RUST-ANODE® PRIMER

TECHNICAL DATA SHEET
PRODUCT #300016

GALVANIZING COMPOUND

GENERAL INFORMATION
Unique industrial galvanizing technology of organic zinc-rich, providing an electrochemical bond with 88% zinc in the dry layer
Corrosion protection like hot-dip galvanizing and metalizing
Provides a lifetime comparable to hot-dip galvanizing under the same exposure conditions
Approved for recharging the zinc protection of hot-dip galvanized or metallized steel structures
Suitable for immersion with high resistance in freshwater, saltwater, wastewater or a saline environment
Single pack, designed to provide an excellent performance applied as stand-alone and do not need to be top-coated
Moisture cured, allows application regardless of the dew point
Designed for application directly to surfaces with clean tight rust without any loose or flaking materials
Low VOC
Excellent adhesion performance without abrasion on all metals including stainless steel, aluminum and weathering steel (Corten steel)
Ease of application either in a workshop or on-site
Applicable with standard painting equipment
Process without metal distortion
Ability to be welded
Meets DEF STAN 02-713 combustion toxicity test
Can be recovered by itself at any time without abrasion
Possibility of being covered with a suitable coating

STORAGE

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keep in a dry area, between 5°C and 20°C (41°F to 68°F)</td>
<td>MTQ and MTO certified (Ministry of Transportation Québec and Ontario, Canada)</td>
</tr>
<tr>
<td>Keep away from direct sun exposure</td>
<td>Hydro-Québec approval - SN31.101 (maintenance of electrical substations)</td>
</tr>
<tr>
<td>Unopened pail shelf life: 24 months</td>
<td>Hydro-Québec approval - TET-LIA-N-SUP0012 (Towers maintenance)</td>
</tr>
<tr>
<td>Opened: Few months in standard storage conditions</td>
<td>CFIA approval (The Canadian Food Inspection Agency)</td>
</tr>
</tbody>
</table>

CERTIFICATIONS AND APPROVALS

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RECOMMENDED USE

MATERIALS TO BE GALVANIZED

New and Existing Steel
Weathered Galvanized Structures
Stainless Steel
Aluminum
Weathered Steel (Corten)
Copper
Cast Iron and Aluminum

EXPERTISES

Marine Environments / Boats / Barges / Docks
Bridges / Foot Bridges/Dams
Electrical Communications Towers
Buildings / Roofs / Stairs / Ramps / Water treatment plants / Water towers
Silo tanks / Food factories / Various structures
Military: Vehicles / Boats / Armored - Transport: Trucks / Trailers
Paper mills / Chemical plants / Refineries / Mines

PACKAGING FORMAT

<table>
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<tr>
<th>Pack Size</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 kg (Format 946 ml / 1 US pint)</td>
<td>Galvanol™ (1 liter - 4 liters - 20 liters)</td>
</tr>
<tr>
<td>12 kg (Format 5 liters / 1.3 US gallons)</td>
<td></td>
</tr>
</tbody>
</table>

SAFETY

Make sure that you understand and respect this technical data sheet, contact our customer service if necessary. Also consult the safety data sheet before use, contact us for the updated version

Use adequate personal protective equipment in accordance with regulations
**PERFORMANCE CHARACTERISTICS**

<table>
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<th>Drying and curing times</th>
<th>Characteristics</th>
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</thead>
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<tr>
<td>Application of 5.0 ml (125 µm) wet</td>
<td>Zinc Quantity 88% (± 2%) in the dry layer</td>
</tr>
<tr>
<td>55°F (1.7°C)</td>
<td>77°F (25°C)</td>
</tr>
<tr>
<td>50% relative humidity (RH)</td>
<td>Zinc Purity 1.99995% purity</td>
</tr>
<tr>
<td>Touch dry</td>
<td>1.5 hours</td>
</tr>
<tr>
<td>Dry to handle</td>
<td>2.25 hours</td>
</tr>
<tr>
<td>To recoat</td>
<td>Minimum: 4 hours</td>
</tr>
<tr>
<td>Maximum: unlimited</td>
<td>unlimited</td>
</tr>
<tr>
<td>Fully cured</td>
<td>15 days</td>
</tr>
</tbody>
</table>

The drying process varies depending on temperature and humidity.

Relative humidity during the application and drying: minimum 30% maximum 99%

**Test name** | **Standard** | **Rust-Anode® Primer** | **Hot-dip Galvanized**
---|---|---|---
Cyclic Corrosion | ASTM D5894-10 (cold periods) | Rust: none - Classified 10 | Rust: none - Classified 10 |
Immersion corrosion (salt water) | ASTM G44-99 (2013), Sodium chloride 3.5% | Blister: None - Classified 10 | Blister: None - Classified 10 |
| Results at 90 days | R: <0.01% - Classified 9 | Rust: 0.01% - Classified 9 | Rust: 33% - Classified 2 |

Products tested: Rust-Anode® Primer versus Hot Dip Galvanization Application of a single coat of Rust-Anode® Primer without any paint coating.

