

**PRIMAL™ MULTILOBE™ ML-520 Acrylic Binder**

For exterior house paints

**Regional  
Product  
Availability**

EMEA

**Product  
Description**

PRIMAL™ MULTILOBE™ ML-520 Acrylic Binder has been designed to be the APEO free\* variant of PRIMAL™ MULTILOBE ML-200.

The result of its specific morphology (both spherical and lobed particles) is an optimal combination of all-acrylic durability, film build, chalk adhesion and minimized thickener/surfactant levels in the paint formulation.

These properties result in a very attractive balance of cost and performance. This all-acrylic binder offers excellent value for exterior architectural paints.

\* APEO is not intentionally added and is not knowingly introduced from another raw material.

**Product  
Characteristics**

- Excellent exterior durability (best compromise to be micro cracks and dirt pick up resistant)
- Chalk adhesion
- Alkali and water resistant
- Excellent wet adhesion
- Rheological profile (improved film build)

**Typical  
Properties**

These are typical properties, not to be construed as specifications

| Property                                    | Typical Values     |
|---|--------------------|
| Appearance                                  | Milky white liquid |
| Solids content                              | 53 - 54 %          |
| pH  | 8.5 – 9.2          |
| Brookfield LV Viscosity (spindle 3, 60 rpm) | 100 - 1500 mPa.s   |
| Minimum Film Formation Temperature          | ~5 °C              |
| Appearance                                  | Milky white liquid |
| Solids content                              | 53 - 54 %          |

## Formulation Guidelines

### Starting Point Formulation based on PRIMAL™ MULTILOBE™ ML-520 Acrylic Binder (PVC 30%)

Ref: PRIMAL MULTILOBE 520 (PVC=30%) - Formulation 01

| Material Name                           | Kilograms | Liters | PVC Level |
|---|-----------|--------|-----------|
| <b>Grind</b>                            |           |        |           |
| Water                                   | 100,0     | 100,0  |           |
| OROTAN™ 731A ER Dispersant              | 10,0      | 9,1    |           |
| Byk-024 defoamer <sup>1</sup>           | 2,0       | 2,0    |           |
| Aqueous Ammonia (28%)                   | 1,0       | 1,1    |           |
| Natrosol 250 HR HEC (2.5%) <sup>2</sup> | 2,0       | 2,0    |           |
|   |           |        |           |
| Tioxide TR92 pigment <sup>3</sup>       | 180,0     | 45,0   | 15,4%     |
| Micro Mica W1 <sup>4</sup>              | 73,3      | 26,0   | 8,9%      |
|   |           |        |           |
| <i>Grind Sub-total</i>                  | 368,3     | 185,1  | 24,3%     |

|                         |      |      |  |
|-------------------------|------|------|--|
| <b>Premix</b>           |      |      |  |
| UCAR™ Filmer IBT        | 19,2 | 20,2 |  |
| Byk-024 <sup>1</sup>    | 3,0  | 3,0  |  |
|                         |      |      |  |
| <i>Premix Sub-total</i> | 22,2 | 23,2 |  |

|                              |       |       |      |
|------------------------------|-------|-------|------|
| <b>LetDown</b>               |       |       |      |
| PRIMAL™ MULTILOBE™ ML-520    | 432,0 | 405,7 |      |
| ROPAQUE™ ULTRA E Opacifier   | 30,0  | 29,3  | 5,2% |
|                              |       |       |      |
| ACRYSOL™ RM-2020 E Thickener | 15,0  | 14,4  |      |
| Water                        | 132,5 | 132,5 |      |

|               |                |              |              |
|---------------|----------------|--------------|--------------|
| <b>Totals</b> | <b>1 000,0</b> | <b>790,2</b> | <b>29,5%</b> |
|---------------|----------------|--------------|--------------|

#### Paint Properties

|                                |       |
|--------------------------------|-------|
| Pigment Volume Concentration : | 29,5% |
| Volume Solids :                | 38,1% |
| Weight Solids :                | 50,4% |
| Density :                      | 1,27  |
| Dispersant :                   | 1,0%  |
| Coalescent :                   | 8,0%  |
| VOC (g/L) :                    | 1,4   |

#### Viscosities

|                      |         |
|----------------------|---------|
| Krebs Stormer (KU) : | 105-115 |
| ICI (Poise) :        | 1.5-1.9 |

