



Atlas Minerals & Chemicals, Inc.



# DATA SHEET

8-21PI (12-02<sup>2</sup>)  
Supersedes 8-21PI (6-02)

## ATLASTACRETE® E / ATLASTACRETE® E LT

### DESCRIPTION AND TYPICAL USES

ATLASTACRETE E and ATLASTACRETE E LT are epoxy resin based polymer concretes designed for durable corrosion resistant concrete repair, overlay and material of construction. ATLASTACRETE E and ATLASTACRETE E LT offer excellent chemical resistance, use conventional concrete installation techniques and are suitable for application thicknesses of 3/8" (9.5 mm.) and greater. ATLASTACRETE E LT is a low temperature formulation designed for installation temperatures between 34°F (1°C) and 60°F (16°C).

### CHEMICAL RESISTANCE

Refer to the chemical resistance chart for specific information.

### AVAILABLE COLORS

ATLASTACRETE E and ATLASTACRETE E LT are available in gray, red, tan and natural.

### PACKAGING AND COVERAGE

#### REZKLAD® E-CONCRETE PRIMER

##### 1/2-Gal. Unit (3 lb. 7 oz. [1.6 kg.]) Consisting of:

One - 1/2-gal. can of Resin (2 lb. 8 oz. [1.1 kg.])

One - 1-pt. can of Hardener (15 oz. [425 g.])

Coverage: Approx. 100 sq. ft. (9.3 m<sup>2</sup>) per unit

##### 1-1/2-Gal. Unit (12 lb. 2 oz. [5.5 kg.]) Consisting of:

One - 1-gal. can of Resin (9 lb. [4.1 kg.])

One - 1/2-gal. can of Hardener (3 lb. 2 oz. [1.4 kg.])

Coverage: Approx. 350 sq. ft. (32.5 m<sup>2</sup>) per unit

#### ATLASTACRETE E

##### 3/8" (9.5 mm.) to 1" (25.4 mm.) Thickness

##### **45 lb. 12 oz. (20.8 kg.) Unit Consisting of:**

One - 1-gal. can of Resin (4 lb. 12 oz. [2.2 kg.])

One - 1-pt. can of Hardener (10 oz. [284 g.])

One - bag of Base Aggregate (40 lb. 6 oz. [18.3 kg.])

Coverage: Approx. 0.35 cu. ft. (0.01 m<sup>3</sup>) per unit

##### 3/8" (9.5 mm.) to 1" (25.4 mm.) Thickness

##### **400 lb. 12 oz. (181.8 kg.) Unit Consisting of:**

One - 5-gal. pail of Resin (45 lb. [20.4 kg.])

One - 1-gal. can of Hardener (5 lb. 12 oz. [2.6 kg.])

Seven - bags of Base Aggregate (50 lb. [22.7 kg.]) ea.

Coverage: Approx. 3.0 cu. ft. (0.08 m<sup>3</sup>) per unit

## PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	TYPICAL VALUE
Density	ASTM C905	131 lb./cu. ft. (2.10 g./cc.)
Tensile Strength, 7 days @ 77°F (25°C)	ASTM C307	2,200 psi. (15.2 MPa)
Compressive Strength, 7 days @ 77°F (25°C)	ASTM C39	13,800 psi. (95.1 MPa)
Flexural Strength, 7 days @ 77°F (25°C)	ASTM C580	4,200 psi. (29.0 MPa)
Flexural Modulus of Elasticity	ASTM C580	2.43 x 10 <sup>6</sup> (1.68 x 10 <sup>4</sup> MPa)
Water Absorption	ASTM C413	0.08%
Temperature Resistance Continual Intermittent		150°F (66°C) 200°F (93°C)
Linear Shrinkage	ASTM C531	0.03%
Impact Resistance, 1" (2.54 cm.) thick, unbonded	ATM No. 35	>160 in. lb.

