

Moisturizing Lotion with Laurest<sup>®</sup> 1220 and Squalane

In this formulation, Laurest<sup>®</sup> 1220 acts as an emollient, emulsifier, and antimicrobial agent.

PHASE 1	<b>WT.</b> %
DI Water	78.20%
Disodium EDTA	0.80%
CARBOPOL <sup>®</sup> 940 <sup>1</sup>	0.20%
PHASE 2	<b>WT.</b> %
Laurest <sup>®</sup> 1220	12.50%
Jojoba Oil	2.00%
Glycerin	4.00%
Squalane	0.50%
Hexylene Glycol	0.80%
PEG-25 Hydrogenated Castor Oil	0.50%
PEG-40 Hydrogenated Castor Oil	0.50%

# **Procedure:**

- 1. Prepare Phase 1 by dissolving EDTA in water and then adding CARBOPOL® and disperse.<sup>1</sup>
- 2. In a separate container, prepare Phase 2 by adding ingredients in order of appearance and low-medium shear mixing.
- 3. Add Phase 2 to Phase 1 with medium shear mixing.

<sup>1</sup> CARBOPOL<sup>®</sup> is a registered trademark of the LUBRIZOL Advanced Materials, Inc. Corporation

About Copperhead Chemical Company<sup>®</sup>: Copperhead is a leading manufacturer of active pharmaceutical ingredients and specialty chemicals located in Tamaqua, PA USA. Copperhead is dedicated to quality and operates in accordance with Good Manufacturing Practice regulations enforced by the U.S. FDA. Contact information is as follows:

COPPERHEAD CHEMICAL COMPANY<sup>®</sup>

# Sales and Technical Support:

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# Cold Process Carbomer Lotion with Laurest<sup>®</sup> 1220

PHASE 1	<b>WT.</b> %
DI Water	78.00%
Disodium EDTA	0.10%
CARBOPOL <sup>®</sup> Ultrez 10 <sup>1</sup>	0.50%
PHASE 2	<b>WT.</b> %
Laurest <sup>®</sup> 1220	13.00%
Laurest <sup>®</sup> 1220 Capric/Caprylic Triglycerides	<b>13.00%</b> 5.00%
Capric/Caprylic Triglycerides	5.00%

# **Procedure:**

- 1. Phase 1, dissolve Disodium EDTA into water and add CARBOPOL® Ultrez 10 to disperse.<sup>1</sup>
- 2. In a separate container, combine ingredients in Phase 2 and mix.
- 3. With high shear mixing, slowly add Phase 2 to Phase 1. Mix.
- 4. Adjust pH to 6.5-7.0 with Citric Acid/NaOH.

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# Revitalizing Heel Cream with Laurest<sup>®</sup> 1220

PHASE 1	<b>WT.</b> %
DI Water	43.00%
Disodium EDTA	0.05%
CARBOPOL <sup>®</sup> Ultrez 10 <sup>1</sup>	0.70%
KLUCEL <sup>®</sup> HXF Pharm <sup>2</sup>	0.40%
PHASE 2	<b>WT.</b> %
Water	34.82%
NaOH (50%)	0.30%
UREA	5.00%
PHASE 3	<b>WT.</b> %
	<b>WT. %</b> 3.00%
PHASE 3	
PHASE 3 Stearic Acid	3.00%
PHASE 3 Stearic Acid Organic Unrefined Coconut Oil	3.00% 5.00%
PHASE 3         Stearic Acid       Organic Unrefined Coconut Oil         Cetyl Alcohol       Image: Cetyl Alcohol	3.00% 5.00% 1.80%
PHASE 3         Stearic Acid         Organic Unrefined Coconut Oil         Cetyl Alcohol         Glyceryl Stearate SE	3.00% 5.00% 1.80% 1.80%
PHASE 3         Stearic Acid         Organic Unrefined Coconut Oil         Cetyl Alcohol         Glyceryl Stearate SE         PHASE 4	3.00% 5.00% 1.80% 1.80% WT. %

# **Procedure:**

Phase 1: Heat water to 70°C and add other ingredients in the order listed. Mix with high shear until all ingredients are dispersed.

