenoxyethanol, Caprylyl Glycol	1.00
Phase B—Add at 75°C		
Protachem CTG (Protameen)	Caprylic/Capric Triglyceride	1.00
Protachem ISP (Protameen)	Isostearyl Palmitate	2.00
Ceraphyl SLK (ISP)	Isodecyl Neopentanoate	1.50
Ceraphyl ODS (ISP)	Octyldodecyl Stearate	1.50
Procetyl AWS (Croda)	PPG-5-Ceteth-20	1.50
Parsol 1789 (DSM)	Avobenzene	2.00
Escalol 567 (ISP)	Oxybenzone	3.00
Escalol 587 (ISP)	Octisalate	1.50
Parsol 340 (DSM)	Octocrylene	1.00
Cetyl Alcohol (Protameen)	Cetyl Alcohol	1.50
Stearyl Alcohol (Protameen)	Stearyl Alcohol	0.50
Phase C-1 —Add at 60°C		
DC 245 Fluid (Dow Corning)	Cyclopentasiloxane	2.00
DC 200 Fluid 350 cst (Dow Corning)	Dimethicone	2.00
Phase C-1 —Add at 60°C		
TEA 99%	Triethanolamine	0.30
Phase D—Add at 60°C		
SYNTRAN® PC 5227	Polyacrylate-15 (and) Polyacrylate-17 Ammonium Acrylates Copolymer	5.00
SYNTRAN® PC 5400		1.00
Phase E—Add at 45°C		
Fragrance	Fragrance	0.20
	YIELD:	100.00

Procedure

Combine Phase A-1 ingredients and begin heating to 75°C. Stir until Ultrez is hydrated. Premix Phase A-2 and add to A-1. Batch will thicken, adjust stirring to avoid aeration. At 75° C add Phase A-3. In a separate vessel add all ingredients in Phase B, heat to 75°C until melted. Add Phase B to Phase A @ 75°C. Cool to 60°C. Individually add Phase C-1 ingredients at 60°C. Homomix. Add Phase C-2 and stir until batch thickens and is homogeneous. Individually add each Phase D ingredients, stir until smooth and homogeneous. Cool slowly to 45°C, add Phase E. Adjust pH to 6.5-7.0 with TEA, if necessary.

In Vitro SPF = 15

05/07

ECONOMICAL, LIGHT TEXTURED, LOW ACTIVES SPF CREME
Formulation F-24-92

Economical, low viscosity, light textured creme with novel combination of **SYNTRAN®** SPF boosting and film forming polymers. Provides SPF protection using less organic sunscreens. Moisturizing formula spreads easily and rubs in quickly. Satin smooth skin feel. Low irritation potential formula. Moisture resistance.

	<u>INCI Designation</u>	<u>Weight %</u>
Phase A-1 —Heat to 75°C		
Distilled Water	Water	68.40
Dissolvine Na2S (Akzo Nobel)	Disodium EDTA	0.10
Ultrez 21 (Noveon)	Acrylates/C10-30 Alkyl Acrylate Crosspolymer	0.30
Phase A-2		
Butylene Glycol	Butylene Glycol	3.00
Ticaxan Xanthan NF (TIC Gum)	Xanthan Gum	0.10
Phase A-3		
Optiphen (Actichem)	Phenoxyethanol, Caprylyl Glycol	1.00
Phase B—Add at 75°C		
Cetyl Alcohol (Protameen)	Cetyl Alcohol	1.50
Protachem CTG (Protameen)	Caprylic/Capric Triglyceride	1.00
Protachem ISP (Protameen)	Isostearyl Palmitate	2.00
Ceraphyl SLK (ISP)	Isodecyl Neopentanoate	3.00
Procetyl AWS (Croda)	PPG-5-Ceteth-20	1.00
Escalol 577 (ISP)	Octinoxate	2.50
Escalol 567 (ISP)	Benzophenone-3	3.00
Escalol 587 (ISP)	Ethylhexyl Salicylate	2.50
Phase C—Add at 55-60°C		
DC 245 Fluid (Dow Corning)	Cyclopentasiloxane	3.00
DC 200 Fluid 350 cst (Dow Corning)	Dimethicone	1.00
Phase D—Add at 55-60°C		
TEA 99%	Triethanolamine	0.40
SYNTRAN® PC 5227	Polyacrylate-15 (and) Polyacrylate-17	4.00
SYNTRAN® PC 5400	Ammonium Acrylates Copolymer	2.00
Phase E—Add at 45°C		
Fragrance	Fragrance	0.20
	YIELD:	100.00

