Consumer Solutions

Formulation Information: Auto Care Applications

Anti-Fog Glass Cleaners

Formulation reference: GL-860

Products

- XIAMETER™ OFX-0193 Fluid
- XIAMETER™ OFX-5211 Fluid

Procedure

1. Mix Phase A ingredients until uniform.
2. Add this solution to Phase B.

Typical Properties / Additional Information

- The grease-removing power of this product may be slightly improved by adding a small amount of organic surfactant.

Description

This is a glass cleaner formulation that is excellent for cleaning automobile windshields, household windows, refrigerators, stove tops and kitchen counter surfaces. It removes grease and dirt and is easy to wipe off because of the lubricity provided by the silicone fluid. This formulation also provides anti-fog properties.

Ingredient	Wt. %	Trade Name / Supplier
Phase A		
1. XIAMETER™ OFX-0193 Fluid	0.5	The Dow Chemical Co.
2. XIAMETER™ OFX-5211 Fluid	1.0	The Dow Chemical Co.
3. DOWANOL™ PnB	4.0	The Dow Chemical Co.
4. Isopropanol	10	
Phase B		
5. Deionized Water	84.5	

Automotive Cream Wax — Durable Polish

Formulation reference: PW-301

Products

- XIAMETER™ PMX-200 Silicone Fluid, 100 cs
- XIAMETER™ PMX-200 Silicone Fluid, 1,000 cs
- XIAMETER™ OFX-0531 Fluid

Procedure

1. Place ingredient 1 in a vessel.
2. Add ingredient 2 to the main vessel at room temperature and stir until uniform.
3. Add ingredients 3 and 4 and heat to 65°C to reach the melting point.
4. Add ingredient 5 under agitation and cool to 35°C
5. Add ingredient 6 and stir for 10 minutes.
6. Add ingredients 7-12 under agitation in the listed order one at a time until uniform.
7. Add ingredient 13 and stir for 10 minutes more.

Typical Properties / Additional Information

- The fragrance provides a pleasant citric odor.
- For good results, apply the product in circles. Do one section at a time. When haze appears, buff with a soft and clean cloth or cotton.
- If paste-like consistency is required, the xanthan gum can be replaced with acrylic polymer Carbopol 941 from Lubrizol (Noveon division).

Description

This automotive cream wax was created and balanced with XIAMETER™ brand silicone fluids, resulting in a high-gloss and easy-to-apply product. The XIAMETER™ silicone fluids leave a soft film on a metallic surface. XIAMETER™ OFX-0531 Fluid adds long-lasting protection to the wax film. This wax is appropriate for consumers and professionals.

Ingredient	Wt. %	Trade Name / Supplier
1. Water	62	
2. Xanthan gum	0.3	
3. Stearic acid	2	
4. Polyethylene glycol stearate PEG 6000	1	Cutina DSP 6B/Cognis
5. Sodium hydroxide at 50%	0.4	
6. Kerosene	15	
7. Citric fragrance	0.2	D-Limonene
8. Carnauba wax emulsion at 50%	4	
9. XIAMETER™ PMX-200 Silicone Fluid, 100 cs	4	The Dow Chemical Co.
10. XIAMETER™ PMX-200 Silicone Fluid, 1,000 cs	2	The Dow Chemical Co.
11. XIAMETER™ OFX-0531 Fluid	1	The Dow Chemical Co.
12. Silicon dioxide 300#[1]	8	
13. Glutaraldehyde	0.1	The Dow Chemical Co.

[1]The silicon dioxide can be replaced with aluminum silicate 350# or 500# for better cleaning properties.

Automotive Cream Wax

Formulation reference: PW-303

Products

- XIAMETER™ PMX-200 Silicone Fluid, 100 cSt
- XIAMETER™ PMX-200 Silicone Fluid, 1,000 cSt
- XIAMETER™ OFX-0531 Fluid

Procedure

1. Place ingredient 1 in a vessel.
2. Add ingredient 2 to the main vessel at room temperature and stir until uniform.
3. Add ingredients 3 and 4 and heat to 65°C to reach the melting point.
4. Add ingredient 5 under agitation and cool to 35°C.
5. Add ingredient 6 and stir for 10 minutes.
6. Add ingredients 7-12 under agitation in the listed order one at a time until uniform.
7. Add ingredient 13 and stir for 10 minutes more.

Typical Properties / Additional Information

- For good results, apply the product in circles. Do one section at a time. When haze appears, buff with a soft and clean cloth or cotton.
- If paste-like consistency is required, the xanthan gum can be replaced with acrylic polymer Carbopol 941 from Lubrizol (Noveon division)

Description

This automotive cream wax was created and balanced with XIAMETER™ brand silicone fluids, resulting in a high-gloss and easy-to-apply product. In addition, this product exhibits cleaning and high wetting properties, leaving a soft film on the metallic surface. XIAMETER™ OFX-0531 Fluid adds long-lasting protection to the wax film. This wax is appropriate for consumers and professionals.

Ingredient	Wt. %	Trade Name / Supplier
1. Water	62	
2. Xanthan gum	0.3	
3. Stearic acid	2	
4. HallStar PEG 6000 DS	1	Hallstar
5. Sodium hydroxide at 50%	0.4	
6. Kerosene	15	
7. Fragrance	0.2	D-Limonene
8. Carnauba wax emulsion at 35%	4	
9. XIAMETER™ PMX-200 Silicone Fluid, 100 cs	4	The Dow Chemical Co.
10. XIAMETER™ PMX-200 Silicone Fluid, 1,000 cs	2	The Dow Chemical Co.
11. XIAMETER™ OFX-0531 Fluid	1	The Dow Chemical Co.
12. KAOPOLITE 1152	8	Kaopolite, Inc.
13. KATHON™ LX	0.1	The Dow Chemical Co.

