# Automotive appearance chemicals product selection guide





## **Automotive surfaces**

#### Performance-enhancing solutions from Dow

Dow provides an array of performance-enhancing solutions for manufacturers of products for automotive surfaces, including waxes, polishes, and tire and vinyl protectants. Dow's silicone-based innovations offer choices that allow manufacturers to differentiate their products by improving shine and durability while modifying water beading potential, sheeting effect and feel. Silicones impart a range of perceived benefits to automotive surface products destined for use in the institutional, body shop and retail markets.

#### Benefits include:

- · Application ease
- Gloss
- · Depth of gloss, also known as color enhancement
- · Durability and detergent resistance
- Water repellency
- · Ease of buff or rub-out

XIAMETER™ PMX-200 Silicone Fluids from Dow set the industry standard for many automotive surface applications. These fluids, plus other DOWSIL™ and XIAMETER™ products, including organo-modified polysiloxanes, resins and additional product types, offer manufacturers almost unlimited possibilities for their formulations.

#### Introduction to this product selection guide

From start to finish, formulating automotive surface products has never been easier. The tables in this guide will assist you in making the right choices to secure the product properties you seek. Table I describes in general terms the benefits achieved by using products from Dow, while Tables II and III allow you to compare products based on a given application. Benefits may vary depending on the actives delivery mechanisms considered in your formulation. Contact Dow for technical support, or visit dow.com

# Table I: Application selector guide

| Targ<br>Ben | efit                 | Wash and rinse aid  | Exterior wax, conditioner and sealant   | Exterior trim protectant  | Upholstery care  |
|-------------|----------------------|---|---|---|--|
|             | Gloss                | DOWSIL™ FZ-4658<br>XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion             | XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion<br>XIAMETER™ MEM-0062 Emulsion<br>XIAMETER™ MEM-1865 Emulsion<br>XIAMETER™ MEM-1473 Emulsion | XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion<br>XIAMETER™ MEM-0062 Emulsion<br>XIAMETER™ MEM-1865 Emulsion<br>XIAMETER™ MEM-0039 Emulsion | XIAMETER™<br>MEM-0349 Emulsion<br>XIAMETER™<br>MEM-0346 Emulsion |
|             | Durability           | XIAMETER™ MEM-8035 Emulsion<br>DOWSIL™ FZ-4658  | XIAMETER™ MEM-8035 Emulsion<br>DOWSIL™ BY 22-749 SR Emulsion  | XIAMETER™ MEM-8035 Emulsion<br>DOWSIL™ HV 496 Emulsion<br>XIAMETER™ MEM-1101 Emulsion   |  |
|             | Ease of use          | XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion                                | XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion  | XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion  |  |
|             | Water beading        | DOWSIL™ FZ-4658<br>XIAMETER™ MEM-8035 Emulsion  | DOWSIL™ BY 22-749 SR Emulsion   | XIAMETER™ MEM-8035 Emulsion   |  |
| Water-based | Leveling             | XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion<br>XIAMETER™ MEM-1473 Emulsion | XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion<br>XIAMETER™ MEM-0039 Emulsion<br>XIAMETER™ MEM-1473 Emulsion                                | XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion<br>XIAMETER™ MEM-0039 Emulsion<br>XIAMETER™ MEM-1473 Emulsion                                |  |
|             | Paintability         |   | XIAMETER™ MEM-5009 Emulsion<br>DOWSIL™ 2418 Release Emulsion  | XIAMETER™ MEM-5009 Emulsion<br>DOWSIL™ 2418 Release Emulsion  |  |
|             | Wetting              | XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion<br>XIAMETER™ MEM-8035 Emulsion |   |   |  |
|             | Slip                 | XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion<br>XIAMETER™ MEM-8035 Emulsion | XIAMETER™ MEM-1865 Emulsion   | XIAMETER™ MEM-1865 Emulsion<br>XIAMETER™ MEM-1101 Emulsion<br>XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion                                |  |
|             | Color<br>enhancement |   | DOWSIL™ HV 496 Emulsion<br>XIAMETER™ MEM-1865 Emulsion<br>XIAMETER™ MEM-1101 Emulsion   | DOWSIL™ HV 496 Emulsion<br>XIAMETER™ MEM-1865 Emulsion<br>XIAMETER™ MEM-1101 Emulsion   |  |