- Phase 2: In separate container, heat water to 70°C and add other ingredients in the order listed. Mix with low shear.
- Phase 3: In separate container, combine ingredients in the order listed and heat to 70°C to melt. Mix with low shear.
- Phase 4: In separate container, combine ingredients in the order listed and mix with low shear. Heat to 40°C.
- 1. With high shear mixing, add Phase 2 to Phase 3.
- 2. Add Phases 2/3 to Phase 1, homogenize.
- 3. Cool Phases 1/2/3 to 40°C and add Phase 4

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PHASE 1	<b>WT.</b> %
Water	44.00%
Xylitol	10.00%
Sorbitol (70%)	4.00%
Xanthan Gum	1.00%
SIDENT <sup>®</sup> Silicate 22s <sup>1</sup>	10.00%
PHASE 2	<b>WT.</b> %
Glycerin	20.00%
Sodium Tripolyphosphate	5.00%
Papain	0.50%
CREMOPHOR <sup>®</sup> RH 40 <sup>2</sup>	1.00%
Sodium Lauroyl Sarcosinate (30% solution)	1.00%
Laurest <sup>®</sup> 1220	3.00%
Mint/Flavor	QS

Phase 1: Combine the ingredients in the order listed at room temperature. Homogenize.

Phase 2: In a separate container, combine the ingredients listed in order of appearance at 40°C and mix with medium to high sheer mixing.

Add Phase 2 to Phase 1. Homogenize.

Laurest acts as a co-surfactant, emulsifier, and antimicrobial agent. Studies show that medium chain fatty acids such as those in Laurest may help prevent the overgrowth of certain bacteria in the oral cavity that cause plaque.

<sup>1</sup> SIDENT<sup>®</sup> is a registered trademark of the EVONIK DEGAUSS GMBH Limited Liability Company <sup>2</sup> CREMOPHOR<sup>®</sup> is a registered trademark of the BASF SE Corporation

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# Mouth Rinse Formulation with Laurest<sup>®</sup> 1220

PHASE 1	<b>WT.</b> %
Water	54.20%
Xylitol	0.40%
Dimethyl Isosorbide	4.00%
Glycerin	25.00%
Sorbitol	10.00%
PHASE 2	<b>WT.</b> %
CREMOPHOR <sup>®</sup> RH 40 <sup>1</sup>	2.00%
Laurest <sup>®</sup> 1220	4.00%
Mint/Flavor	QS

# **Procedure:**

- Phase 1: Combine ingredients in the order listed and mix with medium to high shear.
- Phase 2: Heat to 40°C to reduce viscosity of CREMOPHOR<sup>1</sup> and then combine ingredients in the order listed and mix with medium to high shear.

Add Phase 2 to Phase 1 slowly with high shear mixing.

<sup>1</sup> CREMOPHOR<sup>®</sup> is a registered trademark of the BASF SE Corporation

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# No-Bump Aftershave Lotion for Men with Laurest<sup>®</sup> 1220

PHASE 1	<b>WT.</b> %
Isopropyle Palmitate	1.50%
Capric/Caprylic Triglycerides	1.50%
Glyceryl Stearate SE	2.00%
Glycerin	4.00%
PHASE 2	<b>WT.</b> %
Water	75.04%
Disodium EDTA	0.06%
CARBOPOL <sup>®</sup> 940 <sup>1</sup>	0.70%
KLUCEL <sup>®</sup> HXF Pharm <sup>2</sup>	0.30%
SDA 40B	7.00%
Salicylic Acid	2.00%
Steareth 20	0.20%
PHASE 3	<b>WT.</b> %
Laurest <sup>®</sup> 1220	4.00%
Cucumber Extract	0.50%
Fragrance	0.20%
Polysorbate 80	1.00%
PHASE 4	<b>WT.</b> %
Sodium Hydroxide, 50%	QS

# Procedure:

Phase 1: Combine ingredients in the order listed and heat to melt to ~ 60°C with medium shear mixing.

Phase 2: In a separate container, add ingredients in Phase 2 in order of appearance, according to standard practice. Heat to around 40°C. Homogenize.

Phase 3: Combine and mix the ingredients in order of appearance with medium shear mixing.

Add Phase 2 to Phase 1, homogenize.

Add Phase 3 to newly combined Phases 1 & 2. Homogenize.

Phase 4: Adjust pH to 6.5-6.8 with sodium hydroxide solution.