Automotive Cream Wax for Professional Detailing

Formulation reference: PW-305

Products

- XIAMETER™ PMX-200 Silicone Fluid, 100 cSt
- XIAMETER™ PMX-200 Silicone Fluid, 1,000 cSt
- XIAMETER™ OFX-0531 Fluid
- XIAMETER™ OFS-6124 Silane

Procedure

1. Place ingredient 1 in a vessel.
2. Add ingredient 2 to the main vessel at room temperature and stir until uniform.
3. Add ingredients 3 and 4 and heat to 65°C to reach the melting point.
4. Add ingredient 5 under agitation and cool to 35°C.
5. Add ingredient 6 and stir for 10 minutes.
6. Add ingredients 7–11 under agitation in the listed order one at a time until uniform.
7. Add ingredients 12–14 under agitation until uniform.
8. Add ingredient 15 and stir for 10 minutes.

Typical Properties / Additional Information

This formulation was developed with the purpose to cover scratches on metallic surfaces.

- For good results, apply the product in circles. Do one section at a time. When haze appears, buff with a soft and clean cloth or cotton.
- If paste-like consistency is required, the xanthan gum can be replaced with acrylic polymer Carbopol 941 from Lubrizol (Noveon division).

Description

This colored, automotive cream wax was created and balanced with XIAMETER™ brand silicone fluids resulting in a high-gloss, durable, and easy-to-apply wax. In addition, this product exhibits cleaning and high wetting properties, leaving a soft film on the metallic surface. XIAMETER™ OFX-0531 Fluid adds long-lasting protection to the wax film. XIAMETER™ OFS-6124 Silane is added to fix the pigment on the metallic surface. This wax is appropriate for professionals.

Ingredient	Wt. %	Trade Name / Supplier
1. Water	62	
2. Xanthan gum	0.3	KELTROL F/CP Kelco
3. Stearic acid	2	
4. HallStar PEG 6000 DS	1	Hallstar
5. Sodium hydroxide at 50%	0.4	
6. Kerosene	15	
7. Carnauba wax emulsion at 35%	4	
8. XIAMETER™ PMX-200 Silicone Fluid, 100 cs	4	The Dow Chemical Co.
9. XIAMETER™ PMX-200 Silicone Fluid, 1,000 cs	2	The Dow Chemical Co.
10. XIAMETER™ OFX-0531 Fluid	1	The Dow Chemical Co.
11. XIAMETER™ OFX-6124 Silane	1	The Dow Chemical Co.
12. KAOPOLITE 1152	5.5	Kaopolite, Inc.
13. Pigment	0.1	
14. Titanium dioxide	1.6	
15. KATHON™ LX	0.1	The Dow Chemical Co.

Cockpit Enhancers — Aerosol Product

Formulation reference: IP-501

Products

- XIAMETER™ PMX-200 Silicone Fluid, 350 cSt
- XIAMETER™ PMX-200 Silicone Fluid, 1,000 cSt

Procedure

Mix the ingredients in the order listed with-low speed stirring. Approximately 70% by weight of this formulation would be used in an aerosol with the remaining 30% being propellant.

Typical Properties / Additional Information

Suggestion for adjusting the formulation:

- To increase the gloss/color, increase ratio of XIAMETER™ PMX-200 Silicone Fluid, 1,000 cSt to XIAMETER™ PMX-200 Silicone Fluid, 350 cSt; or incorporate 2% XIAMETER™ PMX-200 Silicone Fluid, 12,500 cSt.
- To provide a drier film, incorporate 3% DOWSIL™ 2-1912 Fluid or DOWSIL™ RSN-9118 Resin and reduce level of other silicones by 1% each.

Description

This formulation provides an easy-to-apply product featuring silicones that give good gloss/color and that help mask light scratches.

Ingredient	Wt. %	Trade Name / Supplier
1. Low aromatic solvent 160/190°C	10.0	Exxon D40/ Exxon Chemical Co.
2. Heptane	68.0	KELTROL F/CP Kelco
3. XIAMETER™ PMX-200 Silicone Fluid, 350 cs	3.5	The Dow Chemical Co.
4. XIAMETER™ PMX-200 Silicone Fluid, 1,000 cs	3.5	The Dow Chemical Co.
5. Isopar G	15.0	Exxon Chemical Co.

Please read *Guidance for Aerosol Applications of Silicone-Based Materials* from the Silicones Environmental, Health and Safety Council of North America (SEHSC) at sehsc.com/science.asp.

Cockpit Enhancers — Sheen Finish

Formulation reference: IP-610

Products

- XIAMETER™ MEM-1473 Emulsion

Procedure

Mix the ingredients in the order listed at low stirring speed.

Description

This cockpit enhancer uses a silicone emulsion at low dosage. It incorporates a wax emulsion with large particle size, which gives uneven light reflection. The result is a perceived lower gloss finish. This is important for light reflection control on treated surfaces, e.g., dashboards, that can distract the driver from the road.

Ingredient	Wt. %	Trade Name / Supplier
1. Water	88.0	
2. XIAMETER™ MEM-1473 Emulsion	6.0	The Dow Chemical Co.
3. Microspersion 250	5.0	Kromachem Ltd.
4. Cellulose thickener	1.0	The Dow Chemical Co.

Cream Tire Dressing with XIAMETER™ MEM-1171 Emulsion

Formulation reference: TP-740

Products

- XIAMETER™ MEM-1171 Emulsion
- XIAMETER™ MEM-1101 Emulsion
- XIAMETER™ MEM-8035 Emulsion

Procedure

1. Put the water into the main vessel and begin mixing at low speed. Slowly add the carbomer and mix under high shear until all powder has been wetted, approximately 30 minutes. Add the carbomer slowly to avoid the formation of lumps.
2. When all the carbomer has been hydrated, add XIAMETER™ MEM-1171 Emulsion, XIAMETER™ MEM-1101 Emulsion and XIAMETER™ MEM-8035 Emulsion to the main vessel while mixing.
3. Add the triethanolamine and preservative. Stir for another 30 minutes.
4. Pour down and package.

