Moisture curing paint systems
(Moisture Curing Urethanes)
What are moisture curing paint systems or MCU’s?

One pack systems have the advantage to be very user-friendly: no possible mixing mistakes, no potlife, time winning and half as much packaging material to dispose of compared to traditional two-pack epoxies. Based on high quality polyurethane resins and thanks to their specific formulation, they can be used in extreme climatic conditions from Siberian to Equatorial climates.

Being surface tolerant makes them the best choice when painting substrates difficult to reach or impossible to derust and prepare properly. They will simply make your work easier as you can use one type of paint for various substrates.

Furthermore, Libert Paints’ MCUs will ensure you a durable protection together with a better project productivity! ... MCU is a coating for extreme situations!

The MCU range:

- Polysilco HS Universal
- Polyfix
- Polyzinc
- Polymicace
- Polyguard
- Polygloss
The advantages Libert Paints’ MCUs:

- Can be applied with up to 98% of relative humidity, even in maritime environments.
- Can be applied by freezing or very warm temperatures, when the surface is dry.
- Very good resistance to acids, chemicals, oils, greases and alkaline products.
- Easy to prepare and to apply.
- Problem free as no mixing error can occur.
- Very good adhesion on rusted pieces, old paints or moderately prepared metal surfaces.
- Early stress resistance: a sudden change in climatic conditions will not affect the curing and the quality of the paint film.
- No pot life!
- Long corrosion protection, even under extreme climatic or environmental conditions.
- Can be part of a cathodic protection system.
- Can offer a galvanic protection!
The MCU range includes the following products:

**Polysilco HS Universal**

Polysilco HS Universal is a one-pack moisture curing polyurethane paint. Polysilco HS Universal has the following properties:

- Universal adherence: very good adherence on steel, aluminium and galvanized steel.
- Good anticorrosion properties by the use of a special activemodified (zinc free) phosphate anticorrosive pigment.
- Perfect high performance primer when blast clean is not possible.
- Very good drying and hardening properties, also by low temperatures (down to 0°C).
- Can be applied by roller, brush or sprayer.
- High solids content.
- Good elasticity (indirect and direct impact resistance).
- Colour: oxide red.

Polysilco HS Universal can be applied by temperatures between 0°C and 40°C and the relative humidity should be between 30% and 95% (no condensation). The temperature of the surface must be at least 3°C higher than dew point.
The MCU range includes the following products:

**Polyfix**

1L • 5L

Polyfix is a one-pack moisture curing polyurethane. It is used as rust fixator to repair corroded and damaged surfaces when full derusting is not possible.

Due to the special combination of polyurethane binders, a good adhesion and a remarkable elasticity are obtained. With its low viscosity and high penetration power, Polyfix prevents further expansion of rust. It can then be over coated by Polysilco HS Universal or other surface tolerant primers and build up this way a lasting protection.

Polyfix has the following properties:

- Can be applied at a temperature between -5 °C (no ice) and +50 °C;
- at a relative humidity between 30 % and 98 % (no condensation);
- Ready for use by brush.
- Colour : colourless.
- Gloss : satin.

**Polyzinc**

0.5L • 1L
2.5L • 10L

Polyzinc is a zinc rich one-pack polyurethane paint that reacts chemically with the air humidity. The adherence on sandblasted surfaces is excellent and the elasticity is higher than those of classic two-pack zinc rich paints. Polyzinc still hardens at low temperatures and high air humidity. The product is used as primer in high qualitative anticorrosion systems.