| Interior trim renovator   | Leather conditioner   | Glass care  | Vinyl protectant   | Tire care  |
|---|---|---|--|--|
| XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-1473 Emulsion<br>XIAMETER™ MEM-0062 Emulsion<br>XIAMETER™ MEM-0039 Emulsion<br>XIAMETER™ MEM-0346 Emulsion | XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-1473 Emulsion<br>XIAMETER™ MEM-0346 Emulsion<br>XIAMETER™ MEM-0062 Emulsion<br>XIAMETER™ MEM-0039 Emulsion | DOWSIL™ 193C Fluid                                | XIAMETER™<br>MEM-0349 Emulsion<br>XIAMETER™<br>MEM-0346 Emulsion | XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion<br>XIAMETER™ MEM-0039 Emulsion<br>XIAMETER™ MEM-0062 Emulsion |
| XIAMETER™ MEM-8035 Emulsion<br>DOWSIL™ HV 496 Emulsion  | DOWSIL™ HV 496 Emulsion   |   | XIAMETER™ MEM-8035<br>Emulsion                                   | XIAMETER™ MEM-8035 Emulsion<br>DOWSIL™ BY 22-729 EX Emulsion<br>DOWSIL™ HV 496 Emulsion<br>XIAMETER™ MEM-1101 Emulsion   |
| XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion  | XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion  |   | XIAMETER™<br>MEM-0349 Emulsion<br>XIAMETER™<br>MEM-0346 Emulsion | XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion   |
|   | XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion  |   |  | XIAMETER™ MEM-1101 Emulsion<br>XIAMETER™ MEM-8035 Emulsion   |
| XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-1473 Emulsion<br>XIAMETER™ MEM-8035 Emulsion   | XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion<br>XIAMETER™ MEM-039 Emulsion<br>XIAMETER™ MEM-1473 Emulsion                                 | DOWSIL™ 193C Fluid                                |  | XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion<br>XIAMETER™ MEM-1473 Emulsion                                |
| DOWSIL™ 2418 Release Emulsion   |   |   | XIAMETER™ MEM-5009 Emulsion<br>DOWSIL™<br>2418 Release Emulsion  |  |
| XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion<br>XIAMETER™ MEM-8035 Emulsion   | XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion  | XIAMETER™<br>OFX-5211 Fluid<br>DOWSIL™ 193C Fluid |  | XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion<br>XIAMETER™ MEM-1101 Emulsion<br>XIAMETER™ MEM-8035 Emulsion |
| XIAMETER™ MEM-8035 Emulsion<br>XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion   | XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion  |   |  | XIAMETER™ MEM-8035 Emulsion<br>XIAMETER™ MEM-1101 Emulsion<br>XIAMETER™ MEM-0349 Emulsion<br>XIAMETER™ MEM-0346 Emulsion |
| DOWSIL™ HV 496 Emulsion<br>XIAMETER™ MEM-1865 Emulsion<br>XIAMETER™ MEM-1101 Emulsion   | DOWSIL™ HV 496 Emulsion<br>XIAMETER™ MEM-1865 Emulsion<br>XIAMETER™ MEM-1101 Emulsion   |   |  | XIAMETER™ MEM-1101 Emulsion<br>DOWSIL™ HV 496 Emulsion   |