Typical Properties / Additional Information

- To improve gloss, increase the amount of XIAMETER™ MEM-1101 Emulsion.
- Explore different levels of gloss using DOWSIL™ HV 495 Emulsion with XIAMETER™ MEM-1101 Emulsion.

Description

This formulation produces a thick cream tire dressing based on XIAMETER™ MEM-1171 Emulsion. XIAMETER™ MEM-1171 Emulsion is low odor and high solids. XIAMETER™ MEM-1101 Emulsion adds shine, while XIAMETER™ MEM-8035 Emulsion improves durability.

Ingredient	Wt. %	Trade Name / Supplier
1. Water	58.85	
2. Carbomer	0.60	Carbopol Ultrez 10 / Lubrizo
3. XIAMETER™ MEM-1171 Emulsion	32.0	The Dow Chemical Co.
4. XIAMETER™ MEM-1101 Emulsion	4.0	The Dow Chemical Co.
5. XIAMETER™ MEM-8035 Emulsion	3.5	The Dow Chemical Co.
6. Triethanolamine	1.1	
7. KATHON LX	0.05	The Dow Chemical Co.

Dry Washer

Formulation reference: CW-140

Products

- XIAMETER™ MEM-0039 Emulsion
- XIAMETER™ OFS-6124 Silane

Procedure

1. Add ingredient 2 to ingredient 1 in the main vessel.
2. When completely dispersed, add ingredient 3 and stir for 10 minutes.
3. Add ingredients 4 and 5 and stir for 10 minutes.
4. Add ingredient 6 and stir for 10 minutes.
5. Add ingredient 7 and stir for 10 minutes.
6. Add ingredient 8 and stir for 10 minutes.

Typical Properties / Additional Information

Directions: Apply the final product with a soft cloth or cotton wool over dust or grime with circular movements, one small area at a time. Remove the product with a dry and clean cloth.

Do not apply this product over sand-covered surfaces.

The ethanol helps to clean the surface and ensures the compatibility of XIAMETER™ OFS-6124 Silane in the formulation.

The ethanol may be replaced by isopropanol.

The final formulation will have a pH between 8.0-9.5 because of the presence of the sodium ricinoleate. The xanthan gum helps to stabilize the formulation

Description

This formulation exhibits the dual function of cleaning and adding shine to automotive metallic surfaces. XIAMETER™ MEM-0039 Emulsion provides gloss and XIAMETER™ OFS-6124 Silane ensures an excellent adherence factor, making it more resistant and shiny and providing surface cleaning with no water.

Ingredient	Wt. %	Trade Name / Supplier
1. Water	90.2	
2. Xanthan gum	0.5	KELTROL F/CP Kelco
3. XIAMETER™ MEM-0039 Emulsion	3.0	The Dow Chemical Co.
4. Ethanol	3.0	
5. Sodium ricinoleate at 35%	2.0	
6. XIAMETER™ OFS-6124 Silane	1.0	The Dow Chemical Co.
7. Aluminum silicate 500 #	0.2	
8. Glutaraldehyde	0.1	

Exterior Plastic / Rubber Enhancers — Aerosol Product

Formulation reference: EP-410

Products

- XIAMETER™ PMX-200 Silicone Fluid, 60,000 cSt
- DOWSIL™ RSN-9118 Resin

Procedure

Mix the ingredients listed with low-speed stirring.

Typical Properties /Additional Information

Approximately 70% by weight of this formulation would be used in an aerosol with the remaining 30% serving as propellant.

- To improve durability, increase the level of DOWSIL™ RSN-9118 Resin.
- Replace DOWSIL™RSN-9118 Resin with DOWSIL™ 2-1912 Fluid

Description

Blending a silicone fluid with a silicone resin shows excellent gloss/color with durability. Spray application makes for a very quick process.

Ingredient	Wt. %	Trade Name / Supplier
1. Low aromatic solvent 160/190°C	10.0	Exxon Chemicals Ltd. / Shell Chemicals Ltd.
2. Heptane	62.5	Exxon Chemicals Ltd. / Shell Chemicals Ltd.
3. XIAMETER™ PMX-200 Silicone Fluid, 60,000 cSt	10.0	The Dow Chemical Co.
4. DOWSIL™ RSN-9118 Resin	2.5	The Dow Chemical Co.
5. Isopar G	15.0	Exxon Chemicals Ltd.

Please read *Guidance for Aerosol Applications of Silicone-Based Materials* from the Silicones Environmental, Health and Safety Council of North America (SEHSC) at sehsc.com/science.asp.

Exterior Plastic / Rubber Enhancers — Gel

Formulation reference: EP-420

Products

- XIAMETER™ PMX-200 Silicone Fluid, 12,500 cSt
- XIAMETER™ OFX-0536 Fluid

Procedure

Mix the ingredients in the order listed above with low-shear stirring.

Typical Properties / Additional Information

Suggestions for adjusting the formulation:

- To increase the color intensity, substitute XIAMETER™ PMX-200 Silicone Fluid, 60,000 cSt, for XIAMETER™ PMX-200 Silicone Fluid, 12,500 cSt.
- To improve durability, increase the level of XIAMETER™ OFX-0536 Fluid and/or incorporate DOWSIL™ RSN-9118 Resin.

Description

The thick gel consistency of this formulation enables accurate application to trim areas only. The silicone fluid gives excellent gloss and color, while the amino-functional silicone fluid provides durability.

