



Spécialiste en Galvanisation / Galvanizing Specialist

Distributeur exclusif en Amérique du Nord, au Mexique, en Nouvelle-Zélande et en Australie
Canadian exclusive master distributor for North America, Mexico, New Zealand and Australia

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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

Provides cathodic/sacrificial protection by the same mechanism as galvanizing

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

Approved to refurbish the zinc protection of hot-dip galvanized or metalized 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

Meets the performance requirements of ASTM A-780

Complies with the composition and performance requirements of SSPC-SP20 TYPE II LEVEL 1

Zinc dust meets or exceeds the requirements for ASTM D520, Type III

Can be recovered by itself at any time without abrasion

Possibility of being covered with a suitable coating

STORAGE

Keep in a dry area, between 5°C and 20°C (41°F to 68°F)

Keep away from direct sun exposure

Unopened pail shelf life: 24 months

Opened pail: Few months in standard storage conditions

CERTIFICATIONS AND APPROVALS

MTQ and MTO certified (Ministry of Transportation Québec and Ontario, Canada)

Hydro-Québec approval - SN31.101 (maintenance of electrical substations)

Hydro-Québec approval - TET-LIA- N-SUP0012 (Towers maintenance)

CFIA approval (The Canadian Food Inspection Agency)

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

Contact our technical support 1-888-743-2046

PACKAGING FORMAT

2 kg (Format 946 ml / 1 US pint)

12 kg (Format 5 liters / 1.3 US gallons)

Solvent: Galvanol™ (1 liter - 4 liters - 20 liters)

SAFETY

Make sure to understand and respect this technical data sheet, contact our customer service if necessary
Consult the safety data sheet before use, contact us for the updated version

