



CORROLON III™



Product Code # SOL-XG105

High Build Solution for Hostile Environments: Combining Non-Stick Performance With Chemical Protection And Re-Tolerance Applications

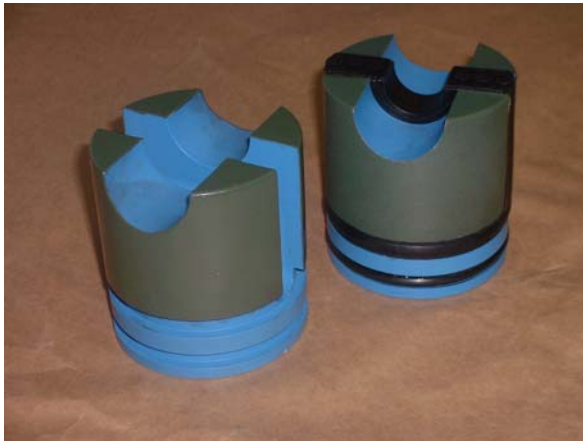
- ▶ Reduces wear and friction on metal substrates
- ▶ Continuous Operating Temperature 500°F (260°C)
- ▶ Non-stick characteristics reduce galling & seizing
- ▶ High Build application allows for part re-tolerances
- ▶ Enhanced erosion and corrosion protection
- ▶ Excellent chemical protection properties
- ▶ Allows engineers a variety of metal substrates
- ▶ Application allows custom masking to parts

CORROLON III™ is a premium resin bonded, three-coat finish with superior non-stick properties. This specially developed coating system protects metal substrates against wear, galling, friction, and corrosion. This coating (a part of the CORROLON family of industrial coatings) inhibits galvanic response, prevents operational plugging, reduces nuclei site formation, and dramatically improves corrosion resistance for high build applications.

This coating permits engineers to specify protective enhancement without affecting critical tolerances in their designs. In addition, this superior coating has proven itself as an exceptional release agent against asphaltines, scale buildup, and severe H₂S service. Its chemical matrix bonds equally well to ferrous and non-ferrous materials, thereby enabling most industrial applications the flexibility to work in materials suited to their specific requirements.

Innovation and High-Performance Solutions

Engineering Data & High Performance Characteristics:



CORROLON III™ is applied by means of a patented process that evenly coats metal surfaces and ensures a completely uniform coating for all of your high build specifications. Pictured above, CORROLON III (Blue) in order to provide corrosion protection and CORROLON VIII (Green) for abrasion.

Corrosion Protection

CORROLON III™ resists organic and inorganic compound attacks by means of a barrier (applied in multiple coats) which impregnates the metal substrate. In environments where corrosion protection is important, process equipment and function-to-success parts are enhanced by reducing oxidation, fretting (vibration), galvanic corrosion, and increasing chemical resistance.

Hardness

CORROLON III™ has a hardness rating (ASTM D 785) of Rockwell 60 (+-2.0) and Pencil Hardness 3-4 H.



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Custom Global Coatings



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Wear Resistance

As a pioneer in reducing wear to parts, CORROLON III™ prevents asperities (metal surface peaks) from making physical contact. The coating acts as a cushion by spreading high point loads in bearings and reducing element fatigue. Another advantage of this coating is its ability to reduce “boundary lubrication failure”, caused when equipment is frequently started and stopped; thereby allowing oil films to become too thin to function as a lubricant.

Thickness

CORROLON III™ provides an even application that enables protective enhancement without affecting critical engineering tolerances in designs. This coating system is uniform in thickness and range from 0.0012” to 0.003” (+0.0003”). The high build element of this downwell coating provides a versatile application for re-works and part tolerance build-ups. *This coating is post-process machinable.*

Temperature Specifications

CORROLON III™ operates very efficiently in extreme temperature environments. The thermosetting resins in this innovative coating enable it to perform in both a cryogenic and high temperature setting. Coated parts exhibit strength and non-stick properties, remaining highly flexible in demanding industrial use.

Continuous Operating Temp 500°F (260°C)
Intermittent Temperature 555°F (290°C)

Noise Reduction

CORROLON III™ absorbs energy and transmits reduced resonance to surfaces under impact and in various conditions of industrial vibration. In most cases, noise is effectively dampened by coatings of 25 to 40 microns/0.001 to 0.0015 in.

Non-Stick (Release) Properties

Distinct from friction, release is the property of a metal surface that affects the ability of a substance to adhere to it. CORROLON III™ has almost the lowest coefficient of friction known to man. This means that buildup of foreign particles (scale, ice, dirt, food, and the like) will be dramatically reduced on coated parts, resulting in minimal contamination and plugging. Mechanisms that require “fail-safe” operation under critical circumstances are greatly enhanced in security.