Ingredient	Wt. %	Trade Name / Supplier
1. Low aromatic solvent 160/190°C	83.3	Exxon Chemicals Ltd. / Shell Chemicals Ltd.
2. CAB-O-SIL EH-5	8.7	Cabot Corp.
3. XIAMETER™ PMX-200 Silicone Fluid, 12,500 cSt	6.0	The Dow Chemical Co.
4. XIAMETER™ OFX-0536 Fluid	2.0	The Dow Chemical Co.

Exterior Plastic / Rubber Enhancers — Liquid

Formulation reference: EP-403

Products

- XIAMETER™ MEM-8035 Emulsion
- DOWSIL™ HV 495 Emulsion

Procedure

1. Add ingredients 1–3 in the order listed to an appropriate vessel,while mixing at low speed.
2. Slowly add ingredient 4 to the vessel. Mix for 30 minutes, or until the product is completely dissolved and no lumps are present.

Typical Properties / Additional Information

Suggestions for adjusting the formulation:

- To improve leveling, add XIAMETER MEM-0062 Emulsion PS or XIAMETER™ MEM-0349 Emulsion or XIAMETER™ MEM-0346 Emulsion.
- To improve wetting, add 0.5% of XIAMETER™ OFX-5211 Superwetting Agent or XIAMETER™ OFX-0309 Fluid.

Description

The combination of an amino-functional silicone fluid and a high-viscosity silicone fluid gives a durable film to restore faded bumpers and other trim. Reducing the thickener level enables the product to be packaged in a spray dispenser.

Ingredient	Wt. %	Trade Name / Supplier
1. Water	83.3	
2. XIAMETER™ MEM-8035 Emulsion	5.7	The Dow Chemical Co.
3. DOWSIL™ HV 495 Emulsion	10.0	The Dow Chemical Co.
4. Cellulose thickener	1.0	Ashland Inc.

Exterior Plastic / Rubber Enhancers — Sheen Finish

Formulation reference: EP-404

Products

- XIAMETER™ MEM-8035 Emulsion
- XIAMETER™ MEM-0062 Emulsion PS

Procedure

1. Add ingredients 1–4 into an appropriate vessel. Mix at low speed.
2. Slowly add ingredients 5 and 6. Mix until product is homogeneous.

Typical Properties / Additional Information

Suggestions for adjusting the formulation:

- To lower the color intensity, substitute XIAMETER™ MEM-0349 Emulsion or XIAMETER™ MEM-0346 Emulsion for XIAMETER™ MEM-0062 Emulsion PS.
- To give a lower gloss finish, partially replace XIAMETER™ MEM-0062 Emulsion PS with wax emulsion.
- To improve durability, increase the level of XIAMETER™ MEM-8035 Emulsion and decrease the level of XIAMETER™ MEM-0062 Emulsion PS.

Description

This product provides a matte, leather-like appearance to exterior surfaces. Incorporation of a wax emulsion will promote uneven reflection of light, giving a perceived lower gloss finish. An emulsion of a lower viscosity polydimethylsiloxane base polymer will give less color intensity.

Ingredient	Wt. %	Trade Name / Supplier
1. Water	83.3	
2. XIAMETER™ MEM-8035 Emulsion	5.0	The Dow Chemical Co.
3. XIAMETER™ MEM-0062 Emulsion PS	8.0	The Dow Chemical Co.
4. Wax emulsion	6.0	Michem Lube 155 / Michelman Inc.
5. Acrylic thickener	0.4	
6. Triethanolamine	0.2	

Fabric Water Repellent

Formulation reference: IP-570

Products

- DOWSIL™ FBL-0563 Formulated Blend

Procedure

1. Blend water repellent with solvent.

Typical Properties / Additional Information

- This product could also serve as a concentrate for an aerosol and be used at a level of 80% with 20% propellant.
- Solvents should be free of moisture to ensure maximum shelf life.
- Alternative solvents, such as aliphatic hydrocarbons, may be used.

Description

This formulation is an excellent water repellent treatment for items such as automotive upholstery and carpet. It may also be used to treat rainwear, snowsuits, mittens, footwear and upholstery materials.

Ingredient	Wt. %	Trade Name / Supplier
1. DOWSIL™ FBL-0563 Formulated Blend	5.0	The Dow Chemical Co.
2. Isopar G Solvent	95.0	Exxon Corp.

Please read *Guidance for Aerosol Applications of Silicone-Based Materials* from the Silicones Environmental, Health and Safety Council of North America (SEHSC) at sehsc.com/science.asp.

Final Rinse Formula for Automatic Car Wash (Concentrate)

Formulation reference: RA-210

Products

- XIAMETER™ PMX-0245 Cyclopentasiloxane
- XIAMETER™ OFX-3667 Fluid

Procedure

1. Add Phase A ingredients in the order shown under low-shear mixing.
2. Add water under low shear. The final mixture should be transparent.

Description

This formulation can be used for the final rinse cycle for automatic car wash systems. The silicone ingredient provides water sheeting and quicker runoff. A dilute solution is sprayed on the vehicle after cleaning, with blowers aiding removal of water droplets.

The concentrate product is diluted with water 50:1 at the car wash facility. The product/water mixture is diluted further 6:1 to 10:1 while spraying through the car wash machinery.

Ingredient	Wt. %	Trade Name / Supplier
Phase A		
1. XIAMETER™ PMX-0245 Cyclopentasiloxane	10.0	The Dow Chemical Co.
2. DOWANOL™ DPNP	10.0	The Dow Chemical Co.
3. XIAMETER™ OFX-3667 Fluid	10.0	The Dow Chemical Co.
4. Tomamine Emulsifier Four[1]	20.0	Air Products, Inc.
Phase B		
5. Water	50.0	

[1]Contact Air Products, Inc., (www.airproducts.com) to obtain information on this product.

Glass Care — Cleaner

Formulation reference: GL-810

Products

- XIAMETER™ OFX-0193 Fluid

Procedure

Mix the ingredients in the order listed with low-speed stirring.

