

# Introducing New CRILAT 4747 Polymer Emulsion For Direct To Metal (DTM) coating

# New CRILAT 4747 for DTM application



# CRILAT 4747 for DTM application

CRILAT 4747 formulated into paint or coating, it features:

- High gloss finish
- Excellent corrosion resistance (both flash rust and salt fog resistance)
- Excellent adhesion to ferrous substrate in both wet and dry states (steel, Aluminum and galvanized metal)
- High water and chemical resistance
- Excellent surface hardness and block resistance;
- Excellent compatibility with additives and fillers;
- Highly versatile, suitable for use in various formulates;

# CRILAT 4747 for DTM application

Solids content	49 %
Brookfield viscosity	600 cps
pH	8.0
Minimum film-forming temperature (MFFT)	+45 °C
Prevailing particle size	0.09 µm
Glass Transition Temperature (Tg)	+47 °C
Emulsifying system	Anionic/non-ionic

## FILM CHARACTERISTICS

Coalesced film is transparent and glossy

# CRILAT 4747 FORMULATION FOR HIGH GLOSS CORROSION RESISTANCE DTM

COMPONENTS	%W	FUNCTION	Supplier
Water	3,9		
Orotan 681	1,2	dispersant	Dow
Surfynol 104E	0,3	wetting agent	Evonik
Ammonium hydroxide 28%	0,5	pH regulator	
BYK 024	0,4	defoamer	Byk
Titanium dioxide R706	21,4	pigment	Chemours
<b>Crilat 4747 (49% solid content)</b>	<b>56,1</b>	<b>BINDER</b>	<b>VINAVIL</b>
Water	3,2		
Ammonium hydroxide 28%	0,2	pH regulator	
Acticide MBS	0,2	Biocide	Thor
Water	4,1		
Sodium nitrite 4%	1,0	anticorrosion additive	
Rheotech 3800	0,5	acrylic thickener	Arkema
Dowanol DPnB	7,0	Coalescing agent	Dow
Tafigel PUR 80	0,1	PU thickener	Munzing

# CRILAT 4747 formulation for HIGH GLOSS CORROSION RESISTANCE DTM

CHARACTERISTICS	UNIT	CRILAT 4747	
RVT Brookfield Viscosity 20 rpm, 23°C	mPaxs	3300	
pH	1-14	8,53	
Adhesion – Cross cut test	Zinc	5	
	Aluminium	0 – 5 (0 Worst - 5 Best)	5
	Iron		5
	Steel		5
Gloss	20°	51,2	
	60°	unit	80,0
PersoZ Hardness	24 hours	sec	87

# CRILAT 4747 HIGH GLOSS CORROSION RESISTANCE DTM Salt Spary Test

NSS ISO 9227

24 hours

120 hours

264 hours



Paint applied on steel  
(smooth finish) at 200  $\mu\text{m}$   
wet ( $\sim 120 \mu\text{m}$ ). One coat.