Use adequate personal protective equipment in accordance with regulations

PERFORMANCE CHARACTERISTICS									
Drying and curing times Application of 5.0 mils (125 µm) wet						Characteristics			
		35°F (1.7°C)	77°F (25°C)	100°F (38°C)		Zinc Quantity		88% (± 2%) in the dry layer	
		50% relative humidity (RH)				Zinc Purity		± 99.995% purity	
Touch dry		1.5 hours	45 minutes	45 minutes		Ready for use		Single component	
Dry to handle		2.25 hours	1 hour	1 hour		Colour		Matt gray RAL # 7005 (not colorable)	
To recoat		Minimum	4 hours	3 hours	3 hours	Weight		2.50 Kg / dm3 ± 0.1	
		Maximum	unlimited	unlimited	unlimited	VOC (solvents)		285 grams / liter (± 10)	
Fully cured		15 days	10 days	10 days		Flash point		52 °C (125.6 °F)	
The drying process varies depending on temperature and humidity Relative humidity during the application and drying: minimum 30% maximum 99%						Solvent		Galvanol™ (# 300037)	
						See below for other performance characteristics			
Minimum zinc thickness references	The thickness must be adapted according to the Galvanization Standard ASTM A123 ¹ Consult our chart for minimum thicknesses recommendation.					Test name	Standard	Rust-Anode® Primer	Hot-dip Galvanized
						Evaluated by ASTM D 610 (rust) and ASTM D714 (blister)			
	¹ Recommended minimum dry zinc thicknesses VS steel thicknesses					Cyclic Corrosion 10,000 hours	ASTM D5894-10 (cold periods)	Rust: none - Classified 10 Blister: none - Classified 10	Rust: none - Classified 10 Blister: none - Classified 10
						Immersion corrosion (salt water) Results at 90 days	ASTM G44-99 (2013), Sodium chloride 3.5%	Blister: None - Classified 10 Rust: <0.03% - Classified 9	Blister: None - Classified 10 Rust: 33% - Classified 2
Steel (mm)	3.2	6.35	12.7	19.1	25.4	Steel samples used for tests Surface preparation: SSPC-SP10 / NACE 2 / SA 2.5 Products tested: Rust-Anode® Primer versus Hot Dip Galvanization Application of a single coat of Rust-Anode® Primer without any paint coating			
Steel (in)	1/8	1/4	1/2	3/4	1.0				
Dry Zinc (µm)	50 - 75	100 - 125	125 - 150	150 - 175	200 - 225				
Dry Zinc (Mils)	2.0 - 3.0	4.0 - 5.0	5.0 - 6.0	6.0 - 7.0	8.0 - 9.0				
IMPORTANT: In an aggressive environment (see above) and / or immersion, contact our technical support before application									
Performances in hot and cold weather	Between -62°C to +120°C (-80°F to +250°F)					Test name	Standard	Rust-Anode® Primer	
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.					Pull-off adhesion	ASTM D4541	1775 PSI 12,24 MPa	
						Organic zinc rich	ONGC -1,181/CAN/ CGSB-1.181-92	Conform	
Estimated performance	Provides a comparable lifetime to hot-dip galvanizing under the same exposure conditions					Abrasion	ASTM D4060-14 1000 cycles CS10, load 1000g	116 mg	
						Adhesion	ASTM D3359	5B	
Resistance in salt water and fresh water immersion	High level of resistance See performance tests ASTM G44-99(2013)					Hardness	ASTM D3363	5H	
						Impact impactor 0,625 inches	ASTM D2794, 100 pounds	No cracks	
Resitance to Acids / Bases	PH of 5,5 to 12,5					Flexibility - Folding - Plasticity	ASTM D522, tapered mandrel 1/4, 180°	Resistance: 1/4 inch Elongation: 15%	
						Combustion toxicity	DEF STAN 02-713	Conform	
High plasticity	No cracking – Allows the dilatation of the metallic support when bent See performance tests ASTM D522, tapered mandrel 1/4, 180°					UV	ASTM G154-12a	Little effect	
						Salt Spray	ASTM B117/ ISO 12944-6/7253	Excellent	
Weldability	A thin layer (40µm or 1.5 mils dry) can be welded without contaminating the weld (X-ray)					Chemical Resistance / Immersion 30 days			
						Diesel	Blister: none Corrosion: none Adhesion: 100% Hardness: H		
							Gaz	Blister: none Corrosion: none Adhesion: 100% Hardness: 2H	
						Acetone / Urea		Blister: none Corrosion: none Adhesion: 100% Hardness: H	
Conductivity	The dry film has an excellent conductivity, and the application by electrostatic is possible * Contact our technical support before application						Hydraulic Fluid (Skydrol)		Blister: very little Corrosion: none Adhesion: 100%
						Brake Fluid		Blister: none Corrosion: none Adhesion: 100%	
THEORETICAL COVERAGE									
At 1 mil (25µm) dry "1354 Pi² / 12Kg or 125m² / 12kg"									
ASTM D2697 - Dry extract by volume 71%									
Consult our calculation of required pails (for information only)						Consult our theoretical cover guide (for information only)			