# **Table I: Application selector guide (continued)**

|               | get application      | Wash and rinse aid  | Exterior wax, conditioner and sealant   | Exterior trim protectant  | Upholstery care                      |  |  |  |  |
|---------------|----------------------|---|---|---|--------------------------------------|--|--|--|--|
|               | Gloss                |   | XIAMETER™ PMX-200 Silicone Fluid<br>(350-1,000 cSt)<br>XIAMETER™ OFX-0531 Fluid<br>DOWSIL™ 3527 Release Agent<br>DOWSIL™ 2-1912 Fluid<br>DOWSIL™ 2-5088 Wax     | XIAMETER™ PMX-200 Silicone Fluid<br>(350-1,000 cSt)<br>XIAMETER™ OFX-0531 Fluid<br>DOWSIL™ 3527 Release Agent<br>DOWSIL™ 2-1912 Fluid |                                      |  |  |  |  |
|               | Durability           | XIAMETER™ OFX-8630 Fluid  | XIAMETER™ OFX-0536 Fluid XIAMETER™ OFX-0531 Fluid DOWSIL™ 3527 Release Agent DOWSIL™ 2-1912 Fluid DOWSIL™ 593 Fluid DOWSIL™ 2-5088 Wax XIAMETER™ OFX-8630 Fluid | DOWSIL™ 3527 Release Agent<br>DOWSIL™ 593 Fluid<br>DOWSIL™ 2-1912 Fluid   |                                      |  |  |  |  |
|               | Ease of use          |   | XIAMETER™ PMX-200 Silicone Fluid<br>(50-1,000 cSt)<br>XIAMETER™ OFX-0531 Fluid  | XIAMETER™ PMX-200 Silicone Fluid<br>(50-1,000 cSt)<br>XIAMETER™ OFX-0531 Fluid  |                                      |  |  |  |  |
|               | Water beading        | XIAMETER™ PMX-0245<br>Cyclopentasiloxane<br>XIAMETER™ PMX-200 Silicone Fluid<br>XIAMETER™ OFX-8630 Silicone Fluid | DOWSIL™ 3527 Release Agent<br>DOWSIL™ 2-1912 Fluid<br>XIAMETER™ OFX-0531 Silicone Fluid<br>DOWSIL™ 2-5088 Wax<br>XIAMETER™ PMX-200 Silicone Fluid               | DOWSIL™ 593 Fluid<br>XIAMETER™ OFX-0531 Fluid<br>XIAMETER™ OFX-0536 Fluid<br>DOWSIL™ 2-5088 Wax<br>XIAMETER™ PMX-200 Silicone Fluid   | DOWSIL™ FBL-0563<br>Formulated Blend |  |  |  |  |
| Solvent-based | Leveling             | XIAMETER™ PMX-0245<br>Cyclopentasiloxane  | XIAMETER™ PMX-200 Silicone Fluid<br>DOWSIL™ 593 Fluid   | XIAMETER™ PMX-200 Silicone Fluid  |                                      |  |  |  |  |
|               | Paintability         |   | DOWSIL™ 2-5088 Wax<br>XIAMETER™ OFX-0203 Fluid<br>XIAMETER™ OFX-0230 Fluid  | XIAMETER™ OFX-0203 Fluid<br>XIAMETER™ OFX-0230 Fluid  |                                      |  |  |  |  |
|               | Dry finish           |   | DOWSIL™ 2-5088 Wax  |   |                                      |  |  |  |  |
|               | Wetting              | XIAMETER™ PMX-0245<br>Cyclopentasiloxane  | XIAMETER™ PMX-200 Silicone Fluid  | XIAMETER™ PMX-200 Silicone Fluid  | XIAMETER™ PMX-200<br>Silicone Fluid  |  |  |  |  |
|               | Slip                 |   | XIAMETER™ PMX-200 Silicone Fluid  | XIAMETER™ PMX-200 Silicone Fluid  | XIAMETER™ PMX-200<br>Silicone Fluid  |  |  |  |  |
|               | Color<br>enhancement |   | XIAMETER™ PMX-200 Silicone Fluid<br>(10,000-60,000 cSt)   | XIAMETER™ PMX-200 Silicone Fluid<br>(10,000-60,000 cSt)   |                                      |  |  |  |  |