### Over 1" (25.4 mm.) Thickness

#### **500 lb. 12 oz. (227.1 kg.) Unit Consisting of:**

One - 5-gal. pail of Resin (45 lb. [20.4 kg.])

One - 1-gal. can of Hardener (5 lb. 12 oz. [2.6 kg.])

Six - bags of Base Aggregate (50 lb. [22.7 kg.]) ea.

Three - bags of ATLAS® AGGREGATE No. 1 (50 lb.

[22.7 kg.]) ea.

Coverage: Approx. 3.8 cu. ft. (0.11 m<sup>3</sup>) per unit

#### **REZKLAD E-CONCRETE PRIMER LT**

##### **1/2-Gal. Unit (3 lb. 12 oz. [1.7 kg.]) Consisting of:**

One - 1/2-gal. can of Resin (2 lb. 8 oz. [1.1 kg.])

One - 1-qt. can of LT Hardener (1 lb. 4 oz. [567 g.])

Coverage: Approx. 110 sq. ft. (10.2 m<sup>2</sup>) per unit

##### **1-1/2-Gal. Unit (13 lb. 8 oz. [6.1 kg.]) Consisting of:**

One - 1-gal. can of Resin (9 lb. [4.1 kg.])

One - 1-gal. can of LT Hardener (4 lb. 8 oz. [2.0 kg.])

Coverage: Approx. 400 sq. ft. (37.2 m<sup>2</sup>) per unit

#### **ATLASTACRETE E LT**

##### 3/8" (9.5 mm.) to 1" (25.4 mm.) Thickness

##### **617 lb. 8 oz. (280.1 kg.) Unit Consisting of:**

One - 5-gal. pail of Resin (45 lb. [20.4 kg.])

One - 5-gal. pail of LT Hardener (22 lb. 8 oz. [10.2 kg.])

Eleven - bags of Base Aggregate (50 lb. [22.7 kg.]) ea.

Coverage: Approx. 4.7 cu. ft. (0.13 m<sup>3</sup>) per unit

**Over 1" (25.4 mm.) Thickness****717 lb. 8 oz. (325.5 kg.) Unit Consisting of:**

One - 5-gal. pail of Resin (45 lb. [20.4 kg.])  
 One - 5-gal. pail of LT Hardener (22 lb. 8 oz. [10.2 kg.])  
 Nine - bags of Base Aggregate (50 lb. [22.7 kg.]) ea.  
 Four - bags of ATLAS AGGREGATE No. 1 (50 lb. [22.7 kg.]) ea.  
 Coverage: Approx. 5.5 cu. ft. (0.16 m<sup>3</sup>) per unit

**TEMPERATURE DURING APPLICATION**

**ATLASTACRETE E:** The best working characteristics of the materials will be attained when the temperature of the substrate, air, ATLASTACRETE E and REZKLAD E-CONCRETE PRIMER are between 60°F (16°C) and 85°F (29°C). Minimum temperature for installation is 60°F (16°C). At temperatures below 60°F (16°C), the product may not set or cure properly.

Store all ATLASTACRETE E and REZKLAD E-CONCRETE PRIMER components at 70°F (21°C) to 80°F (27°C) for 24 hours prior to use.

**ATLASTACRETE E LT:** ATLASTACRETE E LT and REZKLAD E-CONCRETE PRIMER LT are designed for installation temperatures between 34°F (1°C) and 60°F (16°C). The minimum temperature for installation is 34°F (1°C).

Store all ATLASTACRETE E LT and REZKLAD E-CONCRETE PRIMER LT components at 70°F (21°C) to 80°F (27°C) for 24 hours prior to use.

Mix the components of ATLASTACRETE E LT and REZKLAD E-CONCRETE PRIMER LT in an area where the temperature is between 65°F (18°C) and 75°F (24°C).

Do not apply ATLASTACRETE E or ATLASTACRETE E LT when the relative humidity is greater than 75% or the substrate temperature is less than 5°F (3°C) above the dew point.

