

### Comparative Overview for PSX700

<u>Test Description</u>	<u>ASTM Method</u>	<u>PSX700</u>	<u>Competitive Product 'A'</u>	<u>Competitive Product 'B'</u>
General Type		Special epoxy siloxane	Acrylic siloxane	Epoxy acrylic siloxane
1 <u>Components</u>		2	2	2
2 <u>Potlife</u>	@ 70°F/21°C	4 hrs	2 hrs	8 hrs
3 <u>Volume Solids</u>	ASTM 2687 (mod)	90%	76%	75%
4 <u>VOC</u>	Method 24	120 gm/ltr 1.0 lb/gal	172 gm/ltr 1.44 lb/gal	216 gm/ltr calculated (method 24 in test) 1.8 lbs/gal calculated (method 24 in test)
5 <u>Dry Times</u>				
a) Dry Times @ 70°F/21°C	ASTM 1640			
Touch		1 hr	4 hrs	2 hrs
Dry Through		4 hrs	8 hrs	18 hrs
b) Dry Times @ 40°F/4°C	ASTM 1640			
Touch		2-3 hrs	10 hrs	8 hrs
Dry Through		16 hrs	24 hrs	30 hrs
6 <u>Recoat Minimum</u>	@ 70°F/21°C	3 hrs	8 hrs	6 hrs
7 <u>Hardness Developed</u>	ASTM D4366			
@ 7 days		78	33	In test
@14 days		101	57	
@21 days		103	60	
@35 days		110	71	
8 <u>Chemical Spot Test</u>	ASTM D1308 (mod)			
Conc. Ammonium Hydroxide		10	6	10
Conc. Hydrochloric Acid		10	0	8
Conc. Sulphuric Acid		6	6	2
Phenol Solution		0	0	0
Conc. Phosphoric Acid		8	8	8
Acetone		6	8	2
50% Sodium Hydroxide		10	10	8
95% Ethyl Alcohol		6	8	10
Acetic Acid		2	0	0
Total		58	46	48

Note: Tests performed in Ameron's Brea lab and also includes some competitors' reported data.

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General Type		Special epoxy siloxane	Acrylic siloxane	Epoxy acrylic siloxane
9 Approved primer systems per datasheet or reported test data	Zinc rich epoxy	Yes	Yes	Yes
	Inorganic zinc	Yes	Yes	Yes (however we saw application blistering even with mist coat/full coat)
	Epoxy	Yes	Yes	Yes
10 QUV Resistance	QUV B @ 1000 hrs			
a. Gloss Retention		78% (68% @ 2000 hrs)	87% (85% @ 2000 hrs) 78% reported in previous test	65% (their data) @ 1500 hrs
* Note: QUV B is a quick accelerated test that includes a wavelength of light that is particularly aggressive in breaking down organic coatings; however, this wavelength is not abundant in natural sunlight. Therefore, while it provides an idea of comparative performance, it does not necessarily predict actual field performance. Many competitors are using the less aggressive QUV A for their testing.				
b. Color Change	Delta E @ 1000 hrs	2.5	3	1.25 (their data) @ 1500 hrs
c. Gloss Retention	QUV A @ 5000 hrs	93% competitor's comparative test; verification in test by Ameron	85% competitor's data; verification in test by Ameron	97% competitor's data; verification in test by Ameron
11 Florida Weathering	32 months	81% gloss retention	Not available	61% gloss retention, competitor's data
12 Flexibility	Percent elongation	14%	14.4% (Ameron BV did tests over phosphatized steel and found that film tension from curing shrinkage was the same as for PSX700.)	14.3%

Note: Tests performed in Ameron's Brea lab and also includes some competitors' reported data. Brea Technical has addition tests ongoing.

## Comparative Corrosion Resistance Chart

**Test Description and Methods:**

**Salt Fog – ASTM B117**

Corrosion	ASTM D610
Blistering	ASTM D714
Scribe Blistering	ASTM D1654

**Prohesion – ASTM G85**

Corrosion	ASTM D610
Blistering	ASTM D714
Scribe Blistering	ASTM D1654

**Cleveland Humidity – ASTM D2247**

Corrosion	ASTM D610
Blistering	ASTM D714

## Comparative Siloxane Corrosion Results

Systems	Hours	Salt Fog				Cyclic Prohesion				Cleveland Humidity	
		Unscribed Area Area		Scribed Area Area		Unscribed Area		Scribed Area		Blister	Rust
		Blister	Rust	Blister	Creep	Blister	Rust	Blister	Creep		
68HS/700	1000	None	10	None	~	None	10	None	~	None	10
	2000	None	10	None	~	None	10	None	~	Med Dense #8	10
	2700	None	10	None	9	None	10	None	10	Med Dense #8	10
68HS / Product 'A'	1000	None	10	Very few #6	~	None	10	None	~	Few-Med #2, Med Dense #6,8	10
	2000	Very few #8	10	Few #4	~	None	10	None	~	Few-Med#2, Dense#4	10
	2700	Few #8	10	Few #4	9	None	10	None	10	Med Dense #2.4	10
68HS / Product 'B'	1000	None	10	Med #2	~	None	10	None	~	Med #2, Dense #6	10
	2000	None	10	Med #2	~	None	10	None	~	Few #2, Dense #6	10
	3000	In test				In test				In test	

Note: 0 = complete failure, 10 = no change, ~ = not reported

Systems	Hours	Salt Fog				Cyclic Prohesion				Cleveland Humidity	
		Unscribed Area Area		Scribed Area Area		Unscribed Area		Scribed Area		Blister	Rust
		Blister	Rust	Blister	Creep	Blister	Rust	Blister	Creep		
D9HS/700	1000	None	10	None	~	None	10	None	~	None	10
D9/700	3000	None	10	Few #4	~					None	10
D9HS/700	5000	None	10	1-#6	8					None	10
D9HS / Product 'A'	1000	None	10	Med Dense #4	~	None	10	None	~	Med-Med Dense #8	10
	2000	None	10	Med Dense #2	~				~	Med Dense #8	10
	3000										
D9HS / Product 'B'	1000	None	10	None	~	None	10	None	~	None	10
	2000	None	10	Few #4	~					None	10
	3000										
700 DTM	1000	None	10	None	~	None	10	None	~	None	10
	3000	Few #4,6	10	None	10	None	10	None	7	None	10
Product 'A' DTM	1000	6-#6	10	None	~	In test		In test		Few #8	10
	2000	Med #8,6	10	None	~					Med Dense #8	10
Product 'B' DTM	1000	None	10	Med Dense #2	10	None	10	Med Dense#2,4	~	Med Dense #4	10
	2000	None	10	Med Dense #2	10	None	10	Dense #4,6	~	Med Dense #4	10

Note: 0 = complete failure, 10 = no change, ~ = not reported

**Conclusion: Compared to competitive products tested, PSX 700 has the best combination of features to provide enhanced long-term performance.**