| Interior trim renovator   | Interior trim renovator Leather conditioner                               |                               | Vinyl protectant   | Tire care   |
|---|---|-------------------------------|--|---|
| XIAMETER™ PMX-200 Silicone Fluid<br>(350-1,000 cSt)   | XIAMETER™ PMX-200 Silicone Fluid<br>(350-1,000 cSt)<br>DOWSIL™ 2-5088 Wax |                               | XIAMETER™ PMX-200 Silicone Fluid<br>(350-1,000 cSt)                        | XIAMETER™ PMX-200 Silicone Fluid<br>(350-1,000 cSt)   |
|   | DOWSIL™ 2-5088 Wax  |                               |  | XIAMETER™ PMX-200 Silicone Fluid<br>(12,500-60,000 cSt)<br>XIAMETER™ OFX-8630 Fluid<br>DOWSIL™ 3527 Release Agent<br>DOWSIL™ 593 Fluid<br>DOWSIL™ 2-1912 Fluid                                |
| XIAMETER™ PMX-200 Silicone Fluid<br>(50-1,000 cSt)  | XIAMETER™ PMX-200 Silicone Fluid<br>(50-1,000 cSt)                        |                               | XIAMETER™ PMX-200 Silicone Fluid<br>(50-1,000 cSt)                         | XIAMETER™ PMX-200 Silicone Fluid<br>(50-1,000 cSt)  |
| DOWSIL™ 593 Fluid<br>DOWSIL™ 2-1912 Fluid<br>DOWSIL™ 3527 Release Agent<br>XIAMETER™ PMX-200 Silicone Fluid | DOWSIL™ 2-5088 Wax  | DOWSIL™ 3527<br>Release Agent | XIAMETER™ PMX-200 Silicone Fluid   | DOWSIL™ 2-1912 Fluid<br>DOWSIL™ 593 Fluid<br>DOWSIL™ 3527 Release Agent<br>XIAMETER™ PMX-200 Silicone Fluid   |
| XIAMETER™ PMX-200 Silicone Fluid  | XIAMETER™ PMX-200 Silicone Fluid  |                               | XIAMETER™ PMX-200 Silicone Fluid   | XIAMETER™ PMX-0244 Cyclotetrasiloxane XIAMETER™ PMX-0245 Cyclopentasiloxane DOWSIL™ OS-2 Silicone Cleaner and Solvent   |
| XIAMETER™ OFX-0203 Silicone Fluid<br>XIAMETER™ OFX-0230 Fluid   | DOWSIL™ 2-5088 Wax  |                               | XIAMETER™ OFX-0203 Fluid<br>XIAMETER™ OFX-0230 Fluid<br>DOWSIL™ 2-5088 Wax | XIAMETER™ OFX-0230 Fluid<br>XIAMETER™ OFX-0203 Fluid  |
|   | DOWSIL™ 2-5088 Wax  |                               |  |   |
| XIAMETER™ PMX-200 Silicone Fluid  | XIAMETER™ PMX-200 Silicone Fluid  |                               | XIAMETER™ PMX-200 Silicone Fluid   | XIAMETER™ PMX-0244 Cyclotetrasiloxane XIAMETER™ PMX-0245 Cyclopentasiloxane XIAMETER™ PMX-0345 Cyclosiloxane Blend DOWSIL™ OS-2 Silicone Cleaner and Solvent XIAMETER™ PMX-200 Silicone Fluid |
| XIAMETER™ PMX-200 Silicone Fluid  | XIAMETER™ PMX-200 Silicone Fluid  |                               | XIAMETER™ PMX-200 Silicone Fluid   |   |
| XIAMETER™ PMX-200 Silicone Fluid<br>(10,000-60,000 cSt)   | XIAMETER™ PMX-200 Silicone Fluid<br>(10,000-60,000 cSt)                   |                               |  | XIAMETER™ PMX-200 Silicone Fluid<br>(10,000-60,000 cSt)   |