**SURFACE PREPARATION**

When applying ATLASTACRETE E or ATLASTACRETE E LT to adjacent surfaces, abrasive grit blasting is recommended for preparing concrete and metal surfaces. The substrate must be structurally sound, clean and dry. For additional information, refer to Surface Preparation, Data Sheet PS-30.

**APPLICATION OF THE ATLASTACRETE E AND ATLASTACRETE E LT**

Use standard concrete construction practices of form construction and steel reinforcement. When forming is necessary, coat the forms with a release agent such as petroleum jelly, paste wax or thin mil polyethylene sheet. Care must be exercised to ensure that the release agent does not get on the surface to be bonded.

Vibrate, screed, float and finish with standard concrete tools. Clean tools as described in "Cleaning of Tools and Equipment" after each use.

ATLASTACRETE E and ATLASTACRETE E LT can be poured in thick sections, providing the heat generated during curing can be adequately dissipated

to prevent cracking. Pour rate should not exceed 2" (50.8 mm.) to 3" (76.2 mm.) thickness per hour. Allow approximately 1-1/2 hours between pours, but not more than 24 hours, to ensure that the newly poured material will bond to the previously poured material. Provide adequate ventilation.

Honor all existing joints in the concrete substrate when placing as an overlay topping. Additional expansion joints may be required depending upon the conditions to which the floor is subjected. Contact ATLAS' Technical Service Department for assistance.

**MIXING AND APPLICATION OF THE REZKLAD E-CONCRETE PRIMER**

**1/2-Gallon (3 lb. 7 oz. [1.6 kg.]) Unit:**

**1-1/2-Gallon (12 lb. 2 oz. [5.5 kg.]) Unit:**

Apply REZKLAD E-CONCRETE PRIMER when installing ATLASTACRETE E directly to concrete or metal surfaces.

Stir the contents of the individual resin and hardener containers prior to blending. Mixing of the components should be done with a hand drill equipped with a "Jiffy" type mixer with a mixing speed between 300 and 500 RPM. During mixing, move the mixing blade in circular and up and down motions scraping all sides and the bottom of the mixing container.

- Combine the contents of the cans of REZKLAD E-CONCRETE PRIMER Resin and Hardener in a suitable mixing container.
- Mix thoroughly for one minute.
- Apply REZKLAD E-CONCRETE PRIMER with a brush or roller making sure to work it into the pores of the concrete. Do not allow puddling.
- The REZKLAD E-CONCRETE PRIMER should be wet or tacky when applying ATLASTACRETE E. If the primer is allowed to dry, the surface must be sanded and the area reprimed before proceeding.

**MIX RATIO OF THE REZKLAD E-CONCRETE PRIMER**

	by Weight	by Volume
E-Concrete Primer Resin	100	100
E-Concrete Primer Hardener	35	40

**TYPICAL WORKING TIMES OF THE REZKLAD E-CONCRETE PRIMER**

Temperature	Working Time
65°F (18°C)	35 min.
75°F (24°C)	25 min.
85°F (29°C)	15 min.

**MIXING OF THE ATLASTACRETE E**

**45 lb. 12 oz. (20.8 kg.) Unit:**

Minimum application thickness is 3/8" (9.5 mm.). Stir the contents of the individual resin and hardener containers prior to blending. Mixing of the components should be with a KOL type mixer with a 5-gallon capacity. The mixing speed should be between 60 and 75 RPM. A hoe and mortar box may be used for small batches.

- Place the contents of the 1-gallon can (4 lb. 12 oz. [2.2 kg.]) or 64 fluid ounces (1.89 liters) of ATLASTACRETE E Resin in the concrete mixer.
- Add the contents of the 1-pint can (10 oz. [284 g.]) or 9 fluid ounces (0.28 liters) of ATLASTACRETE E Hardener. Mix the resin and hardener thoroughly for approximately two minutes.
- Slowly add the 40 lb. 6 oz. (18.3 kg.) bag of ATLASTACRETE Base Aggregate.
- Mix the combined components for approximately two minutes or until all the aggregate is thoroughly dispersed.