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# Anti-Acne Topical Lotion with Laurest<sup>®</sup> 1220

PHASE 1	<b>WT.</b> %
DI Water	82.50%
Glycerin	2.00%
Salicylic Acid	3.00%
Laurest <sup>®</sup> 1220	3.00%
PHASE 2	<b>WT.</b> %
Sodium Hydroxide	QS
PHASE 3	<b>WT.</b> %
Cetearyl Alcohol	2.00%
Glyceryl Stearate	2.00%
Ceteareth-20	1.00%
Ceteareth-12	1.00%
PHASE 4	<b>WT.</b> %
COS MEDIA <sup>®</sup> Triple C (Polyquaternium-37 (and) Dicapryl Carbonate (and) Lauryl Glucoside) <sup>1</sup>	3.50%

# Procedure:

Phase 1: Combine all ingredients in Phase 1 and mix.

Phase 2: Adjust pH with sodium hydroxide until desired pH is met (3.5-4.5)

Add Phase 3, mix.

Add Phase 4 and mix until desired viscosity is reached. Add fragrance if desired.

<sup>1</sup> COS MEDIA<sup>®</sup> is a registered trademark of the COGNIS IP Management GMBH Corporation

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PHASE 1	<b>WT.</b> %
Cyclomethicone	70.00%
Zinc Ricinoleate	4.00%
Cetearyl Alcohol	10.00%
Safflower Oil	1.50%
Talc	2.50%
Starch	0.40%
Beeswax	4.00%
Microcrystalline Wax	3.50%
PHASE 2	<b>WT.</b> %
Laurest <sup>®</sup> 1220	2.50%
Fragrance (Perfume)	QS

Phase 1: Combine all ingredients in Phase 1 in a heat resistant vessel and heat to 75°C with mixing until uniform. Phase 2: Combine the ingredients in Phase 2 and add to Phase 1. Mix with blender or homogenizer. Pour hot into deodorant containers.

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Canine (Pet) Ear Wash with Cucumber Extract and Laurest<sup>®</sup> 1220

PHASE 1	<b>WT.</b> %
DI Water	QS
Disodium EDTA	0.05%
PHASE 2	<b>WT.</b> %
Plantapon SF <sup>1</sup>	18.00%
Cocamidapropyle Betaine	2.50%
Lamesoft PO <sup>2</sup>	1.50%
PEG 150 Distearate	1.00%
PHASE 3	<b>WT.</b> %
Laurest <sup>®</sup> 1220	QS
Cucumber Extract	0.50%
Polysorbate 80	1.50%
Fragrance	0.75%

# **Procedure:**

- Phase 1: Combine ingredients in Phase 1 and heat to 70°C. Mix until EDTA is completely dissolved.
- Phase 2: Add ingredients in Phase 2 to Phase 1. Mix at medium.
- Phase 3: In separate container, combine ingredients in Phase 3. Add Phase 3 ingredients to Phase 1 + Phase 2 ingredients.

pH between 6.5 - 7.5

<sup>1</sup>Plantapon<sup>®</sup>SF (BASF): Sodium Cocoamphoacetate (and) Glycerin (and) Lauryl Glucoside (and) Sodium Cocoyl Glutamate (and) Sodium Lauryl Glucose Carboxylate <sup>2</sup>Lamesoft<sup>®</sup> (BASF): Coco-Glucoside (and) Glyceryl Oleate

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# **Canine Leave On Ear Treatment**

(with Coconut Oil, Vegetable Glycerin, Sonnenatural<sup>®</sup> Meadowfoam Wax) and Laurest<sup>®</sup> 1220

# Phase 1WT. %Coconut Oil40.00%Laurest® 122015.00%Vegetable Glycerin15.00%Sonnenatural® Meadowfoam Wax115.00%

# **Procedure:**

Combine ingredients in the order that they appear.

Mix Well.

<sup>1</sup> ©2017 Sonneborn.

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# **Canine Leave On Ear Treatment**

(with Water and Methocellulose) Laurest<sup>®</sup> 1220

Phase 1	<b>WT.</b> %
Water	QS
Methocellulose	0.5 - 1.0%
Laurest <sup>®</sup> 1220	10.00 - 15.00%

# **Procedure:**

Disperse Methocellulose in water with high shear.