## Table II: Solvent-based product comparison

| Description                     | Currently<br>available in these<br>geographic areas | Product                                      | Functions, benefits and recommendations   |  |  |  |  |
|---------------------------------|---|--|---|--|--|--|--|
|                                 | Global  | XIAMETER™ PMX-200<br>Silicone Fluid, 0.65 cs |   |  |  |  |  |
|                                 | Global  | DOWSIL™ OS-2 Silicone<br>Cleaner and Solvent | Volatile, low-viscosity fluids designed for use as carriers, high-  |  |  |  |  |
|                                 | Global  | XIAMETER™ PMX-1184<br>Silicone Fluid         | performance non-VOC <sup>3</sup> solvents and cleaning aids in a wide range of automotive polish formulations; effective wetting properties deliver   |  |  |  |  |
| Volatile<br>silicone            | Global  | XIAMETER™ PMX-0244<br>Cyclotetrasiloxane     | actives to the automotive surface; slip, water repellency and gloss characteristics are present for a limited time; replace mineral seal oil in rinse aids; effective microemulsions can be achieved when combined  |  |  |  |  |
|                                 | Global  | XIAMETER™ PMX-0245<br>Cyclopentasiloxane     | with silicone surfactants.  |  |  |  |  |
|                                 | Global  | XIAMETER™ PMX-0345<br>Cyclosiloxane Blend    |   |  |  |  |  |
| Silicone fluid                  | Global  | XIAMETER™ PMX-200<br>Silicone Fluid          | High-viscosity fluids provide excellent depth of gloss and improvements in durability and water resistance; useful in solvent-based formulations; blend of intermediate- and high-viscosity fluids recommended to achieve a good balance in gloss, application ease and rub-out; a 3:1:1 ratio of 350, 1,000 and 12,500 cSt products optimizes shine and durability; products are available in emulsion form. |  |  |  |  |
|                                 | Global  | XIAMETER™ OFX-0531 Fluid                     | Offering enhanced durability, detergent resistance and corrosion  |  |  |  |  |
| Amino<br>functional<br>silicone | Global  | XIAMETER™ OFX-0536 Fluid                     | resistance; offered in crosslinkable (curable) and non-crosslinkable versions; curable products produce a continuous film; non-crosslinkable products offer excellent stability and shelf life; deposit and adhere  |  |  |  |  |
| Silicone                        | Global  | XIAMETER™ OFX-8630 Fluid                     | strongly to automobile finishes, chrome and aluminum surfaces.  |  |  |  |  |
| Alkylaryl                       | Global  | XIAMETER™ OFX-0203 Fluid                     | Have properties similar to intermediate-viscosity fluids, but with alkyl functionality; serve as actives for leather conditioners; provide preferred  |  |  |  |  |
| functional<br>fluid             | Global  | XIAMETER™ OFX-0230 Fluid                     | technologies to formulate products for body shop use.   |  |  |  |  |
| Silicone<br>wax                 | Global  | DOWSIL™ 2-5088 Wax                           | Serves as active for leather conditioners; provides preferred technologies to formulate products for body shop use; serves as an ingredient for hard waxes, paintable polishes, wax conditioners, polishes and polymer sealants.  |  |  |  |  |
|                                 | Global  | XIAMETER™ OFX-0190 Fluid                     | Clearing and watting properties hybridity in glass cleaners, skilling to  |  |  |  |  |
| Emulsifier                      | Global  | XIAMETER™ OFX-0193 Fluid                     | Cleaning and wetting properties; lubricity in glass cleaners; ability to be used in water-in-oil and water-in-silicone emulsions makes them unique to formulate non-VOC products; XIAMETER™ OFX-0190 Fluid,   |  |  |  |  |
| wetting<br>agent                | Global  | DOWSIL™ 5225C<br>Formulation Aid             | XIAMETER™ OFX-0193 Fluid and XIAMETER™ OFX-3667 Fluid are suited for cosurfactants; XIAMETER™ OFX-0193 Fluid for anti-fog   |  |  |  |  |
|                                 | Global  | XIAMETER™ OFX-3667 Fluid                     | applications; DOWSIL™ 5225C Formulation Aid for water-in-silicone emulsions; DOWSIL™ 5200 Formulation Aid for water-in-oil emulsions.   |  |  |  |  |
|                                 | Global  | DOWSIL™ 5200 Formulation Aid                 |   |  |  |  |  |
|                                 | Global  | DOWSIL™ 593 Fluid                            |   |  |  |  |  |
| Silicone resin                  | Global  | DOWSIL™ FBL-0563<br>Formulated Blend         | Long-lasting water durability and repellency that protects automotive surfaces; preferred when enhanced water beading is desired; some can be reacted with catalyst agents to formulate fabric water repellents.  |  |  |  |  |
|                                 | Global  | DOWSIL™ 2-1912 Fluid                         |   |  |  |  |  |
|                                 | Global  | DOWSIL™ 3527 Release Agent                   |   |  |  |  |  |

Comparison Ratings (••••• = Best; • = Moderate). Note: Ratings are a preliminary guideline only. See product data sheets for detailed information. All tested products have been tested at 5% actives on automotive panels using a suitable solvent.
 The above information is not intended for use in preparing product specifications. Contact Dow before writing specifications.
 VOC = Volatile Organic Compounds, according to the U.S. Clean Air Act. Contact Dow for product compliance in your area.
 California Air Resources Board.