ISO 9227 – Chamber T 35°C  
Solution 50g/l NaCl  $\rightarrow$  10,6

- ✓ No blistering formation
- ✓ Minimum rust formation
- ✓ No cracks formation

# HIGH GLOSS CORROSION RESISTANCE DTM:

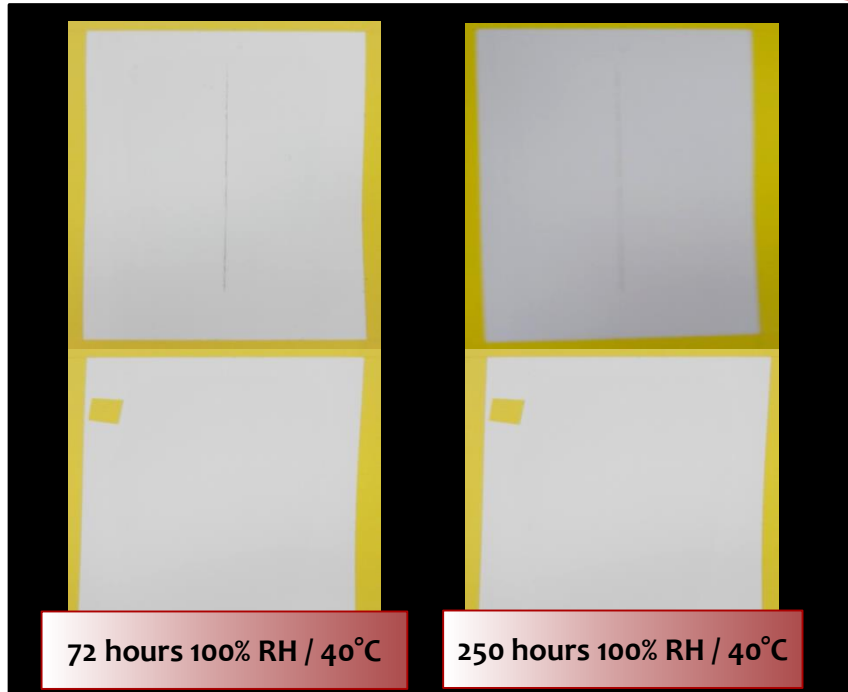
## CORROSION CATEGORIES ISO 12944

CATEGORY CORROSION TEST	CORROSION PROTECTION CLASS	DURATION OF PROTECTION [YEARS]	REC. MIN DFT [ $\mu\text{m}$ ]	CONDENSATION MOISTURE [h]	NSS [h]	EXAMPLE
<b>C1</b> (insignificant)	Short	2 – 5	70	-	-	Interior only, isolated building.
	Middle	5 – 15	70	-	-	
	long	> 15	70	-	-	
<b>C2</b> (light)	Short	2 – 5	80	48	-	Low polluted, dry climate, mostly rural areas.
	Middle	5 – 15	120	48	-	
	long	> 15	160	120	-	
<b>C3</b> (medium)	Short	2 – 5	120	48	120	Urban and industrial atmosphere with moderate pollution, coastal area with low salinity.
	Middle	5 – 15	160	120	240	
	long	> 15	200	120	480	
<b>C4</b> (strong)	Short	2 – 5	160	120	240	Industrial area and coast atmosphere with moderate salts concentration, chemicals plants, swimming pool
	Middle	5 – 15	200	240	480	
	long	> 15	240 - 280	480	720	
<b>C5-I</b> (very strong - industry)	Short	2 – 5	200	240	480	Industrial area with high humidity, aggressive atmosphere, high pollution
	Middle	5 – 15	240 – 280	480	720	
	long	> 15	320	720	1440	
<b>C5-M</b> (very strong – marine water)	Short	2 – 5	200	240	480	Coast and offshore areas with high salt concentration, permanent condensation and high pollution
	Middle	5 – 15	240 – 280	480	720	
	long	> 15	320	720	1440	

HIGH GLOSS C-4747 C3-S or C3-M



# CRILAT 4747 HIGH GLOSS CORROSION RESISTANCE DTM – High Humidity Resistance

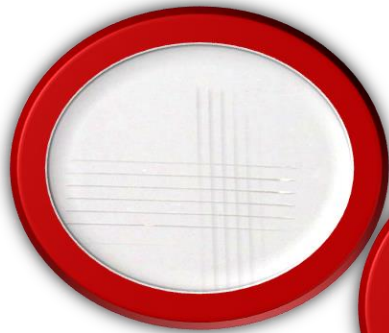


- No blistering formation
- No rust formation
- No cracks formation
- Perfect adhesion (Cross cut) after 250 hours

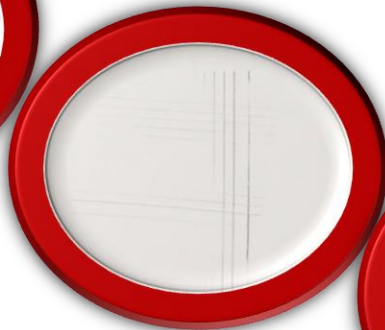
# CRILAT 4747 HIGH GLOSS CORROSION RESISTANCE DTM UNI ISO2409

## Cross-cut Adhesion

Steel



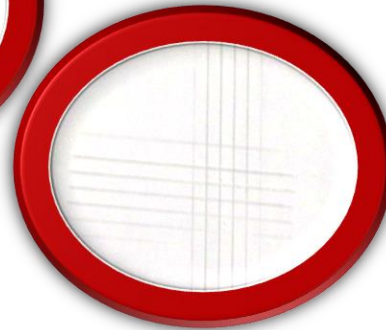
Aluminium



Iron



Zinc



Perfect adhesion on  
different metal substrate

# HIGH GLOSS ENAMEL WITH CRILAT 4747



# HIGH GLOSS ENAMEL FORMULATION

COMPONENTS	%W	FUNCTION	Supplier
Water	3,4		
<b>CRILAT 4747</b>	<b>18,8</b>	<b>BINDER</b>	<b>VINAVIL</b>
Propylene Glycol	3,0	Co-solvent	
Airex 902W	0,3	Disareant	Evonik
EFKA 4560	3,0	Dispersing agent	Basf
TiO <sub>2</sub> type Dupont R706	23,7	Pigment	Chemours
AMP 95	0,2	pH regulator	Angus
Nalzin FA179	0,6	Corrosion inhibitor	Elementis
Texanol	6,9	Coalescing agent	Eastman
ME 93235.E	1,2	Wax	Michelman
<b>CRILAT 4747</b>	<b>37,8</b>	<b>BINDER</b>	<b>VINAVIL</b>
Tafigel PUR 80	0,3	Thickener	Munzing
Water	0,4		
Foamex 1488	0,3	Defoamer	Evonik
Acticide MBS	0,2	Biocide	Thor
<b>Tot</b>	<b>100,00</b>		

# HIGH GLOSS ENAMEL RESULTS

CHARACTERISTICS		CRILAT 4747
RVT Brookfield Viscosity 20 rpm, 23°C		10600
pH		8,49
Adhesion – Cross cut test	Zinc	5
	Aluminium	5
	Iron	5
	Steel	5
Gloss	20°	55,1
	60°	80,1
Persoz Hardness	24 hours	36



For more information on  
Nano Technology products.  
VINA-VIL 4550 and CRILAT 4747



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