- Polyzinc contains 92 % of zinc in the dry film. Therefore, it can be used for cold galvanization and offers an excellent cathodic protection to steel when prepared to SA to 2,5.
- The Polyzinc is a high performance primer that will offer extra-long corrosion protection when combined with an intermediate and top coat.
- Polyzinc can be applied by brush, pneumatic or airless sprayer.
- Polyzinc can be applied at a relative humidity between 30 and 98 % (no condensation). The air and surface temperatures should be between 0°C (no ice) and +40°C. The temperature of the surface must be at least 3°C higher than dew point.
- Maximum (dry) resistance of the Polyzinc paint film to temperatures (maximum thickness 70 µm) : + 120 °C (permanent) / + 140 °C (during maximum 15 minutes).
- Colour : grey.
The MCU range includes the following products:

**Polymicace**

Polymicace is a moisture curing one-pack polyurethane paint which contains micaceous iron oxides. Due to the special lamellar structure of the pigmentation a very tight paint film is obtained with excellent water and corrosion resistance. The chemical inert pigmentation and the polyurethane binder provide a high chemical resistance.

Polymicace can be applied as an intermediate and/or topcoat in one-pack polyurethane systems.

Polymicace has the following properties:

- Polymeric can be applied by brush, roller pneumatic or airless spray.
- Polymeric can be applied at a temperature between 0 °C (no ice) and 35 °C and at a relative humidity between 30 % and 98 %. The temperature of the surface must be 3°C higher than dew point.
- Colour: grey.
- Gloss: matt.

**Polyguard**

Polyguard is a one-pack moisture curing polyurethane paint, pigmented with specific inert lamellar pigments and micaceous iron oxide. Polyguard is especially recommended for immersion circumstances (seawater, water or soil).

The specific properties of Polyguard are :

- Thanks to the special lamellar structure of the pigmentation, a very tight paint film is obtained with excellent water and corrosion resistance.
- The inert pigmentation and the polyurethane binder provide a high chemical resistance.

Polyguard is THE alternative to classic coal tar containing products and is thus far less harmful towards the applicator and the environment.

- Colour: black.
- Gloss: mat.
The MCU range includes the following products:

**Polygloss**

*Polygloss* is a high gloss one-pack moisture curing finishing coat, based on aliphatic polyurethane resins.

Polygloss is a high quality esthetical and very durable finishing coat.

Polygloss can be applied as a finish coat on top of Polymicace, Polysilco and other two-pack polyurethane or epoxy systems.

Polygloss has outstanding properties:

- Outdoor resistance with very good colour and gloss retention.
- High resistance to chemicals.
- High abrasion resistance.
- Excellent dirt repellent properties.
- High impact resistance.
- Available in RAL, BS, NCS and numerous other colours.
- Colours: 9005 – 6001 – white. Other colours available on demand.
- Gloss: High gloss.
Overview of our technical specifications

Libert Paints has a long tradition of intensive laboratory research. All our MCU products are developed in-house and tested before being delivered to the customer. Many tests are performed in-house with our own measuring equipment. Others are made by external laboratories such as WTCB, CORI, Unifap, SGS, ... This way, we continuously challenge ourselves to develop the ideal products for our customers and maximize the performances of our paints. Detailed test reports are available on request.

Since that Libert Paints has been one of the first producer in the world of this specific technology, millions of square meters of steel have already been protected with Libert Paints’ MCUs across the world for more than forty years! Thanks to this experience as manufacturer and our numerous references, we can recommend you this high performance paint with confidence.

Detailed test reports of our moisture curing paint systems are available. Included:

- Corrosion tests according to ISO 12944
- Corrosion tests according to NORSOK M-501
- Salt Spray tests on different paint systems according to ASTM B117 and ISO 7253
- Adhesion test according to ISO 2409, ASTM D3359 and NF EN 24624
- Weathering test according to NFT 34-550
- Condensation test according to ISO 6270-1
- Chemical resistance tests according to ISO 2812-1 and DIN 50017
- Impact tests according to ASTM D2794-84
- Elasticity tests according to Erichsen DIN 53156
- Immersion/Freeze/Dry-test according to ISO 2812-2
Overview of our technical specifications