| Comparison ratings¹ |            |             |         |       |                    |           |  |
|---------------------|------------|-------------|---------|-------|--------------------|-----------|--|
| Shine               | Durability | Ease of use | Wetting | Slip  | Viscosity,<br>cSt² | % Actives | Notes  |
|                     |            | ••••        | ••••    |       | 0.65               | 100       | Volatile carrier; CARB4 compliant  |
|                     |            |             | ••••    |       | 0.78               | 100       |  |
|                     |            |             |         |       | 1.6                | 100       | Not tested for comparison ratings  |
|                     |            |             |         |       | 2.5                | 100       | Volatile carrier; CARB <sup>4</sup> compliant; not tested for comparison ratings   |
|                     |            | ••••        | ••••    |       | 4.0                | 100       | Volatile carrier; CARB4 compliant  |
|                     |            | ••••        | ••••    |       | 5.0                | 100       | Volatile carrier; CARB4 compliant  |
| •••                 | ••         | •••         | •••     | ••••  | 50-1,000           | 100       |  |
| ••••                | ••••       | ••          | •       | ••••  | 10,000-<br>60,000  | 100       |  |
| ••••                | •••        | •••         | ••      | •     | 160                | 50        |  |
| • •                 | ••••       | •••         | •       | ••    | 40                 | 100       |  |
| •                   | ••••       | •••         | ••      | ••    | 500                | 100       |  |
| •••                 | •••        | •••         | •••     | •     | 1,200              | 100       |  |
|                     |            |             |         |       | 1,125-1,645        | 100       | Not tested for comparison ratings  |
| •••                 | •••        | ••          |         | •     | -                  | 100       | Melt at 70°C prior to use  |
|                     |            |             |         |       | 2,000              | 100       | Not tested for comparison ratings  |
| •                   |            | ••••        | ••••    | •     | 400                | 100       |  |
| •                   | •          | • • •       | •••     | •     | 700                | 100       |  |
|                     |            |             |         |       | 200-500            | 100       | Not tested for comparison ratings  |
| ••••                | •          | ••          | ••      | •     | 2,500              | 100       |  |
| • •                 | ••         | ••••        | ••••    | •••   | 700                | 100       |  |
|                     |            |             |         |       | 7                  | 42        | Air-drying, air-curing; imparts a<br>high degree of water repellency<br>on natural and synthetic fabrics;<br>not tested for comparison ratings |
| ••••                | ••         | •••         | ••••    | • • • | 700                | 100       |  |
| • • •               | • • •      | • • •       | • • •   | • •   | 2,000              | 100       |  |

## Table III: Water-based product comparison

| Description                                 | Currently<br>available in these<br>geographic areas | Product                       | Functions, benefits and recommendations   |  |  |
|---|---|-------------------------------|---|--|--|
|   | Americas, Asia                                      | XIAMETER™ MEM-0349 Emulsion   |   |  |  |
|   | Americas, Asia                                      | XIAMETER™ MEM-0039 Emulsion   |   |  |  |
|   | Americas  | XIAMETER™ MEM-1101 Emulsion   | Preferred for water-based formulations, these emulsions and   |  |  |
| Silicone fluid                              | Europe  | XIAMETER™ MEM-0346 Emulsion   | microemulsions offer significant advantages when formulating flexibility is desirable; good compatibility; good surface   |  |  |
| emulsion                                    | Europe  | XIAMETER™ MEM-1473 Emulsion   | abrasion characteristics; good gloss, minimum smear; for use in automotive polishes and rubber/vinyl protectant formulations, cleaning properties; provide proven performance, reliable quality and speed to market; the small particle size of the microemulsion products offers better penetration, improved wetting out, more consistent coatings. |  |  |
|   | Global  | XIAMETER™ MEM-0347G Emulsion  |   |  |  |
|   | Americas  | XIAMETER™ MEM-0062 Emulsion   |   |  |  |
|   | Global  | DOWSIL™ HV 496 Emulsion       |   |  |  |
| Silicone Fluid<br>Microemulsion             | Global  | XIAMETER™ MEM-1865 Emulsion   |   |  |  |
| Amino<br>functional<br>silicone<br>emulsion | Global  | XIAMETER™ MEM-8035 Emulsion   | Provide outstanding bonding and adhesion properties to automotive finishes, allowing repeated washings and adverse weather conditions.  |  |  |
| Alkylaryl<br>functional                     | Global  | XIAMETER™ MEM-5009 Emulsion   | Have properties similar to intermediate-viscosity fluids, but with alkyl functionality; serve as actives for leather conditioners;  |  |  |
| silicone<br>emulsion                        | Europe  | DOWSIL™ 2418 Release Emulsion | provide preferred technologies to formulate products for body shop use.   |  |  |
| Amino emulsion<br>silicone<br>emulsion      | Japan   | DOWSIL™ BY 22-729 EX Emulsion | Provides durability to tire treatment products.   |  |  |
| Resin emulsion                              | Japan   | DOWSIL™ BY22-749 SR Emulsion  | Provides durable water repellency to liquid car polish products, tire treatment products.   |  |  |
| Amino<br>microemulsion                      | Japan   | DOWSIL™ FZ-4658               | Provides durable water repellency to shampoo for automated car washes; the small particle size prevents blockage in the pipes of the washing mechanism.   |  |  |