Typical Properties / Additional Information

Suggestions for adjusting the formulation:

At higher levels of incorporation, XIAMETER™ OFX-0193 Fluid can provide an anti-mist property.

Description

This is a cleaning product for removing grease and dirt from windows. The silicone surfactant aids spreadability and also provides temporary anti-mist properties without smearing.

Ingredient	Wt. %	Trade Name / Supplier
1. Water	84.7	
2. DOWANOL™ DPM	5.0	The Dow Chemical Co.
3. XIAMETER™ OFX-0193 Fluid	0.3	The Dow Chemical Co.
4. Isopropanol	10	

Glass Care — Screenwash

Formulation reference: GL-802

Products

- XIAMETER™ OFX-0193 Fluid

Procedure

Mix the ingredients in the order listed with low-speed stirring.

Typical Properties / Additional Information

Suggestions for adjusting the formulation:

- The level of XIAMETER™ OFX-0193 Fluid should be adjusted depending on the dilution ratio recommended for the product to optimize wetting.

Description

This silicone surfactant enables rapid coverage of the windscreen promoting contact between road traffic film and the solution.

Ingredient	Wt. %	Trade Name / Supplier
1. Water	68.5	
2. Crodasinic LS35	0.5	Croda, Inc.
3. DOWSIL™ DPM	2.0	The Dow Chemical Co.
4. DOWSIL™ PM	3.0	The Dow Chemical Co.
5. Propylene glycol	5.0	
6. XIAMETER™ OFX-0193 Fluid	1.0	The Dow Chemical Co.
7. Isopropanol	20.0	

Glass Cleaner with Ammonia and Citric Glass Cleaner

Formulation reference: GL-840

Products

- XIAMETER™ OFX-0193 Fluid

Procedure

Mix the ingredients in the order listed with low-speed stirring.

Typical Properties / Additional Information

- The ammonia in formulation **A** acts as a degreaser and the D-Lemonene in formulation **B** adds a pleasant citric odor.

Description

These automotive glass cleaners are easy to wipe off because of the lubricity provided by XIAMETER™ OFX-0193 Fluid.

Ingredient	Wt. %		Trade Name / Supplier
	A	B	
1. Water	66.2	66.3	
2. Isopropanol	10.0	10.0	
3. Ethanol	20.0	20.0	
4. Propylene glycol n-butyl ether	3.0	3.0	DOWANOL™ PnB/ The Dow Chemical Co.
5. XIAMETER™ OFX-0193 Fluid	0.5	0.5	The Dow Chemical Co.
6. Ammonia	0.3	-	
7. D-Lemonene	-	0.2	

High-Gloss Automotive Cream Wax for Professional Detailing

Formulation reference: GL-802

Products

- XIAMETER™ PMX-200 Silicone Fluid, 100 cSt
- DOWSIL™ 3037 Intermediate
- XIAMETER™ OFX-0531 Fluid

Procedure

1. Place ingredient 1 in a vessel.
2. Add ingredient 2 to the vessel at room temperature and stir until uniform.
3. Add ingredients 3 and 4 and heat to 65°C to reach the melting point.
4. Add ingredient 5 under agitation and cool to 35°C.
5. Add ingredient 6 and stir for 10 minutes.
6. Add ingredients 7–11 under agitation in the listed order one at a time until uniform.
7. Add ingredient 12 and stir for 10 minutes more.

Typical Properties / Additional Information

- For good results, apply the product in circles. Do one section at a time. When haze appears, buff with a soft and clean cloth or cotton.
- If paste-like consistency is required, the xanthan gum can be replaced with acrylic polymer Carbopol 941 from Lubrizol (Noveon division).

Description

This automotive cream wax was created and balanced with XIAMETER™ brand silicone fluids resulting in a high-gloss, durable, and easy-to-apply wax. In addition, this product exhibits cleaning and high-wetting properties leaving a soft film on a metallic surface. XIAMETER™ OFX-0531 Fluid adds long-lasting protection to the wax film. DOWSIL™ 3037 Intermediate is a phenyl resin that provides outstanding and persistent shine. This formula is appropriate for professionals.

Ingredient	Wt. %	Trade Name / Supplier
1. Water	62.2	
2. Xanthan gum	0.3	KELTROL F/CP Kelco
3. Stearic acid	2.0	
4. HallStar PEG 6000 DS	1.0	Hallstar
5. Sodium hydroxide at 50%	0.4	
6. Kerosene	15.0	
7. Carnauba wax emulsion at 35%	4.0	
8. XIAMETER™ PMX-200 Silicone Fluid, 100 cSt	4.0	The Dow Chemical Co.
9. DOWSIL™ 3037 Intermediate	2.0	The Dow Chemical Co.
10. XIAMETER™ OFX-0531 Fluid	1.0	The Dow Chemical Co.
11. KAOPOLITE 1152	8.0	Kaopolite, Inc.
12. KATHON™ LX	0.1	The Dow Chemical Co.

Low-VOC Polish

Formulation reference: PW-400

Products

- XIAMETER™ PMX-0245 Cyclopentasiloxane
- XIAMETER™ OFX-0531 Fluid
- XIAMETER™ OFX-0536 Fluid

Procedure

1. Load Phase A ingredients in the order shown into a vessel and mix well.
2. Mix Phase B ingredients in a separate container.
3. Add Phase B to the production vessel and mix well.
4. Add Phase C ingredients to the production vessel and mix well.

Typical Properties / Additional Information

- After Phase A mixing, the material forms a thick paste emulsion.
- After Phase B mixing, the material is a similar thick paste emulsion.
- After Phase C mixing, the alcohols activate Bentone 38 Thickener. Polish continues to thicken over several days.
- Ensure high-flow (turnover) mixing exists to prevent the abrasive from settling at the vessel bottom. If agitation is stopped on the mixing vessel during Phase A or Phase B, KAOPOLITE XDA Abrasive will settle to the bottom.