#### Suppliers

<sup>1</sup> Byk Chemie GmbH, Wesel, Germany

<sup>3</sup> Norwegian Talc, Matlock, UK

<sup>4</sup> Hercules International Ltd, Rijswijk, Netherlands

<sup>5</sup> Huntsman Tioxide, London, UK

# Starting Point Formulation based on PRIMAL™ MULTILOBE™ ML-520 Acrylic Binder (PVC 29.6%)

Ref: PRIMAL MULTILOBE ML-520 (PVC=30%) -Formulation 02

| Material Name                     | Kilograms | Liters | PVC Level |
|-----------------------------------|-----------|--------|-----------|
| <b>Grind</b>                      |           |        |           |
| Water                             | 100,0     | 100,0  |           |
| OROTAN™ 731A ER Dispersant        | 10,8      | 9,8    |           |
| Byk-022 defoamer <sup>1</sup>     | 2,0       | 2,0    |           |
| Aqueous Ammonia (28%)             | 1,0       | 1,1    |           |
| ACRYSOL™ RM-2020 Thickener        | 10,0      | 9,6    |           |
| Tioxide TR92 pigment <sup>2</sup> | 180,0     | 45,0   | 15,5%     |
| Micro Mica W1 <sup>3</sup>        | 73,0      | 25,9   | 8,9%      |
| <i>Grind Sub-total</i>            | 376,8     | 193,4  | 24,3%     |

|                         |      |      |  |
|-------------------------|------|------|--|
| <b>Premix</b>           |      |      |  |
| UCAR™ Filmer IBT        | 19,2 | 20,2 |  |
| Byk-024 <sup>1</sup>    | 3,0  | 3,0  |  |
| <i>Premix Sub-total</i> | 22,2 | 23,2 |  |

|                            |       |       |      |
|----------------------------|-------|-------|------|
| <b>LetDown</b>             |       |       |      |
| PRIMAL MULTILOBE ML-520    | 430,0 | 403,8 |      |
| ROPAQUE™ ULTRA E Opacifier | 30,0  | 29,3  | 5,2% |
| ACRYSOL RM-8W              | 15,0  | 14,4  |      |
| ACRYSOL RM-2020            | 10,0  | 9,6   |      |
| Water                      | 116,0 | 116,0 |      |

|               |                |              |              |
|---------------|----------------|--------------|--------------|
| <b>Totals</b> | <b>1 000,0</b> | <b>789,7</b> | <b>29,6%</b> |
|---------------|----------------|--------------|--------------|

## Paint Properties

|                                |       |
|--------------------------------|-------|
| Pigment Volume Concentration : | 29,6% |
| Volume Solids :                | 38,4% |
| Weight Solids :                | 50,6% |
| Density :                      | 1,27  |
| Dispersant :                   | 1,1%  |
| Coalescent :                   | 8,0%  |
| VOC (g/L) :                    | 1,3   |

## Viscosities

|   |           |
|---|-----------|
| Krebs Stormer (KU) :                      | 105-115   |
| ICI (Poise) :                             | 1.3-1.7   |
| Brookfield (spindle 4 / 60 RPM) (mPa.s) : | 4000-4800 |
| Brookfield (spindle 4 / 30 RPM) (mPa.s) : | 3700-4500 |
| Brookfield (spindle 4 / 12 RPM) (mPa.s) : | 4800-5800 |

## Application Properties

|                                  |     |
|----------------------------------|-----|
| Natural Spreading Rate (g/cm²) : | 130 |
| Sagging :                        | 0+  |

## Suppliers

<sup>1</sup> Byk Chemie GmbH, Wesel, Germany

<sup>4</sup> Huntsman Tioxide, London, UK

## Film Properties

### Gloss

|             |       |
|-------------|-------|
| Gloss 20° : | 2-3   |
| Gloss 60° : | 13-14 |

### Reflectance

|           |    |
|-----------|----|
| Y/black : | 83 |
| Y/white : | 90 |

### Contrast ratio 100µ

|      |       |
|------|-------|
| CR : | 91,8% |
|------|-------|

**Handling  
Precautions**

Before using this product, consult the Material Safety Data Sheet (MSDS)/Safety Data Sheet (SDS) for details on product hazards, recommended handling precautions and product storage.

**Storage**

Store products in tightly closed original containers at temperatures recommended on the product label

**Disposal  
Considerations**

Dispose in accordance with all local, or national regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state or national regulations. Contact your Dow Coating Materials Technical Representative for more information.

**Chemical  
Registration**

Many countries within EMEA require the registration of chemicals, either imported or produced locally, prior to their commercial use. Violation of these regulations may lead to substantial penalties imposed upon the user, the importer or manufacturer, and/or cessation of supply. It is in your interests to ensure that all chemicals used by you are registered. Dow does not supply unregistered products unless permitted under limited sampling procedures as a precursor to registration.

**Note on EMEA  
Product Line**

Product availability and grades vary throughout the countries in the EMEA area. Please contact your local Dow Coating Materials representative for further information and samples.

**Product  
Stewardship**

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

**Customer Notice**

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