FDA /CFIA Compliance

Utilized in Foodservice processing equipment and cookware applications for its non-stick properties, CORROLON III™ is FDA (US) and CFIA (Canada) compliant.



Applied for aggressive gas and downwell service, CORROLON III™ is seen here on 2 5/8” J55 Tubular Pipes (32 Ft. Randoms) for chemical environments.



High Performance Applications

- ▶ Downwell Packer Systems
- ▶ E.S.P. Stages
- ▶ Latch Couplings
- ▶ Military Applications
- ▶ Pipes & Tubing
- ▶ Nuts & Bolts
- ▶ Fasteners and Threaded Parts
- ▶ Mining Pumps
- ▶ Processing Rollers
- ▶ Gears & Springs
- ▶ Actuators
- ▶ Completion Systems and Fishing Tools
- ▶ Aerospace & Aeronautical
- ▶ Industrial Housings
- ▶ Tubulars & Oil Pipe
- ▶ Offshore Platforms
- ▶ Valves
- ▶ Fail-Safe Mechanisms



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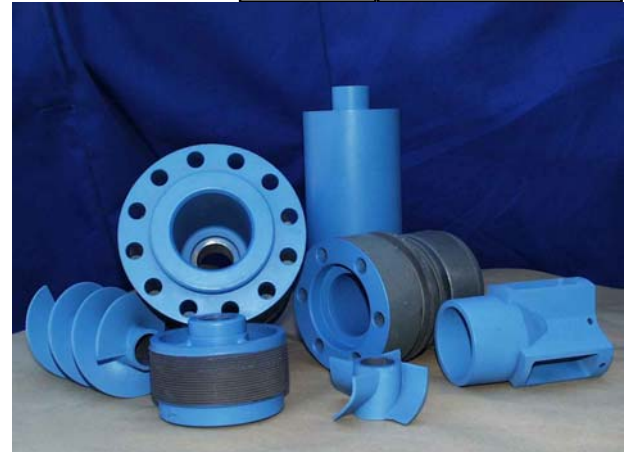
CORROLON III		
DEVELOPMENT ENGINEER:	M. MILLER	
TECHNICAL MANGER:	R. HUIZINGA	
APPROVAL BY:	M. FEARON	
REVISION 2.2.1	ISO DATA SHEET #742-B-2	

Scale & Asphaltine Resistance

Nuclei site formation is a common problem in both sour gas and oilfield industrial applications. CORROLON III™ provides a barrier between the hostile molecules and the protected substrate. An unprotected substrate is prone to scale and corrosion attack.

Sealing

CORROLON III™ in thicker applications deforms appropriately under high pressure to form a tight thread-to-thread or seal-to-seal union, resulting in lower seating torques as much as 60 percent.



Chemical Corrosion Guideline Table:

Chemical	Concentration %	Hours	Effect on Coating Function
Water			
Deionized—Boiling	100	1000	none
Salt (immersed)	30	4000	none
Salt (Spray)	5	1000	none
Tap—250°F (120°C) @ 10,000 psi	100	24	none
Acids			
Hydrochloric	36	24	none
Hydrochloric	15	150	slight
Hydrochloric	2 pH	300	none
Hydrochloric 125°F (50°C)	2 pH	300	none
Sulfuric	25	1500	none
Nitric	35	24	none
Picric	saturated solution	120	none
Base			
Caustic	2	24	none
Caustic	100	336	slight
Caustic	12.5 pH	150	slight
Caustic	9.5 pH	300	none
Caustic 125°F (50°C)	9.5 pH	300	slight

Chemical	Concentration %	Hours	Effect on Coating Function
Solvents			
Acetone	100	1500	none
Benzene	100	1500	none
DMAC	100	1500	none
Ethanol	100	1500	none
Fluorocarbons (12, 22, 113)	100	1000	none
MEK	100	120	none
Methanol	100	1500	none
Methylene Chloride	100	1500	none
Perchloroethylene	100	1500	none
Phenol	5	120	none
Toluene	100	120	none
Xylene	100	1500	none
Other Fluids			
Skydrol (hydraulic fluid)	100	1500	none
JP-4 (jet fluid)	100	1500	none
Break Fluid (auto)	100	1500	none
H ₂ O + gas at 250°F (120°C), @ 2000 psi	79% CH ₄ , 6% CO ₂ , 15% H ₂ S	24	none

* All data reflected above was conducted in room temperature and assumes pinhole-free coating film.