

POLYUREA SPRAY ELASTOMER SYSTEM

■ Description

VFI-201 is a general-purpose 100% solids aromatic pure polyurea elasto-plastic polymer. It is characterized by great physical properties, high chemical and solvent resistance, and usability under wide climatic conditions with outstanding durability. It is composed of isocyanate prepolymers, which are reacted with amine prepolymers to form a polyurea elastomer. Both components are low viscosity fluids, which react very quickly to form a tough polymer when mixed and applied using hot plural component airless spray equipment.

■ Usage

VFI-201 is primarily used for general purpose lining applications. Please contact Volatile Free, Inc. for application specifications.

■ Color

Standard color is black. Custom colors are available but may change with UV exposure.

Physical Properties

■ Tensile

ASTM D-412
Strength: 2880 psi min.
Elongation: 448% min.
Permanent Set: 35% max.
Density PCF: 67
Gardner Impact: 310 in/lbs
Elastic Modulus: 6222 psi

■ Tear

ASTM D-624
Strength: 387 pli

■ Abrasion Resistance

Taber abrasor, 1 Kg load, 1000 cycles H-18 wheel, -100 mg loss.

■ Hardness

ASTM D-2240
Shore A 93 - 95
Shore D 48 - 51

■ Cold Temperature Flexibility

ASTM D-3111
Pass 0.25 inch mandrel at -40°F.

■ Adhesion

ASTM D-4541
Adhesion to concrete primed with VFI-1007 black primer
900 lb./in.² with concrete failure.

■ Water Absorption

ASTM D-471
24 hours at room temp. 1.5%

■ Water Vapor Permeability

ASTM E-96
Procedure BW 100% R.H. Difference at 73°F
30 mil film: 0.02 perm in.

■ Chemical Resistance

See V.F.I. Polyurea & Polyurea Hybrid Chemical Resistance Chart.

■ Service Temperature

-40° to 300°F.

■ Weatherability

ASTM G-53
No cracking, checking, or loss of integrity after 2000 hours. Light colors exhibit yellowing in U.V. light.

Liquid Component Properties

■ Coverage

1600 mil square feet per gallon.

■ Solids

"A" 100% by weight and volume.

"B" 100% by weight and volume.

■ Volatile Organic Compounds

None.

■ Flash Point

Above 200°F.

■ Viscosity

Poly Component: 496 cps @ 77°F.
Range 400 ± 200 cps

Iso Component: 396 cps @ 77°F.
Range 400 ± 200 cps

■ Density

Poly Component: 8.40 lbs./gal.

Iso Component: 9.05 lbs./gal.

■ Specific Gravity

Poly Component: 1.011 g/ml

Iso Component: 1.089 g/ml

■ Shelf Life

"A" One year @ 50° - 90°F.

"B" Two years @ 20° - 100°F.

■ Thinner

Not recommended.

■ Cure Time

Gel in 3-5 seconds. Cure to handle in 20-30 seconds. Develops chemical resistance and physical properties in 8 hours. Recoatable for up to 12 hours.

■ Mix Ratio

1:1 by volume.

■ Clean Up Solvent

Toluene, Xylene, MEK. For reduced fire hazard use glycol ethers or environmentally acceptable chlorinated solvents.

Application

■ Equipment

VFI-201 requires hot airless plural component equipment capable of producing a minimum of 2000 psi and heat to 140°F. Higher pressures to 2500 psi may provide better mixing with enhanced physical properties for the end product. Contact Volatile Free, Inc. for more specific spray gun recommendations. Self-purging impingement mixing spray guns are required.

■ Primer

Sealing porous surfaces with VFI-1007 is recommended. VFI #11 Epoxy Primer is recommended for cementitious and masonry surfaces where enhanced adhesion is needed. VFI-#12 or VFI-1003 Primer is recommended for maximum adhesion to blasted steel surfaces. Please contact Volatile Free, Inc. for more specific preparation recommendations.

■ Precautions

See Material Safety Data Sheet for complete safety data. Protect from exposure to moisture. Water will cause the "A" component (ISO) to generate carbon dioxide with resulting high pressure in closed containers.

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