Add Laurest<sup>®</sup> 1220 and mix well.

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# **Canine Leave On Ear Treatment**

(with Vegetable Glycerin) Laurest<sup>®</sup> 1220

Phase 1	<b>WT.</b> %
Laurest <sup>®</sup> 1220	10.00 - 15.00%
Vegetable Glycerin	QS

# **Procedure:**

Combine ingredients and mix well.

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Phase 1	<b>WT.</b> %
Deionized Water	42.00%
Disodium EDTA	0.05%
Carbopol <sup>®</sup> 940 <sup>1</sup>	0.75%
Phase 2	<b>WT.</b> %
Water	34.20%
UREA	5.00%
Phase 3	<b>WT.</b> %
Organic Unrefined Coconut Oil	4.50%
Cetyl Alcohol	2.00%
Glyceryl Stearate SE	2.00%
Phase 4	<b>WT.</b> %
Laurest <sup>®</sup> 1220	5.00%
Benzyl Alcohol	0.50%
Eucalyptus/Peppermint EO	QS

Prepare Phase 1 by adding EDTA to water and then hydrating and dispersing Carbopol<sup>®</sup>. Heat to 70°C. In a separate container, prepare Phase 2 by combining UREA in water. Heat to 40°C. In a separate container, prepare Phase 3 by combining the ingredients and heating to 70°C. In a separate container, prepare Phase 4 by combining all ingredients and mixing. With high shear mixing, add Phase 2 to Phase 3. With high shear mixing, add Phase 1 to Phase 2+3 Cool to 40°C and add Phase 4 pH range >8.00 Viscosity

<sup>1</sup> Carbopol<sup>®</sup> is a registered trademark of the Lubrizol Corporation

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# Antifungal Animal Shampoo With Laurest<sup>®</sup> 1220

Phase 1	<b>WT.</b> %
DI Water	67.50%
Stepanol PB <sup>1</sup>	25.00%
Phase 2	<b>WT.</b> %
Laurest <sup>®</sup> 1220	6.00%
Benzalkonium Chloride	0.10%
Tea Tree Oil	0.50%

# Procedure:

Phase 1: Combine ingredients in Phase 1 with low shear mixing

Phase 2: Combine, in order, with mixing, Laurest<sup>®</sup> 1220 + Benzalkonium Chloride, then add Tea Tree Oil & Fragrance. Mix.

Add the ingredients in Phase 2 into Phase 1 with medium shear mixing. Add salt to desired viscosity.

<sup>1</sup> Stepanol<sup>®</sup> is a registered trademark of Stepan Company Ammonium Lauryl Sulfate, Ammonium Laureth Sulfate, Cocamide DEA, Cocamidopropyl Betaine, Glycol Stearate

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Clear Equine Conditioning Spray with Antifungal Properties with Laurest<sup>®</sup> 1220

Phase 1	<b>WT.</b> %
DI Water	90.31%
Disodium EDTA	0.10%
Phase 2	<b>WT.</b> %
Laurest <sup>®</sup> 1220	6.00%
Laurest <sup>®</sup> 1220 Benzalkonium Chloride	<b>6.00%</b> 0.10%

# Procedure:

- Phase 1: Add Disodium EDTA to DI water and mix until Disodium EDTA is completely dissolved.
- Phase 2: In separate container, combine the ingredients in Phase 2, in order of appearance. Mix to homogeneous.

Slowly add Phase 2 to Phase 1 with medium shear mixing.

<sup>1</sup> FS 102 may be substituted with Cremaphor

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Phase 1	<b>WT.</b> %
DI Water	82.71%
Disodium EDTA	0.04%
Carbopol <sup>1</sup> Ultrez 10	0.50%
Phase 2	<b>WT.</b> %
Laurest <sup>®</sup> 1220	10.00%
Capric/Caprylic Triglycerides	3.00%
Coconut Oil	3.50%
Tea Tree Oil	0.25%

Prepare Phase 1 by adding EDTA to water and mix. Add Carbopol to hydrate and disperse. Prepare Phase 2 by combining ingredients in the order they appear. Heat to 40°C. Add Phase 2 to Phase 1 with vigorous mixing or homogenization.

<sup>1</sup> Carbopol is a registered trademark of the Lubrizol<sup>®</sup> Corporation

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