Observe precautions for handling XIAMETER™ products as indicated on the safety data sheets.

Description

This polish is a detergent-resistant cleaner designed for automotive surfaces. The product exhibits little phase separation and provides easy rub-out, excellent gloss, very good durability and resistance to detergent washings.

Solvent was replaced with a VOC-exempt silicone solvent, XIAMETER™ PMX-0245 Cyclopentasiloxane, to target a VOC level of 14% for this formula as defined by California A.R.B.

This formula passes five cycles of freeze/thaw stability testing.

Ingredient	Wt. %	Trade Name / Supplier
Phase A		
1. DI water	59.0	
2. KAOPOLITE XDA	6.6	Kaopolite, Inc.
3. KAOPOLITE 1152	3.4	Kaopolite, Inc.
4. Amadol (Witcamide) WE	1.0	Akzo Nobel
5. Kerosene/mineral spirits	3.5	
6. XIAMETER™ PMX-0245 Cyclopentasiloxane (VOC-exempt)	11.0	The Dow Chemical Co.
7. Sodium chloride	1.0	
Phase B		
8. Kerosene/mineral spirits	7.24	
9. BENTONE 38 Thickener	0.6	Rheox, Inc.
Phase C		
10. XIAMETER™ OFX-0531 Fluid	5.5	The Dow Chemical Co.
11. XIAMETER™ OFX-0536 Fluid	1.0	The Dow Chemical Co.
12. Isopropanol	0.15	

Pre-Softened Polymer Sealant Paste

Formulation reference: PW-375

Products

- XIAMETER™ OFX-0536 Fluid
- XIAMETER™ OFX-0531 Fluid
- XIAMETER™ PMX-200 Silicone Fluid, 350 cSt

Procedure

1. Place ingredients 1–3 into an appropriate vessel and heat to 45°C with low-shear mixing. Maintain the temperature at 40–45°C and add ingredients 4–6.
2. In the main vessel, add ingredients 7–9 and mix with low shear until dispersed while heating to 50°C.
3. Add ingredients 10 and 11 under low shear. Mix until all ingredients are dispersed, approximately 45 minutes.
4. Add Phase A to Phase B under high shear. Cool to filling temperature.

Typical Properties / Additional Information

Suggestions for adjusting the formulation:

- To improve gloss, incorporate 0.5–1.0% XIAMETER™ PMX-200 Silicone Fluid, 1,000 cSt.
- To improve ease of use, increase level of XIAMETER™ PMX-200 Silicone Fluid, 350 cSt, to 1.5%.
- To improve color intensity, incorporate 0.2–0.5% XIAMETER™ PMX-200 Silicone Fluid, 12,500 cSt.
- To improve gloss, ease of use, and color, incorporate XIAMETER™ PMX-200 Silicone Fluid, 350 cSt; XIAMETER™ PMX-200 Silicone Fluid, 1,000 cSt; and XIAMETER™ PMX-200 Silicone Fluid, 12,500 cSt in a ratio of 3:1:1 at 1% total level

Description

This formulation gives good detergent resistance by incorporation of amino-functional silicones and wax, while the fluid aids application characteristics.

Ingredient	Wt. %	Trade Name / Supplier
Phase A		
1. Low aromatic solvent 160/190°C	10.0	Exxsol D40/ Exxon Chemical Co.
2. Low aromatic solvent 200/250°C	12.0	Exxsol D40/ Exxon Chemical Co.
3. Carnauba wax	3.0	
4. XIAMETER™ OFX-0536 Fluid	2.0	The Dow Chemical Co.
5. XIAMETER™ OFX-0531 Fluid	3.0	The Dow Chemical Co.
6. XIAMETER™ PMX-200 Silicone Fluid, 350 cSt	0.8	The Dow Chemical Co.
Phase B		
7. Water	54.4	
8. Alcan SF7	8.0	Alcan Inc.
9. Celite Super Floss	4.2	Celite Corp.
10. BIO-SOFT N1-7	1.5	Stepan Co.
11. Hydroxyethyl cellulose thickener	1.0	Ashland Inc.

Protective Shampoo

Formulation reference: CW-102

Products

- XIAMETER™ MEM-8035 Emulsion
- XIAMETER™ PMX-200 Silicone Fluid, 350 cSt

Procedure

1. Put Phase A ingredients into the main vessel. Heat to 70°C with low-shear mixing.
2. In a separate vessel, load ingredients 4 and 5. Heat to 70°C, then add ingredients 6 and 7 while mixing at low shear.
3. Add Phase B to Phase A with high shear. Start cooling to room temperature.
4. Add the Phase C ingredient slowly and mix until dissolved, approximately 45 minutes.

Typical Properties / Additional Information

Suggestions for adjusting the formulation:

- To improve color, incorporate XIAMETER™ PMX-200 Silicone Fluid, 12,500 cSt, at 0.5%.
- To improve gloss, substitute XIAMETER™ PMX-200 Silicone Fluid, 1,000 cSt, for XIAMETER™ PMX-200 Silicone Fluid, 350 cSt.
- To improve durability, reduce the level of XIAMETER™ PMX-200 Silicone Fluid, 350 cSt, to 0.6% and the emulsifier level to 0.8%

Description

This formulation produces a product that is an intermediate between a standard shampoo and a polish that enhances gloss and provides a longer-lasting protective silicone film. The product can be applied the same as normal shampoo, or it can be poured directly onto a water-soaked sponge and wiped over a surface.

