
**PRODUCT
INFORMATION****NOX-RUST® R-576-95****Description**

NOX-RUST® R-576-95 is a zero V.O.C., ambient cure coating formulated to provide an abrasion resistant film

that has similar performance properties to the current P.V.C. used on automotive underbodies.

Physical Properties**Typical Values**

Appearance:	Grey, pourable liquid with slight gel
Odor:	Slight ammonia odor
Specific Gravity:	1.34
Weight per Gallon:	11.2 lbs/gal
Viscosity, Brookfield RV #5 @ 10 rpm, @ 25°C:	10,000-15,000
Percent Non-Volatiles	
By Weight:	61.0
By Volume:	48.0
VOC Content, EPA Method 24 Calculated Value:	None
Flash Point:	None - Water Base

Typical Performance Properties

Storage Stability, 6 Months @ 25°C:
Minimal water separation; no change in appearance of liquid or dried film

Note: This is a water based product.
Store above 5°C.

Sag Resistance, 750 microns (30 mils):
None observed.

See attached results of performance testing of film.

Surface Preparation

The maximum performance of NOX-RUST® R-576-95 can be achieved only when the metal surfaces to be protected are clean, dry and free of rust, oil and mill scale. Daubert Chemical Company recommends that the metal substrate temperature be 50-95°F (10-35°C) at the time of product application.

Storage

Store NOX-RUST® R-576-95 at temperatures between 50-95°F (10-35°C). Mild agitation is recommended prior to use. Do not freeze Nox-Rust® 576-95.

Application

NOX-RUST® R-576-095 can be applied by brush, or sprayed by using an airless pump. Listed below are the recommended application parameters:

Airless Pump Type: Stainless Steel
Ratio: 15:1 or greater
Tip Size: Reverse-a-Clean, 4-17 or larger
Filter Size: 60 Mesh
Film Thickness: 500 microns (10 mils) wet
260 microns (5 mils) dry
Dry Time @ 25°C: 30 minutes to touch
90% R.H.: 5 hours to weatherproof

June 23, 2010:kc

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REFER TO MATERIAL SAFETY DATA SHEET FOR HEALTH AND SAFETY INFORMATION.

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CHIP RESISTANT WATER BASE UNDERBODY COATING

Scope: This report will discuss the physical and performance properties of a water based coating designed to prevent chipping, abrasion and corrosion of automobile underbodies.

Initial results indicate that Nox-Rust® R-576-95 will dry at ambient temperature to form a tough, abrasion-resistant film that has similar performance properties to the current PVC coatings used on automobile underbodies.

Listed below are the test results of Nox-Rust® R-576-95 tested against a major automotive engineering specification for an underbody anti-chip coating.

PHYSICAL PROPERTIES		SPECIFICATIONS	RESULTS
Appearance in Container		Gray, thixotropic liquid, free of impurities and lumps. Minimal water separation and pigment settling.	No evidence of particulate matter or lumps. No water separation or settling of pigment.
Specific Gravity ASTM D-1745		1.100-1.300 (20°C)	1.27
Viscosity, Brookfield LV [#5 @ 10 RPM] @ 25°C		20,000-25,000 cps	22,000 cps
Percent Non Volatiles	By Weight	60% Min.	62.5%
	By Volume	Report	52.5%
VOC Content, EPA Method 24 Theoretical Calculated Values		0.034 kg/l (max.)	0 kg/l
PROPERTIES OF MATERIAL		SPECIFICATIONS	RESULTS
1) Storage Stability [168 Hrs @ 40°C]	Appearance in Container	Minimal water separation or settling	No change in appearance observed.
	Viscosity Change on Storage	Rate of Change 30% ± Max.	25,000 cps (10% change)
	Change in Adhesion 100/100	100/100, 2 mm checkers	100/100 No loss of adhesion
	Flexibility [RT][20 mm & 180°mandrel]	Free from cracking or flaking	No evidence of cracking or flaking
2) Sag Resistance, Spray Method, Airless Spray, 15:1 Pump		Sagging: None at 500 microns	None
		Sagging: Measure degree at 750 microns	None
3) Dry Time	Dry To Touch @ 90% RH, 25°C	35 Minutes Max.	Pass--No Transfer
	Through Dry	24 Hours Max.	Pass--Full Cure