**400 lb. 12 oz. (181.8 kg.) Unit:**

Minimum application thickness is 3/8" (9.5 mm.). This unit is suggested for application thicknesses between 3/8" (9.5 mm.) and 1" (25.4 mm.).

Stir the contents of the individual resin and hardener containers prior to blending. Mixing of the components should be in a concrete mixer with a capacity to mix a minimum of 3.0 ft<sup>3</sup> (0.08 m<sup>3</sup>).

- Place the contents of the 5-gallon pail (45 lb. [20.4 kg.]) or 4-gallons and 94 fluid ounces (17.95 liters) of ATLASTACRETE E Resin in the concrete mixer.
- Add the contents of the 1-gallon can (5 lb. 12 oz. [2.6 kg.]) or 89 fluid ounces (2.63 liters) of ATLASTACRETE E Hardener. Mix the resin and hardener thoroughly for approximately two minutes.
- Slowly add seven 50 lb. (22.7 kg.) bags of ATLASTACRETE Base Aggregate.
- Mix the combined components for approximately two minutes or until all the aggregate is thoroughly dispersed.

Proportionally decrease component quantities to attain smaller batch sizes.

**MIX RATIO OF THE ATLASTACRETE E**  
**400 lb. 12 oz. Unit**

	by Weight
Atlastacrete E Resin	100
Atlastacrete E Hardener	12.6
Atlastacrete Base Aggregate	780

**500 lb. 12 oz. (227.1 kg.) Unit:**

Minimum application thickness is 1" (25.4 mm.). This unit is suggested for application thicknesses over 1" (25.4 mm.).

Stir the contents of the individual resin and hardener containers prior to blending. Mixing of the components should be in a concrete mixer with a capacity to mix a minimum of 3.8 ft<sup>3</sup> (0.11 m<sup>3</sup>).

- Place the contents of the 5-gallon pail (45 lb. [20.4 kg.]) or 4-gallons and 94 fluid ounces (17.95 liters) of ATLASTACRETE E Resin in the concrete mixer.
- Add the contents of the 1-gallon can (5 lb. 12 oz. [2.6 kg.]) or 89 fluid ounces (2.63 liters) of ATLASTACRETE E Hardener. Mix the resin and hardener thoroughly for approximately two minutes.

- Slowly add six 50 lb. (22.7 kg.) bags of ATLASTACRETE Base Aggregate.
- Slowly add two 50 lb. (22.7 kg.) bags of ATLAS AGGREGATE No. 1.
- Mix the combined components for approximately two minutes or until all the aggregate is thoroughly dispersed.

Proportionally decrease component quantities to attain smaller batch sizes.

**Note:** Depending on job site conditions, finish desired and placement techniques, the aggregate content may be increased to seven bags ATLASTACRETE Base Aggregate and four bags ATLAS AGGREGATE No. 1.

**MIX RATIO OF THE ATLASTACRETE E**  
**500 lb. 12 oz. Unit**

	by Weight
Atlastacrete E Resin	100
Atlastacrete E Hardener	12.6
Atlastacrete Base Aggregate	670
Atlas Aggregate No. 1	330

**TYPICAL WORKING AND SETTING TIMES OF THE ATLASTACRETE E**

Temperature	Working Time	Support Foot Traffic
65°F (18°C)	45 minutes	24 hours
75°F (24°C)	35 minutes	16 hours
85°F (29°C)	25 minutes	12 hours

**CURE RATE OF THE ATLASTACRETE E AT 75°F (24°C)**

Cure Time*	Compressive Strength (Typical)
4 hours	385 psi. (2.65 MPa)
8 hours	8,760 psi. (60.4 MPa)
16 hours	13,100 psi. (90.3 MPa)
24 hours	13,800 psi. (95.1 MPa)
7 days	13,800 psi. (95.1 MPa)

**Test specimens: 1.75" x 3.5" cylinders**

**Test method: ASTM C39**

\*Actual cure times for a particular application will vary depending upon the size of the pour. In general, for applications approximately 1" to 1-1/2" thick, ATLASTACRETE E will be suitable for foot traffic in 8 to 16 hours, light wheeled traffic in 16 to 24 hours and for heavy-duty traffic in 24 to 48 hours.