**Performance in hot and cold weather**

Between -62°C to +120°C (-80°F to +250°F)

**Application temperature (substrate)**

From -5 °C to + 37 °C (23 °F to 98 °F)
The curing time may vary depending on the ambient temperature and the relative humidity.

Moisture cured, allows application regardless of the dew point. The surface must be dry.

**Estimated performance**

Provides a lifetime equal to hot-dip galvanizing under the same exposure conditions.

**Resistance in salt water and fresh water immersion**

High level of resistance

See performance tests ASTM G44-99(2013)

Impact: 0,625 inches ASTM D2794, 100 pounds No cracks

Resistance: 1/4 inch ASTM D522, tapered mandrel 1/4, 180° Elongation: 15%

**Resistance to Acids / Bases**

pH of 5.5 to 12.5

No cracking – Allows the dilatation of the metallic support when bent.

See performance tests ASTM D522, tapered mandrel 1/4, 180°

Combustion toxicity DEF STAN 02-713 Conform

UV ASTM G154-12a Little effect

Salt Spray ASTM B117 ISO 9224-6/7253 Excellent

**Chemical Resistance / Immersion 30 days**

**Weldability**

A thin layer (40µm or 1.5 mls dry) can be welded without contaminating the weld (X-ray)

**Duplex system**

If necessary

Can be covered with most paint products, if necessary (Avoid Alkylds)

ex: Polyurethane or Epoxy (Avoid Alkylds)

If the maximum recovery time is exceeded, apply a thin layer of 2.0 mls (50 µm) minimum of Rust-Anode Primer and, when dry, apply your paint

Contact our technical support

**Conductivity**

The dry film has an excellent conductivity, and the application by electrostatic is possible

Contact our technical support before application

**THEORETICAL COVERAGE**

At 1 ml (25µm) dry "1354 PF / 12Kg or 255m² / 12Kg"

ASTM D2697 - Dry extract by volume 66%

Consult our calculation of required paint.

Consult our theoretical cover guide

For information only

For information only

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**Technical Data Sheet R.A.P.**

July 2020

Production of RUST-ANODE® SPIRE

Belgium

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### GENERAL CONDITIONS FOR SURFACE PREPARATION

The surface must be clean; free of brittle material and/or rust, flash rust, corrosion (black iron oxide), grease, cutting fluids or other visible and non-visible contaminants.

All mill scale must be removed according to a level of cleanliness NACE 3 / SSPC-SP6.

The sharp edges as well as the drill holes should be chamfered. Prioritize continuous weld beads.

If traces of black iron oxide (corrosion) are present, they must clean to bare metal.

For cleaning surfaces, use Acetone, MEK or xylene solvent. Do not use Galvanol, Varsol, Turpentine and/or other products leaving a residual factor on the surfaces.

Then perform the recommended surface preparation.

### NON-VISIBLE CONTAMINANTS DECONTAMINATION - SOLUBLE SALTS

In the presence of a potentially and geographically saline environment, tests must be carried out and the salts must be removed.

The presence of salts must be less than 7μg/ cm².

If necessary, the CHLOR-RID or HOLDTIGH product must be used and all other products must be approved in writing by Galvatech 2000. Observe the manufacturer’s recommendations for dilution.

Contaminants shall be eliminated before the surface preparation.

Then perform the recommended surface preparation.

### NOTE

In the case of an industrial, commercial or institutionnal project as well as in the presence of any special conditions (immersion, aggressive environment, saline) these data CAN BE adapted, contact our technical support 1 888 743-2046 or by email info@galvatech2000.com before application.

### NEW AND EXISTING STEEL

(SSPC-SP6 / NACE 3) Commercial blast cleaning: A high degree of anchor profile is not necessary.

(SSPC-SP3) Power tool cleaning: Shall be free of all loose materials. Counter to this specification all mill scale shall be removed.

(SSPC-SP8) Chemical pickling; all mill scale shall be removed. Apply the Rust-Anode® Primer before visible flash rusting occurs.

(SSPC-SP10 / NACE 2) Near-white metal blast cleaning: Required for steel under immersion exposure.

### ALUMINUM, STAINLESS STEEL OR COPPER

The surface must be free of grease substances, dust, oxide, friable material or other contaminants.

There is no need to abrade surfaces when considered bare and clean.

After cleaning, apply directly when the surfaces are dry.

Contact our technical support for more specifications 1-888-743-2046 before application.

### EXISTING PAINT COATING

Perform adhesion testing on the paint remaining after cleaning (ASTM D3359).

Perform a test on a small area to ensure products compatibility.

Never apply to bituminous coatings and aluminum paints.