Ingredient	Wt. %	Trade Name / Supplier
Phase A		
1. Water	60.0	
2. BIO-SOFT N1-7	1.0	Stepan Co.
3. XIAMETER™ MEM-8035 Emulsion	2.5	The Dow Chemical Co.
Phase B		
4. Low aromatic solvent 160/190°C	30.0	Exxsol D40 / Exxon Chemicals Ltd.
5. Carnauba wax	1.5	
6. XIAMETER™ PMX-200 Silicone Fluid, 350 cSt	1.0	The Dow Chemical Co.
7. Pine oil	1.0	
Phase C		
8. Hydroxyethyl cellulose thickener	0.8	Ashland Inc.

Shampoo for Use in Professional Detailing

Formulation reference: CW-150

Products

- XIAMETER™ OFS-6124 Silane

Procedure

1. Add ingredient 2 to ingredient 1 in the main vessel and stir until the solution is transparent and viscous.
2. Add ingredient 3 and stir for 10 minutes.
3. Slowly add ingredient 4 and stir for 10 minutes.
4. Add ingredients 5 and 6 and stir for 20 minutes.
5. Check the pH. It should be between 6.5 and 7.5. Use ingredient 3 or 4 to correct the pH, if necessary.
6. Add ingredient 7 and stir for 10 minutes.
7. Add ingredients 8 and 9 and stir for 15 minutes.
8. Add ingredient 10 and stir for 10 minutes more.

Typical Properties / Additional Information

Directions: In a shaded area, apply a 10% dilution of the final product on a cold metallic surface with a soft sponge. The resulting foam should be left for 2 minutes and then removed with water. Dry the vehicle with a soft towel.

Description

This is an automotive shampoo that stands out among similar products because XIAMETER™ OFS-6124 Silane, in addition to providing excellent grime and grease removal, imparts shine and adheres to metal surfaces.

Ingredient	Wt. %	Trade Name / Supplier
1. Water	88.4	
2. Hydroxyethyl cellulose	0.4	CELLOSIZE QP 100 M H/ The Dow Chemical Co.
3. Sulfonic acid	5.0	
4. Sodium hydroxide at 50%	0.6	
5. Triethanolamine	0.5	
6. Cocamide DEA	1.0	
7. Dioctyl succinate at 70%	2.0	
8. Isopropanol	1.0	
9. XIAMETER™ OFS-6124 Silane	1.0	The Dow Chemical Co.
10. Glutaraldehyde	0.1	

pH at 10% dilution: 6.5-7.5

Solvent-Free Polish

Formulation reference: PW-385

Products

- XIAMETER™ PMX-0246 Cyclohexasiloxane
- XIAMETER™ MEM-0349 Emulsion
- XIAMETER™ MEM-0346 Emulsion
- XIAMETER™ MEM-8035 Emulsion

Procedure

1. Mix ingredients 1–4 in an appropriate vessel under high shear.
2. Add ingredients 5–7 to the vessel with high shear.
3. Slowly add ingredient 8 while mixing. Continue to mix for 30 minutes; or until the thickener is dissolved and the product is uniform.
4. Add ingredients 9 and 10 to the above, continuing to mix for an additional 10 minutes.

Typical Properties / Additional Information

Suggestions for adjusting the formulation:

- To improve gloss, incorporate XIAMETER™ MEM-0062 Emulsion PS at 0.5%; reduce XIAMETER™ MEM-0349 Emulsion or XIAMETER™ MEM-0346 Emulsion to 0.5%.
- To improve durability, increase XIAMETER™ MEM-8035 Emulsion to 2.0% and the wax emulsion to 5.1%.

Description

This formulation incorporates a range of silicone emulsions of fluid/amino/wax to provide properties that were achievable historically with solvent-based technologies.

Ingredient	Wt. %	Trade Name / Supplier
1. Water	60.0	
2. BIO-SOFT N1-7	1.0	Stepan Co.
3. XIAMETER™ PMX-0246 Cyclohexasiloxane	2.5	The Dow Chemical Co.
4. Water	30.0	The Dow Chemical Co.
5. XIAMETER™ MEM-0349 Emulsion or XIAMETER™ MEM-0346 Emulsion	1.5	
6. XIAMETER™ MEM-8035 Emulsion	1.0	The Dow Chemical Co.
7. Wax emulsion	1.0	Michem Lube 155 / Michelman Inc.
8. Hydroxyethyl Cellulose Thickener	0.8	Ashland Inc.
9. Celite Super Floss	1.0	Celite Corporation
10. Alcan SF7	0.8	Ashland Inc.

Spray-and-Wipe Polish

Formulation reference: PW-306

Products

- XIAMETER™ MEM-0349 Emulsion
- XIAMETER™ MEM-0346 Emulsion

Procedure

1. Blend Phase B ingredients (thickening water first) until uniform.
2. Add Phase A ingredients and mix until uniform.
3. Add Phase C ingredient and mix lightly until uniform.

Typical Properties / Additional Information

- To improve durability, add XIAMETER™ MEM-8035 Emulsion at 2–3%.
- Other gum thickeners may be used.

Description

This is a no-wax spray-and-wipe polish formulation designed to provide good gloss to an automotive surface. The product has good application ease and rub-out with limited durability.

Ingredient	Wt. %	Trade Name / Supplier
Phase A		
1. XIAMETER™ MEM-0349 Emulsion or XIAMETER™ MEM-0346 Emulsion	6.00	The Dow Chemical Co.
Phase B		
2. Water	90.00	
3. VEEGUM Pro	0.80	R.T. Vanderbilt Co.
4. KAOPOLITE AB	0.20	Kaopolite, Inc.
Phase C		
5. KAOPOLITE SF	3.00	Kaopolite, Inc.

Standard Shampoo

Formulation reference: CW-101

Products

- XIAMETER™ MEM-8035 Emulsion
- XIAMETER™ OFX-0193 Fluid

Procedure

1. Dissolve ingredient 1 in ingredient 2. Add Phase B ingredients with low-speed mixing until fully dispersed.
2. Sprinkle in the Phase C ingredient and mix until completely dissolved, approximately 60 minutes.
3. Pour down and package appropriately.