**MIXING AND APPLICATION OF THE REZKLAD E-CONCRETE PRIMER LT**

**1/2-Gallon (3 lb. 12 oz. [1.7 kg.]) Unit:**

**1-1/2-Gallon (13 lb. 8 oz. [6.1 kg.]) Unit:**

Apply REZKLAD E-CONCRETE PRIMER LT when installing ATLASTACRETE E LT directly to concrete or metal surfaces.

Store all REZKLAD E-CONCRETE PRIMER LT components at 70°F (21°C) to 80°F (27°C) for 24 hours prior to use. Mix the components of REZKLAD E-CONCRETE PRIMER LT in an area where the temperature is between 65°F (18°C) and 75°F (24°C).

The minimum temperature for installation is 34°F (1°C). Stir the contents of the individual resin and hardener containers prior to blending. Mixing of the components should be done with a hand drill equipped with a “Jiffy” type mixer at a mixing speed between 300 and 500 RPM. During mixing, move the mixing blade in circular and up and down motions scraping all sides and the bottom of the mixing container.

- Combine the contents of the cans of REZKLAD E-CONCRETE PRIMER Resin and LT Hardener in a clean, dry plastic or metal container.
- Mix thoroughly for one minute.
- Apply REZKLAD E-CONCRETE PRIMER LT with a brush or short nap roller making sure to work it into the pores of the concrete. Do not allow puddling.
- The REZKLAD E-CONCRETE PRIMER LT should be wet or tacky when applying ATLASTACRETE E LT. If the primer is allowed to dry, the surface must be sanded and the area reprimed before proceeding.

#### MIX RATIO OF THE REZKLAD E-CONCRETE PRIMER LT

	by Weight	by Volume
E-Concrete Primer Resin	100	100
E-Concrete Primer LT Hardener	50	55

#### TYPICAL WORKING TIMES OF THE REZKLAD E-CONCRETE PRIMER LT

Temperature	Working Time
34°F (1°C)	35 min.
40°F (4°C)	25 min.
50°F (10°C)	20 min.
60°F (16°C)	15 min.

#### MIXING OF THE ATLASTACRETE E LT

##### 617 lb. 8 oz. (280.1 kg.) Unit:

Minimum application thickness is 3/8” (9.5 mm.). This unit is suggested for application thicknesses between 3/8” (9.5 mm.) and 1” (25.4 mm.).

Store all ATLASTACRETE E LT components at 70°F (21°C) to 80°F (27°C) for 24 hours prior to use. Mix the components of ATLASTACRETE E LT in an area where the temperature is between 65°F (18°C) and 75°F (24°C). The minimum temperature for installation is 34°F (1°C). Stir the contents of the individual resin and hardener containers prior to blending. Mixing of the components should be in a concrete mixer with a capacity to mix a minimum of 2.4 ft<sup>3</sup> (0.07 m<sup>3</sup>).

The following mixing instructions are for a batch size of 308 lb. 11 oz. (140.0 kg.) or 2.36 ft<sup>3</sup> (0.07 m<sup>3</sup>). Mixing of larger batch sizes is not recommended.

- Place 22 lb. 8 oz. (10.2 kg.) or 2-gallons and 47 fluid ounces (8.97 liters) of ATLASTACRETE E Resin in the concrete mixer.
- Add 11 lb. 4 oz. (5.1 kg.) or 1-gallon and 39 fluid ounces (4.96 liters) ATLASTACRETE E LT

Hardener. Mix the resin and hardener thoroughly for approximately two minutes.