PROPERTIES OF FILM (10 mil dry film over production E-Cote panels)	SPECIFICATIONS	RESULTS
State of Painted Surface [72 Hrs @ RT]	Free from cracking, flaking, pinholes, etc.	No evidence of cracking, pinholes, etc.
Adhesion [Cross Hatch Test]	100/100, 2 mm checkers	100/100--No loss of adhesion
Flexibility [RT] [20 mm, 180°bend]	Free from cracking and flaking	No evidence of cracking or flaking
Impact Resistance [RT] [Nut Drop, 1 kg] [Dupont, 500 gms @ 50-cm]	Free from cracking and flaking	No evidence of film failure
Abrasion Resistance [RT] [Nut Drop, 1 kg]	Recorded	---
Chip Resistance [RT]/72 Hr Salt Spray	Rusting Point 5-Max. in 50 X 70 mm area	No loss of adhesion or rust-through

PERFORMANCE TESTING OF FILM

Panels prepared in the following manner:

- 1) Substrate: Production E-Cote Panels
- 2) Film Thickness: 500 microns wet; 260 microns dry
- 3) Dry Time: 5 Hours @ 25°C, 50% R.H.
- 4) Anti-Corrosion Wax: Panels coated with 10 mils wet of production underbody black wax and air dried 72 hours.

TEST	SPECIFICATIONS	RESULTS	
Test After Environmental Cycles [10 cycles] [16 Hrs. 40°C @ 100% RH; 2 Hrs. @ 40°C; 2 Hrs. R.T.; 2 Hrs., 70°C; 2 Hrs. Salt Spray; equals one cycle.			
1)Test After Environmental Cycles [10 cycles]	State of Painted Surface	Free from cracking, flaking, blistering and discoloration.	No evidence of cracking, flaking, blistering, or discoloration.
	Adhesion [Cross Hatch Test]	100/100, 2 mm checkers	100/100--No loss of adhesion
	Impact Resistance [RT] [Dupont, 500-gms @ 50-cm]	Free from cracking and flaking.	No evidence of film failure.
	Chip Resistance [RT]/72-Hr Salt Spray	Rusting Points 5-Max. in 50 X 70 mm area.	No loss of adhesion or rust-through.

2) Humidity Resistance [50°C, 95% RH, 120-Hrs.]	State of Painted Surface	Free from cracking, flaking, blistering and discoloration	No evidence of cracking, flaking, blistering, or discoloration
	Adhesion [Cross Hatch Test]	100/100, 2 mm checkers	100/100--No loss of adhesion
	Impact Resistance [RT] [Dupont, 500-gms @ 50-cm]	Free from cracking and flaking	No evidence of film failure
	Chip Resistance [RT]/72-Hr Salt Spray	Rusting Points 5-Max. in 50 X 70 mm area.	No rust.
3) Cold Resistance [-40°± 2°C, 3-Hrs.]	Impact Resistance [-40°C] [Dupont 500 gms @ 50-cm]	Free from cracking and flaking	No evidence of film failure
	Chip Resistance [RT]/72 Hr Salt Spray	Rusting Points 5-Max. in 50 X 70 mm area	No loss of adhesion or rust
4) Water Resistance [Immersion Test] [40°C Water, 168 Hrs]		Free from softening, flaking, blistering, discoloration, etc.	No evidence of softening, flaking, blistering, or discoloration
5) Salt Water Immersion [120 Hrs @ 122°F.]		Free from softening, flaking, blistering, discoloration, etc.	No evidence of softening, flaking, blistering, or discoloration.
6) Acid Immersion Resistance, 2 W/V%		Free from cracking, flaking, blistering or softening.	No evidence of cracking, flaking, blistering, or softening of film.
7) Alkali Resistance, 5 W/V% Caustic Soda		Free from cracking, flaking, blistering, or discoloration.	No evidence of cracking, flaking, blistering, or discoloration of film.
8) Corrosion Resistance, Salt Spray, 1000 Hrs		Corrosion from cross cut under 2-mm; no rust from cut.	Pass--No corrosion
9) QUV Weathering, ASTM [QUV Weatherometer 750 Hrs.]	State of Painted Surface	Free from cracking, flaking, blistering, etc.	Pass--No corrosion or evidence of flaking, blistering, or discoloration
	Adhesion [Cross Hatch Test]	100/100, 2 mm checkers	Pass--No loss of adhesion
	Chip Resistance [RT]/Salt Spray, 72-Hrs.	Rusting Points 5-Max. in 50 X 70-mm area.	Pass--No corrosion