<table>
<thead>
<tr>
<th></th>
<th>Polysilco HS Universal</th>
<th>Polyfix</th>
<th>Polyzinc</th>
<th>Polymicace</th>
<th>Polyguard</th>
<th>Polygloss</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gloss Gardner 60°</strong></td>
<td>Mat</td>
<td>Satin/Gloss</td>
<td>Mat</td>
<td>Mat</td>
<td>Mat</td>
<td>High gloss</td>
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<tr>
<td><strong>Density (at 20°C)</strong></td>
<td>1,32 ± 0,05 g/ml</td>
<td>1,15 ± 0,05 g/ml</td>
<td>3,17 ± 0,05 g/ml</td>
<td>1,52 ± 0,05 g/ml</td>
<td>1,55 ± 0,05 g/ml</td>
<td>1-1,4 g/ml</td>
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<tr>
<td><strong>Solids content</strong></td>
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<tr>
<td>in weight</td>
<td>66 ± 2%</td>
<td>69 ± 2%</td>
<td>61 ± 2%</td>
<td>79 ± 2%</td>
<td>82 ± 2%</td>
<td>58-65%</td>
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<tr>
<td>in volume</td>
<td>77 ± 2%</td>
<td>64 ± 2%</td>
<td>89 ± 2%</td>
<td>66 ± 2%</td>
<td>66 ± 2%</td>
<td>52-65%</td>
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<tr>
<td><strong>VOC</strong></td>
<td></td>
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<tr>
<td>not diluted</td>
<td>300 g/L</td>
<td>315g/L</td>
<td>342 g/L</td>
<td>&lt; 300 g/L</td>
<td>&lt; 295 g/L</td>
<td>370 - 430g/L</td>
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<tr>
<td>diluted</td>
<td></td>
<td></td>
<td>&lt; 490 g/L</td>
<td>&lt; 420 g/L</td>
<td>&lt; 420 g/L</td>
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<td></td>
<td></td>
<td></td>
<td>(diluted at 10%)</td>
<td>(diluted at 10%)</td>
<td>(diluted at 10%)</td>
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<tr>
<td><strong>Drying times at 20°C</strong></td>
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<tr>
<td>dustfree</td>
<td>1 u</td>
<td>4 u</td>
<td>15 min</td>
<td>1 u</td>
<td>1 u</td>
<td>2 u</td>
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<tr>
<td>tackfree</td>
<td>4 u</td>
<td>8 u</td>
<td>30 min</td>
<td>2,5 u</td>
<td>2,5 u</td>
<td>5 u</td>
</tr>
<tr>
<td>dry</td>
<td></td>
<td></td>
<td>3 u</td>
<td>4 u</td>
<td>6 u</td>
<td>10 u</td>
</tr>
<tr>
<td><strong>Recoatable times at 20°C</strong></td>
<td>6 u</td>
<td>12-24 u</td>
<td>4 u</td>
<td>6 u</td>
<td>6 u</td>
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<tr>
<td><strong>Recommended thickness (in micron)</strong></td>
<td>60-80</td>
<td>40</td>
<td>30-50</td>
<td>60-100</td>
<td>60-100</td>
<td>40</td>
</tr>
<tr>
<td><strong>Theoretical yield (dry)</strong></td>
<td>16,5 m²/L (40 micron)</td>
<td>16m²/L (40 micron)</td>
<td>15,4 m²/L (80 micron)</td>
<td>7,5 m²/L (80 micron)</td>
<td>7,5 m²/L (80 micron)</td>
<td>10,5-14 m²/L</td>
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For a more detailed overview, please do not hesitate to ask our technical data sheets or test reports.
Application areas:

- Siberic weather
- Equatorial and tropical climates
- Maritime environment
- Bridges and locks
- Cranes
- Oil and gas
- Storage tanks
- Pipelines
- Offshore and port material
- Antennas
- Energy: electricity pylons, lifts, lampposts …
- Steel structures
- Greenhouses
Further info about Libert Paints:
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