- Slowly add 5-1/2 50 lb. (22.7 kg.) bags of ATLASTACRETE Base Aggregate.
- Mix the combined components for approximately two minutes or until all the aggregate is thoroughly dispersed.

Proportionally decrease component quantities to attain smaller batch sizes.

#### MIX RATIO OF THE ATLASTACRETE E LT

##### 617 lb. 8 oz. Unit

	by Weight
Atlastacrete E Resin	100
Atlastacrete E LT Hardener	50
Atlastacrete Base Aggregate	1222

##### 717 lb. 8 oz. (325.5 kg.) Unit:

Minimum application thickness is 1” (25.4 mm.). This unit is suggested for application thicknesses over 1” (25.4 mm.).

Store all ATLASTACRETE E LT components at 70°F (21°C) to 80°F (27°C) for 24 hours prior to use. Mix the components of ATLASTACRETE E LT in an area where the temperature is between 65°F (18°C) and 75°F (24°C). The minimum temperature for installation is 34°F (1°C). Stir the contents of the individual resin and hardener containers prior to blending. Mixing of the components should be in a concrete mixer with a capacity to mix a minimum of 2.8 ft<sup>3</sup> (0.07 m<sup>3</sup>).

The following mixing instructions are for a batch size of 360 lb. (163.3 kg.) or 2.75 ft<sup>3</sup> (0.07 m<sup>3</sup>). Mixing of larger batch sizes is not recommended.

- Place 22 lb. 8 oz. (10.2 kg.) or 2-gallons and 47 fluid ounces (8.97 liters) of ATLASTACRETE E Resin in the concrete mixer.
- Add 11 lb. 4 oz. (5.10 kg.) or 1-gallon and 39 fluid ounces (4.96 liters) ATLASTACRETE E LT Hardener. Mix the resin and hardener thoroughly for approximately two minutes.
- Slowly add 4-1/2 50 lb. (22.7 kg.) bags of ATLASTACRETE Base Aggregate.
- Slowly add two 50 lb. (22.7 kg.) bags of ATLAS AGGREGATE No. 1.
- Mix the combined components for approximately two minutes or until all the aggregate is thoroughly dispersed.

Proportionally decrease component quantities to attain smaller batch sizes.

#### MIX RATIO OF THE ATLASTACRETE E LT

##### 717 lb. 8 oz. Unit

	by Weight
Atlastacrete E Resin	100
Atlastacrete E LT Hardener	50
Atlastacrete Base Aggregate	1000
Atlas Aggregate No. 1	450

## TYPICAL WORKING AND SETTING TIMES OF THE ATLASTACRETE E LT

Temperature	Working Time	Support Foot Traffic
34°F (1°C)	45 minutes	24 hours
40°F (4°C)	35 minutes	24 hours
50°F (10°C)	25 minutes	16 hours
60°F (16°C)	20 minutes	12 hours
70°F (21°C)	15 minutes	8 hours

### CLEANING OF TOOLS AND EQUIPMENT

Steel wool, soap and warm water will remove the materials referred to in this Data Sheet from mixing tools and equipment if cleaning is done immediately after use. Solvents, such as methyl ethyl ketone, toluene or xylene, will have to be used after the material has begun to harden. Fully hardened material will have to be removed by mechanical means.

Dispose of residues and wastes in accordance with the directions in the Material Safety Data Sheets and government regulations.

### STORAGE AND SHELF LIFE

Store all materials in a cool, dry environment. Keep all materials out of direct sunlight. Ideal storage temperature is 75°F (24°C). Protect from freezing. In unopened original containers, ATLASTACRETE E, ATLASTACRETE E LT, REZKLAD E-CONCRETE PRIMER and REZKLAD E-CONCRETE PRIMER LT resins and hardeners have a shelf life of approximately one year. ATLASTACRETE Base Aggregate and ATLAS AGGREGATE No. 1 can be stored indefinitely.