GENERAL CONDITIONS FOR SURFACE PREPARATION
<p>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</p> <p>Must remove all mill scale according to a level of cleanliness NACE 3 / SSPC-SP6</p> <p>The sharp edges as well as the drill holes should be chamfered. Prioritize continuous weld-beads</p> <p>If traces of black iron oxide (corrosion) are present, they must be cleaned to bare metal</p> <p>To solvent clean surfaces, use acetone, MEK, or xylene. Do not use Galvanol, Varsol, Turpentine and / or other products leaving a residual factor on the surfaces</p> <p>Then perform the recommended surface preparation</p>
NON-VISIBLE CONTAMINANTS DECONTAMINATION - SOLUBLE SALTS
<p>In the presence of a potentially and geographically saline environment, tests must be carried out and the salts must be removed</p> <p>The presence of salts must be less than $7\mu\text{gr} / \text{cm}^2$</p> <p>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</p> <p>Contaminants shall be eliminated before the surface preparation</p> <p>Then perform the recommended surface preparation</p>
NOTE
<p>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 MUST BE adapted, contact our technical support 1 888 743-2046 or by email info@galvatech2000.com before application</p>
NEW AND EXISTING STEEL
<p>(SSPC-SP6 / NACE 3) Commercial blast cleaning - A high degree of anchor profile is not necessary</p> <p>(SSPC-SP3) Power tool cleaning - Shall be free of all loose materials. Counter to this specification all mill scale shall be removed</p> <p>(SSPC-SP8) Chemical pickling; all mill scale shall be removed. Apply the Rust-Anode® Primer before visible flash rusting occurs</p> <p>(SSPC-SP10 / NACE 2) Near-white metal blast cleaning; Required for steel under immersion exposure</p>
ALUMINIUM, STAINLESS STEEL OR COPPER
<p>The surface must be free of grease substances, dust, oxide, friable material or other contaminants</p> <p>There is no need to abrade surfaces when considered bare and clean</p> <p>After cleaning, apply directly when the surfaces are dry</p> <p>Contact our technical support for more specifications 1-888-743-2046 before application</p>
EXISTING PAINT COATING
<p>Perform adhesion testing on the paint remaining after cleaning (ASTM D3359)</p> <p>Perform a test on a small area to ensure products compatibility</p> <p>Never apply to bituminous coatings and aluminum paints</p> <p>Contact our technical support for more specifications 1-888-743-2046 before application</p>
OLD AND NEW HOT DIP GALVANIZATION OR METALLIZATION
<p>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</p> <p>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)</p> <p>Contact our technical support for more specifications 1-888-743-2046 before application</p>
CONCRETE
<p>Before the installation of galvanized steel to concrete you can apply a generous coat of Rust-Anode® Primer on clean concrete</p>
ALUMINUM AND STEEL CASTINGS
<p>The surface must be free of rust dust, brittle material, oils (cutting and piercing oils), grease or other chemical contamination</p> <p>Sandblast (SSPC-SP6), (SSPC-SP3 for small areas)</p> <p>Sandblast , Clean then apply directly</p> <p>Contact our technical support for more specifications 1-888-743-2046 before application</p>

APPLICATION METHODS - GENERAL INFORMATION	
<p>The product is ready to use for application, open the pail and mix at low speed until completely homogenized, do not use an automatic paint shaker</p> <p>For drying and curing process to be functional, a minimum of 30% relative humidity shall be present during application until the coating is dry to handle</p> <p>The application may require more than one coat depending on the dry film thickness of zinc required or the complexity of the design</p> <p>Apply a stripe coat with a paintbrush on the welds, bolts, edges, hard to reach areas, and around of the interface plates, etc</p> <p>The application must be carried out in maximum layers of +/- 5.0 mils (125 µm) wet per coat and use Galvanol thinner at a ratio of 4% up to 10%</p> <p>Do not apply more than 8 mils (200 µm) wet per coat</p> <p>Refer to our drying and curing time table for the application of a second coat</p> <p>The excess thickness (> 15.0 mils) (375 µm) is to be avoided (eg: the hollow of a stiffener)</p> <p>The use of a wet gauge is highly recommended</p>	
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	
GRAVITY GUN, PRESSURE POT	"AIRLESS" SPRAY APPLICATION
Dilute 4 to 10% with Galvanol™ (pre-test recommended)	Dilute up to 5% with Galvanol™ if necessary (do a pre-test)
For gravity guns and pressure pots, we recommend using a needle of 1.8 to 2.2mm	Pressure between 1200 and 1300 lbs
Conventional spray gun, by suction feed are not recommended (Product too heavy)	Fluid tips recommended for large jobs (e.g. 3-17, 4-21, 5-17)
Suitable for application by electrostatic gun (prior tests is recommended)	Fluid tips recommended for small jobs (ex: 1-15, 2-13, 2-15)
Clean the equipment properly after use	Clean the equipment properly after use
APPLICATION WITH A BRUSH OR A ROLLER	
<p>Ready to use after being thoroughly mixed</p> <p>Usually, no dilution is needed. However, it can be diluted with the Galvanol™ to ease the application (20% maximum dilution)</p> <p>The time between coats will depend on the ambient temperature and relative humidity</p> <p>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</p> <p>The use of a natural bristle paintbrush is recommended</p>	
DISCLAIMER	
<p>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</p> <p>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</p>	
<p>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</p> <p>Paint equipment can be cleaned with any gun washer solvent as long as it does not leave a residual factor</p>	
<p>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 <u>terms and conditions of sale</u>, available on our website or from a representative of Galvatech.</p>	