



Engineered Polymers International, LLC

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REACTAMINE[®] POLYUREA (EF)

CODE: EF (EXTRAFLEX)

PRODUCT DESCRIPTION:

ReactAmine[®] Polyurea (EF) is a two component 100% solid Polyurea with superior performance in industrial applications. **EF** displays extremely fast cure times with excellent adhesions to different substrates. **EF** can be spray applied at temperatures ranging from 20°F to 150°F. **EF** has excellent chemical and water resistance. **EF** has a temperature range of -40°F to 350°F. **EF** conforms to USDA and FDA guidelines for incidental food contact.

PRIMARY APPLICATIONS:

EF adheres well to several substrates including concrete, steel, and wood. Some typical uses include:

- SECONDARY CONTAINMENT
- WASTEWATER LAGOON AND POOL LININGS
- TABLE EDGING
- COLD STORAGE AREAS
- WASH BAY AND SHOWER LININGS
- COOLING TOWERS
- PETROCHEMICAL REFINERIES
- OILFIELD PIPELINE COATINGS
- WATER PROOFING
- SEWER LINERS
- MANHOLE RESTORATION
- INDUSTRIAL FLOORING
- BRIDGE COATINGS

AVAILABLE COLORS:

- MOST PRIMARY COLORS (INCLUDING WHITE).
- CUSTOM TINTED

TYPICAL PHYSICAL PROPERTIES:

Tensile Strength (PSI)	ASTM D412	1325
Elongation (%)	ASTM D412	950
100% Modulus	ASTM D412	1290
300 % Modulus	ASTM D412	1590
Tear Strength (PLI)	ASTM D2240	460
Hardness (Shore A)	ASTM D1737	72
Flexibility (1/ 8 " Mandrel)	ASTM D1737	Pass
Flashpoint (°F)	ASTM Pensky-Martin	>200
Taber Abrasion (mg loss) CS18 WHEEL 1 kg per 1000 cycles	ASTM D4060	22
Viscosity B Side	CPS	600
Viscosity A Side	CPS	800
Ratio A / B	PBV	1 : 1

Typical Processing Properties:

		<u>Fast</u>	<u>Slow</u>
Gel Time	seconds	9	22
Tack Free Time	seconds	16	35
Open to Foot Traffic	minutes	5	60
Open to Industrial Traffic	minutes	60	120

RECOMMENDED EQUIPMENT SETTINGS:

A-Side Hose Temperature	°F	150
B-Side Hose Temperature	°F	150
Block Temperature	°F	150
Spray Pressure (PSI)	Gusmer, GX-7	2000
Spray Pressure (PSI)	GlasCraft, Probler	1500

APPLICATION EQUIPMENT:

This material must be applied utilizing a high-pressure plural component pump (1:1 by Volume) such as a GlasCraft-MX[®] equipped with a Prober[®] Gun or a Gusmer[®] H-2035 proportioning unit and a Gusmer[®] GX-7 (400 Series) or GX-8 spray gun. This proportioning unit must be capable of supplying the correct pressure and heat for the required hose length on a consistent basis. This characteristic is mandatory to apply this elastomer in a consistent, efficient manner.

INSTALLATION RECOMMENDATIONS:

Substrate surfaces should be free of loose particles, rusts, voids and spills. Chloride, moisture and pH levels should be checked prior to application. Always agitate the B-side before using.

CONCRETE:

Old Concrete – Sandblasting, shot blasting or water blasting is highly recommended to remove surface contaminates. Any oils or fats must be removed prior to product application. Acid etching may be required (followed by a thorough rinsing) to open the pores of the concrete to accept a primer coat. **ReactAmine[®] Primer** is recommended for **ReactAmine[®] Polyurea (EF)**. A minimum 40-mil coating of **EF** is generally recommended for chemical and abrasion resistance.

New Concrete – The concrete should be allowed to cure for a minimum of 30 days. Shot -blasting, sand blasting or acid etching (15% muriatic acid / 85% H₂O) is required to remove the surface lattice that appeared during the curing process. **ReactAmine[®] Primer** should be applied to reduce out gassing

Carbon Steel – The steel must be prepared to a “near white metal,” equivalent to SSPC 10 or NACE 2. For immersion service, a 3-mil blast profile is recommended. A 2-mil blast profile is generally accepted. A 10 – 40 mil coat of **EF** is generally recommended based on chemical resistance issues.