Contact our technical support for more specifications 1-888-743-2046 before application.

### OLD AND NEW HOT DIP GALVANIZATION OR METALLIZATION

The surface shall be free of rust dust, friable material, oils, grease or other contaminants, including surface salts and the presence of zinc oxide in white powder or crust.

For freshly galvanized surfaces (0-1 year) Check for presence of passivating treatments on galvanizing (e.g., Chromating): “Chromating” refers to the treatment of galvanized parts to prevent the occurrence of wet storage stain. The presence of chromates or other passivating treatments is detected by using a solution of copper sulphate. (SSPC SP16)

Contact our technical support for more specifications 1-888-743-2046 before application.

### CONCRETE

Before the installation of galvanized steel to concrete you can apply a generous coat of Rust-Anode® Primer on clean concrete.

### ALUMINUM AND STEEL CASTINGS

The surface must be free of rust dust, brittle material, oils (cutting and piercing oils), grease or other chemical contamination.

Sandblast (SSPC-SP6), (SSPC-SP3 for small areas).

Sandblast, Clean then apply directly.

Contact our technical support for more specifications 1-888-743-2046 before application.
**APPLICATION METHODS - GENERAL INFORMATION**

<table>
<thead>
<tr>
<th>GRAVITY GUN, PRESSURE POT</th>
<th>&quot;AIRLESS&quot; SPRAY APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dilute 4 to 10% with Galvanol ™ (perform pre-tests)</td>
<td>Dilute up to 5% with Galvanol ™ if necessary (perform pre-tests)</td>
</tr>
<tr>
<td>For gravity guns and pressure pots, we recommend using a needle of 1.8 to 2.2mm</td>
<td>It is recommended to apply at low pressure between 1200 and 1300 lbs</td>
</tr>
<tr>
<td>Conventional spray gun, by suction feed are not recommended (Product too heavy)</td>
<td>Fluid tips recommended for large jobs (e.g. 3-17, 4-21, 5-17)</td>
</tr>
<tr>
<td>Suitable for application by electrostatic gun (prior tests is recommended)</td>
<td>Fluid tips recommended for small jobs (ex: 1-15, 2-13, 2-15)</td>
</tr>
<tr>
<td>Clean the equipment properly after use</td>
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</tr>
</tbody>
</table>

**TOUCH-UP (facilities or/and on site)**

At all times, if touch-ups are necessary, remove the contaminants then apply a generous coat with a paintbrush or a roller and/or a paint gun to, at least, reaching the same thickness as the surrounding layer.

**APPLICATION WITH A BRUSH OR A ROLLER**

Ready to use after being thoroughly mixed

Usually, no dilution is needed. However, it can be diluted with the Galvanol ™ to ease the application (20% maximum dilution)

The time between coats will depend on the ambient temperature and relative humidity

On average, we can expect a dry thickness of 2 mils (50µm) per layer. Over thicknesses could increase the drying time and are not recommended

The use of a natural bristle paintbrush is recommended

**DISCLAIMER**

The Rust-Anode® Primer is not designed to be applied in an excess thickness of more than 15.0 mils dry (375 µm) and shall be applied in layers of +/− 5.0 mils (125 µm) wet

Over thicknesses may cause small cracks or a granular effect on the treated surface. In order to not affecting the quality of the protection as well as its aesthetic, it is necessary to perform touch-ups

For dilution, the use of the GalvanolMC (#300037) as thinner is the only product approved. All other products will result in a fatal effect on the chemical composition of the product. However, paint equipment can be cleaned with any gun washer solvent as long as it does not leave a residual factor

The information contained in this document is not exhaustive. Ensure to also consult the material safety data sheet of the product as well as to follow any application protocol or other specific instructions that may be issued by Galvatech. Anyone using the product in a manner other than that recommended (without prior written confirmation from Galvatech as to the suitability of the intended method of use), is being exposed to damage to properties or persons and does so at his own risk. All our recommendations or product statements are correct to the best of our knowledge, but Galvatech cannot guarantee neither the quality or condition of the application surface nor the other factors in the use and application of this product that may affect its performance. Accordingly, unless confirmed in writing by Galvatech, any warranty as to the performance of the product or the achievement of specific results is expressly excluded. Galvatech will not be liable for any loss or damage incurred in connection with storage or use of the product not in accordance with the instructions issued by Galvatech. All other warranties or representations, express or implied, by law or otherwise, including, without limitation, any implied warranties of merchantability or fitness for a particular purpose, are hereby expressly excluded. The information contained in this document is subject to change based on the evolving knowledge of the product and any improvement thereof. It is the responsibility of the user to check with a representative of Galvatech that it has the current version of this technical data sheet and of the material safety data sheet before using the product. All sales are subject to our terms and conditions of sale, available on our website or from a representative of Galvatech.