Typical Properties / Additional Information

Suggestions for adjusting the formulation:

- To improve gloss and color, add DOWSIL™ HV 495 Emulsion at 1.0%.

Description

The silicone surfactant provides wetting effects, while the amino-functional silicone can deposit onto the surface to enhance the polish film for gloss/water repellency.

Ingredient	Wt. %	Trade Name / Supplier
Phase A		
1. Sodium lauryl ethoxy sulfate	10.0	Rhodapex ESB 70 FEA/ Rhodia Inc
2. Soft water	78.7	
Phase B		
3. MAKON TD-12	5.5	Stepan Co.
4. Coconut diethanolamide	3.5	NINOL 49-CE / Stepan Co.
5. XIAMETER™ MEM-8035 Emulsion	1.5	The Dow Chemical Co.
6. XIAMETER™ OFX-0193 Fluid	0.3	The Dow Chemical Co.
Phase C		
7. Hydroxyethyl cellulose thickener	0.5	Ashland Inc.

Tire Enhancer Foam Spray

Formulation reference: TP-701

Products

- DOWSIL™ HV 495 Emulsion
- XIAMETER™ MEM-8035 Emulsion
- XIAMETER™ AFE-2210 Antifoam Emulsion

Procedure

Mix the ingredients in the order listed with low-speed stirring.

Approximately 85% by weight of this formulation will be used in an aerosol fitted with a foaming valve, with the remaining 15% used in propellant.

Typical Properties / Additional Information

Suggestions for adjusting the formulation:

- To improve durability, increase ratio of XIAMETER™ MEM-8035 Emulsion to DOWSIL™ HV 495 Emulsion

Description

The formulation gives a “new” rather than painted appearance to the tire. The high-viscosity fluid emulsion increases gloss, while the amino-functional silicone promotes durability.

Ingredient	Wt. %	Trade Name / Supplier
1. Water	60.0	
2. Polyoxyethylene (20) sorbitan monooleate	1.0	TWEEN 80 / Croda Ltd.
3. Sorbitan trioleate	2.5	Span 80 / Croda Ltd.
4. Propylene glycol	30.0	The Dow Chemical Co.
5. DOWSIL™ HV 495 Emulsion	1.5	The Dow Chemical Co.
6. XIAMETER™ MEM-8035 Emulsion	1.0	The Dow Chemical Co.
7. Rust inhibitor	1.0	Sodium benzoate
8. XIAMETER™ AFE-2210 Antifoam Emulsion	0.8	The Dow Chemical Co.

Tire Dressing with XIAMETER™ MEM-1171 Emulsion

Formulation reference: TP-730

Products

- XIAMETER™ MEM-1171 Emulsion
- XIAMETER™ MEM-1101 Emulsion
- XIAMETER™ MEM-8035 Emulsion

Procedure

Mix the ingredients in the order listed with low stirring and add them slowly.

Typical Properties / Additional Information

- To improve gloss, add more XIAMETER™ MEM-1101 Emulsion.
- Explore different levels of gloss by using XIAMETER™ MEM-1664 Emulsion with XIAMETER™ MEM-1101 Emulsion.

Description

This formulation is based on XIAMETER™ MEM-1171 Emulsion, which is a low-odor, high-solids emulsion. XIAMETER™ MEM-1101 Emulsion adds shine, while XIAMETER™ MEM-8035 Emulsion increases durability.

Ingredient	Wt. %	Trade Name / Supplier
1. XIAMETER™ MEM-1171 Emulsion	32.0	The Dow Chemical Co.
2. XIAMETER™ MEM-1101 Emulsion	4.0	The Dow Chemical Co.
3. XIAMETER™ MEM-8035 Emulsion	3.5	The Dow Chemical Co.
4. Water	60.5	
5. KATHON LX	0.05	The Dow Chemical Co.

Water-Based Tire Shine

Formulation reference: TP-780

Products

- XIAMETER™ MEM-0062 Emulsion PS
- XIAMETER™ MEM-8035 Emulsion
- XIAMETER™ AFE-2210 Antifoam Emulsion
- DOWSIL™ HV 495 Emulsion
- XIAMETER™ OFX-0309 Fluid

Procedure

Mix the ingredients in the order listed with low-speed stirring.

Description

The formulation is a water-based tire shine.

Ingredient	Wt. %	Trade Name / Supplier
1. Water	67.95	
2. TWEEN 80	0.70	Croda Inc.
3. Span 80	0.50	Croda Inc.
4. Propylene glycol	4.00	
5. XIAMETER™ MEM-0062 Emulsion PS	18.00	The Dow Chemical Co.
6. XIAMETER™ MEM-8035 Emulsion	1.00	The Dow Chemical Co.
7. Sodium benzoate	0.20	
8. XIAMETER™ AFE-2210 Antifoam Emulsion	0.15	The Dow Chemical Co.
9. DOWSIL™ HV 495 Emulsion	7.00	The Dow Chemical Co.
10. XIAMETER™ OFX-0309 Fluid	0.50	The Dow Chemical Co.

Learn More

Whether you need industry-leading innovation or greater cost efficiency, Dow can help. Solutions by Dow are dedicated to meeting your needs for specialty materials, collaborative problem-solving and innovation support. Learn how we can help you at **consumer.dow.com.**

Image: dow_40370427863

HANDLING PRECAUTIONS

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT WWW.CONSUMER.DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are safe, effective and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

Dow's sole warranty is that our products will meet the sales specifications in effect at the time of shipment.

Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, DOW SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY.

DOW DISCLAIMS LIABILITY FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

30023848 Form No. 26-1998-01 A