<sup>1.</sup> Comparison Ratings (••••• Best, • = Moderate). Note: Ratings are a preliminary guideline only. See product data sheets for detailed information. All tested products have been tested at 5% actives on automotive panels using a suitable solvent.

| Comparison ratings¹ |            |             |         |      |  |              |                   |                          |   |   |
|---------------------|------------|-------------|---------|------|--|--------------|-------------------|--------------------------|---|---|
| Shine               | Durability | Ease of use | Wetting | Slip | Viscosity, cSt <sup>2</sup><br>(*polymer<br>viscosity for<br>the emulsion<br>products) | %<br>Actives | Emulsifier type   | Free of APEO surfactants | Compliant with European detergent regulations EC 648/2004 | Notes                                       |
| ••••                | •••        | ••••        | •••     | ••   | 350‡   | 60           | Nonionic          | Yes                      | Yes   |   |
| ••                  | ••         | •••         | ••      | •    | 350‡   | 35           | Nonionic          | Yes                      | Yes   |   |
| •••                 | ••         | •••         | •••     | •••  | 125,000‡   | 60           | Anionic           | Yes                      |   |   |
| ••••                | •••        | ••••        | •••     | ••   | 350‡   | 60           | Nonionic          | Yes                      | Yes   |   |
| ••••                | •••        | •••         | •••     | •    | 400  | 50           | Nonionic          | Yes                      | Yes   |   |
| •••                 | ••         | ••••        | •••     | •    | OH Functional  | 60           | Nonionic          | Yes                      | Yes   |   |
| ••••                | •••        | ••••        | •••     | •••  | 1,000 <sup>‡</sup>   | 60           | Nonionic+antistat | Yes                      | Yes   |   |
| ••••                | ••••       | •           | •••     | ••   | 100,000‡   | 35           | Slightly anionic  | Yes                      | Yes   |   |
| ••                  | •••        | ••          | ••      | •••• | 12,500‡  | 25           | Anionic/nonionic  | Yes                      | Yes   | Translucent                                 |
| •••                 | ••••       | ••          | •       | •••• | -  | 35           | Cationic          | Yes                      | Yes   |   |
| ••                  | ••         | •••         | •••     | ••   | -  | 50           | Nonionic/anionic  | Yes                      |   | Emulsifiers<br>are readily<br>biodegradable |
| •••                 | •••        | •••         | •••     | •    | -  | 50           | Nonionic          | Yes                      | No  |   |
| ••                  | ••••       | •           | •       | ••   |  | 20           | Nonionic          | Yes                      |   |   |
| •••                 | ••••       | ••••        | •••     | ••   |  | 70           | Nonionic          | Yes                      |   |   |
| •••                 | ••••       | ••••        | •••     | •••  |  | 15           | Nonionic          | Yes                      | Yes   | Translucent gray                            |

## For more information

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200020605 Form No. 26-1382-01-0822 S2D