

Product data sheet

Resicoat[®] HMM09QF (Corvel[®] 10-8158) Pipe Internal Coating

Product Description

Resicoat[®] HMM09QF (Corvel[®] 10-8158) is a melt-mixed, 100% solids thermosetting epoxy powder coating designed for coating the internal surface of pipe for use in the secondary recovery of oil. The product displayed no swelling, no softening, no blistering, and no loss of adhesion when the coated substrate was exposed to controlled tests at temperatures of up to 230° F.* When applied to primed metal using Resicoat[®] 596301 primer (Corvel[®] EP-10 1P-0010), Resicoat[®] PI HMM09QF (Corvel[®] 10-8158) provides resistance against H₂S, CO₂, CH₄, salt water and petroleum distillates. This product is suitable for high pressure lines up to 6,500 psi, high temperature brine, water injection, and oil and gas transmission pipelines.

	Typical value	Method		
Powder Properties	Binder system	Epoxy resin		
	Specific gravity	1.25 – 1.75	ISO 8130-2	
	Coverage	130 ft ² /lb/mil	calculated	
	Gel time at 400 °F (204 °C)	50 – 100 sec.	ISO 8130-6	
	Storage stability	12 months at ≤ 74 °F (23 °C), stored in dry conditions		
Application Data	Surface preparation	All oil, grease, mill scale, and rust must be removed. A blast profile of 1.5 – 2.5 mils (38 – 64 µm) minimum NACE #1 is required.		
	Anchor profile	1.5 sharp, dense recommended		
	Resicoat[®] 596301 primer, dry thickness	0.5 – 1.0 mil (13 – 25 µm)		
	Preheating	325 – 400 °F (163 – 204 °C) object temperature		
	Post-curing	30 min., 400 °F (204 °C)		
		20 min., 425 °F (218 °C)		
	Recommended film thickness	10 – 15 mils (250 – 375 µm)		
Particle size distribution	< 32 µm = 25 – 45 % < 125 µm = 99 – 100 %	Sympatec ISO 8130-1		
Material Properties	Color	tan		
	Flow	smooth		
	Taber abrasion resistance	55 mg weight loss	ASTM D 1044 CS-17, 1000 g, 5000 cycles	
	Flexibility at 73 °F (23 °C) at 32 °F (0 °C)	4° pass	CSA Z245.20-10	
		3° pass	Film thickness: 8 – 12 mils (200–300 µm)	
	Dielectric strength	800 volts/mil	ASTM D 149, in oil	

* This statement is specifically limited to the evaluation conditions specified in the Material Properties Section of this Product Datasheet. This is not a guarantee of actual performance at the operating temperature. This representation is also subject to the Disclaimer contained on Page 3 of this Product Datasheet.

Autoclave Tests

Resicoat® PI HMH09QF (Corvel® 10-8158) applied over Resicoat® 596301 primer has been evaluated under various autoclave test conditions such as those referenced below:

Autoclave #1

Time:	24 hours	Aramco 09-SAMSS-091 laboratory panels
Temp.:	203° F (95° C)	
Pressure:	3000 psi	no swelling, no softening, no blistering, no loss of adhesion
Discharge:	1 – 3 min.	
Immersion:	50 % immersed in each phase	
Gas:	100% N ₂	Pass X Scribe Adhesion
Liquid:	Treated seawater (ASTM D1141)	1670 – 2038 psi pull off

Autoclave #2

Time:	24 hours	Aramco 09-SAMSS-091 laboratory panels
Temp.:	203° F (95° C)	
Pressure:	3000 psi	no swelling, no softening, no blistering, no loss of adhesion
Discharge:	1 – 3 min.	
Immersion:	50 % immersed in each phase	
Gas:	3 % H ₂ S, 3 % CO ₂ , 94% CH ₄	Pass X Scribe Adhesion
Liquid:	Formation Water Brine: 6.5 % Na, 2.3 % Ca, 3 % Mg, 15 % Cl, 100 ppm SO ₄ , 300 ppm HCO ₃ in DI H ₂ O	528 – 1956 psi pull off

Autoclave #3

Time:	24 hours	Aramco 09-SAMSS-091 laboratory panels
Temp.:	203° F (95° C)	
Pressure:	3000 psi	no swelling, no softening, no blistering, no loss of adhesion
Discharge:	1 – 3 min.	
Immersion:	50 % immersed in each phase	
Gas:	100 % CO ₂	Pass X Scribe Adhesion
Liquid:	Wasia Water: Na = 2500 ppm, Ca = 600 ppm, Mg = 120 ppm, Cl = 4000 ppm, SO ₄ = 1000 ppm, HCO ₃ = 200 ppm, pH = 6.8 – 7.2	2283 – 3181 psi pull off

Autoclave #4

Time:	24 hours	Aramco 09-SAMSS-091 laboratory panels
Temp.:	122° F (50° C)	
Pressure:	covered vented vessel	no swelling, no softening, no blistering, no loss of adhesion
Liquid:	10 Vol.% HCl	
		Pass X Scribe Adhesion
		1017 – 1730 psi pull off

Autoclave #5

Time:	14 days	no swelling, no softening, no blistering, no loss of adhesion
Temp.:	150° F (66° C)	
Pressure:	1800 psi	
Immersion:	50 % immersed in each phase	
Gas:	N ₂	
Liquid:	Methanol	

**Autoclave
Tests
(continued)**

Autoclave #6

Time: 24 hours
Temp.: 230° F (110° C)
Pressure: 2071 psi
Immersion: 50 % immersed in each phase
Gas: 8.5 % CO₂, 2 % H₂S, Bal CH₄
Liquid: Chloride = 100000 mg/l, acetate = 500 ppm,
formate = 250 ppm, pH 2.9 at 77° F (25° C)

no swelling, no softening, no
blistering, no loss of adhesion

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GK

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Disclaimer: This Product Data Sheet is based on the present state of our knowledge and on current laws. The data referring to Powder Properties, Application Data and Physical Tests is based on lab based samples. Factors such as quality or condition of the substrate may have an effect on the use and application of the product. It remains the responsibility of the user to test thoroughly if the product is applicable for the intended use. The use of the product beyond our recommendation releases us from our responsibility, unless we have recommended the specific use in writing. It is always the responsibility of the user to take all necessary steps to fulfil the demands set out in the local rules and legislation. We are not liable for any application-technological advice. The Product Data Sheet shall be updated from time to time. Please ensure you have the latest version before using the product. All products and Product Data Sheets are subject to our standard terms and conditions of sale (GCS). You can receive the latest copy of GCS via internet or our post address. Brand names mentioned in this Product Data Sheet are trademarks of or are licensed to the AkzoNobel group.