Substrate Repairs – All spalls and cracks should be repaired to ICRI standards. Expansion joints should be honored. Horizontal control joints can be filled with **ReactAmine[®] Joint Seal (RJS)** prior to the application of **EF**.

PRIMER REQUIREMENTS:

REACTAMINE[®] PRIMER.

TOP COATING:

REACTAMINE[®] Aliphatic Polyurea (RAP).

SAFETY AND HANDLING:

Refer to MSDS sheets

SHELF LIFE AND STORAGE:

Six months in factory delivered unopened drums. Keep away from extreme heat, cold, and moisture. Maintain at a proper storage temperature of 60°F - 100°F.

PACKAGING:

- 5 gal pails
- 55 gal drums
- 275 gal totes

SHIPPING INFORMATION:

EF can ship via commercial truck lines, class 55.

Adhesion Results:

ASTM D-4541 Elcometer

Concrete (No primer) 400 psi → Concrete Failure

Concrete (Epoxy) 300 psi → Concrete Failure

Steel (No primer) >1500 psi → Substrate Failure

Steel (Epoxy primer) > 900 psi → Primer Failure

Wood (No primer) > 250 psi → Delamination

Chemical Resistance:

<u>Chemical</u>	<u>Result (25°C)</u>
Acetic Acid (100%)	C
Acetone	C
Ammonium Hydroxide (50%)	RC
Benzene	C
Brine-Saturated H ₂ O (310g/l)	R
Chlorinated H ₂ O	R
Clorox® (10%) H ₂ O	R
Diesel Fuel	RC
Gasoline	RC
Gasoline / 5 % MTBE	RC
Gasoline / 5% Methanol	RC
Hydrochloric Acid (20%)	R
Hydrofluoric Acid (10%)	NR
Hydraulic Fluid (oil)	RC
Isopropyl Alcohol	R
Lactic Acid	RC
MEK	RC
Methanol	R
Methylene Chloride	C
Mineral Spirits	RC
Motor Oil	R
MTBE	C
Muriatic Acid (10%)	R
NaCl / H ₂ O (10%)	R
Nitric Acid (20%)	NR
Phosphoric Acid (10%)	R
Phosphoric Acid (50%)	NR
Potassium Hydroxide (10%)	R
Potassium Hydroxide (20%)	R, Dis
Propylene Carbonate	RC
Skydrol®	C
Sodium Hydroxide (25%)	R
Sodium Hydroxide (50%)	R, Dis
Sodium Hypochlorite (10%)	R
Sodium Bicarbonate	R
Stearic Acid	R
Sugar / H ₂ O	R
Sulfuric Acid (10%)	R
Sulfuric Acid (>50%)	RC
Toluene	R
1,1,1-Trichlorethane	C
Trisodium Phosphate	R
Vinegar / H ₂ O (5%)	R

Chemical Resistance (cont):

<u>Chemical</u>	<u>Result (25°C)</u>
H ₂ O	R
H ₂ O (14 days @ 82°C)	RC
Xylene	RC

*R ⇒ Recommended
⇒ Little or no visible damage

*RC ⇒ Recommended Conditional
⇒ Some effect, swelling, discoloration

*C ⇒ Conditional
⇒ Cracking-wash down within 1 hour of spillage to avoid effects

*NR ⇒ Not Recommended

*Dis ⇒ Discoloration

Coverage Calculations:

<u>Coating Thickness</u>	<u>Sq.Ft /gal</u>
20 mils	70
30 mils	48
40 mils	36
50 mils	29
60 mils	24
80 mils	18
100 mils	14
250 mils	5.5

Warranty:

The technical data and any other printed information furnished by **Engineered Polymers, Inc.** is true and accurate to the best of our knowledge. **EF** conforms to in-house quality control procedures and should be considered free of defects. Due to the wide range of applications of this product, it is impossible to assume responsibility for any errors in regard to application, coverage, workmanship, over-spray or injuries resulting from the use of **EF. Engineered Polymers, Inc.** makes no warranty, expressed or implied, of its products and shall not be liable for indirect or consequential damage in any event.