pH 6.5 – 7.0

Procedure

Combine Phase A-1 ingredients and begin heating to 75°C. Premix Phase A-2 and add to A-1. Batch will thicken, adjust stirring to avoid aeration. At 75°C add Phase A-3. In a separate vessel add all Phase B ingredients, heat to 75°C until melted. Add Phase B to Phase A @ 75°C. Cool to 60°C. Individually add Phase C ingredients at 55-60°C. Homomix. Individually add Phase D ingredients at 55-60°C, stir between each addition until smooth and homogeneous. Cool slowly to 45°C, add Phase E. Adjust pH to 6.5-7.0 with TEA, if necessary. 1/07

In Vitro SPF = 20.6

SPF 20 SKIN MOISTURIZER

Formulation F-24-164

Elegant, rich formula containing patented olefin graft polymer technology designed to boost organic UV absorbers to perform at a level of SPF 20+. Superior moisturizing formula spreads easily and rubs in quickly. Satin smooth skin feel. Instantly makes dry skin more supple and hydrated. **SYNTRAN® PC 5227** also imparts enhanced moisturization, softness and unique rub-in and re-fattening qualities to skin.

	<u>INCI Designation</u>	<u>Weight %</u>
Phase A-1—Heat to 75°C		
Deionized Water	Water	52.70
Dissolvine Na2S (Akzo Nobel)	Disodium EDTA	0.10
Ultrez 10 (Noveon)	Carbomer	0.30
Phase A-2 – Add at 45°C		
Butylene Glycol	Butylene Glycol	3.00
Ticaxan Xanthan Gum NF (TIC Gum)	Xanthan Gum	0.25
Phase A-3—Add at 75°C		
Microcare PHG (Actichem)	Phenoxyethanol, Caprylyl Glycol	1.00
Phase B—Add at 75°C		
Cetyl Alcohol (Protameen)	Cetyl Alcohol	2.00
Protachem CTG (Protameen)	Caprylic/Capric Triglyceride	2.00
Finsolv G-2 (Finetex)	C15-17 Alkyl Benzoate	3.00
Procetyl AWS (Croda)	PPG-5-Ceteth-20	1.00
Escalol 557 (ISP)	Octinoxate	7.50
Escalol 567 (ISP)	Oxybenzone	5.00
Escalol 587 (ISP)	Octisalate	5.00
Crodafos CES (Croda)	Cetearyl Alcohol (and) Ceteth-10 Phosphate (and) Dicetyl Phosphate	2.00
Phase C-1—Add at 55°C		
DC 245 Fluid (Dow Corning)	Cyclopentasiloxane	4.00
DC 200 Fluid 350 cst (Dow Corning)	Dimethicone	3.00
Phase C-2—Add at 55°C		
TEA 99%	Triethanolamine	0.50
Tioveil FIN (Uniqema)	TiO ₂ Dispersion	1.50
SYNTRAN® PC 5227	Polyacrylate-15 (and) Polyacrylate-17	6.00
Phase D—Add at 45°C		
Fragrance	Fragrance	0.15
	YIELD:	100.00

Procedure

Combine Phase A-1 ingredients and begin heating to 45°C. Premix Phase A-2 and add to A-1 at 45°C. Batch will thicken, adjust stirring to avoid aeration. Continue heating to main vessel to 75°C. At 75°C add Phase A-3 ingredients. Stir until smooth and homogeneous. In a separate vessel add all Phase B ingredients and heat to 75°C until melted. Add Phase B to Phase A @ 75°C. Cool batch to 55°C, add Phase C-1 ingredients. Homomix batch until uniform. Individually add each Phase C-2 ingredient, stir between additions until batch is smooth and homogeneous. Cool batch to 45°C add Phase D. Adjust pH to 6.2 – 6.5

In Vitro = 24.8

05/07