### PRODUCT SPECIFICATION

The epoxy resin polymer concrete system shall be ATLASTACRETE E or ATLASTACRETE E LT as manufactured by Atlas Minerals & Chemicals, Inc.

### PRECAUTIONS

The materials referred to in this Data Sheet are for Industrial Use Only. They contain materials that present handling and potential health hazards. Consult Material Safety Data Sheets and the container labels for complete precautionary information.

### TECHNICAL SERVICES

ATLAS maintains a staff of Technical Service Representatives who are available to assist you with the use of ATLAS products. In the event of difficulties with the application of ATLAS materials, the installation should be stopped immediately and ATLAS' Technical Service Department consulted for assistance.

### WARRANTY

ATLAS warrants that its products will be free from defects in workmanship and materials under normal use for a period of one (1) year from the date of shipment by ATLAS (provided the products are installed before the expiration of the shelf life). THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR THE PURPOSE FOR THIS PRODUCT WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. ATLAS' LIABILITY FOR ALLEGED BREACH OF THIS WARRANTY SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT (BUT NOT INCLUDING REMOVAL OF THE DEFECTIVE PRODUCT OR INSTALLATION OF REPLACEMENT PRODUCTS). ATLAS SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES DURING THE WARRANTY PERIOD OR THEREAFTER. **ATLAS' WARRANTY IS VOIDED IF PAYMENT FOR PRODUCT IS NOT RECEIVED IN FULL.**

# CHEMICAL RESISTANCE OF ATLASTACRETE® E / ATLASTACRETE® E LT (8-21PI)

	80°F	150°F
Acetic Acid, to 5%	R	C
Acetic Acid, 5% to 10%	C	N
Acetic Acid, 10% to 50%	N	N
Acetone	N	N
Alum or Aluminum Sulfate	R	R
Ammonium Chloride, Nitrate, Sulfate	R	R
Ammonium Hydroxide, 10%	R	R
Ammonium Hydroxide, 30%	R	C
Aniline	N	N
Aqua Regia	N	N
Barium Chloride, Sulfate	R	R
Beer	R	R
Benzene	N	N
Benzene Sulfonic Acid, 10%	R	C
Benzoic Acid	R	R
Black Liquor	R	C
Bleaching Liquor, to 2%	R	R
Bleaching Liquor, concentrated	N	N
Boric Acid	R	R
Butyl Acetate	N	N
Butyl Alcohol	N	N
Butyric Acid	N	N
Calcium Chloride, Nitrate, Sulfate	R	R
Calcium Hydroxide	R	R
Calcium Hypochlorite	C	N
Chlorine, Dry or Wet	N	N
Chlorine Water	R	--
Chloroacetic Acid, to 10%	C	--
Chloroform	N	N
Chromic Acid, to 5%	C	N
Chromic Acid, 5% to 10%	N	N
Citric Acid, to 40%	C	N
Copper Chloride, Nitrate, Sulfate	R	R
Ether	R	--
Ethyl Acetate	N	N
Ethyl Alcohol	R	--
Ethylene Dichloride	N	--
Ethylene Glycol	R	R
Fatty Acids	N	N
Ferric Chloride, Nitrate, Sulfate	R	C
Fuossilic Acid, 30%	A	A
Formaldehyde, to 37%	R	C
Formic Acid, 90%	N	N
Grape Juice	R	C
Hydrobromic Acid, to 20%	C	N

	80°F	150°F
Hydrochloric Acid, to 20%	R	C
Hydrochloric Acid, 20% to 36%	C	N
Hydrofluoric Acid, to 20%	A	A
Hydrofluoric Acid, 20% to 70%	A	N
Hydrogen Peroxide	R	--
Hypochlorous Acid, to 5%	C	N
Jet Fuel	N	--
Kerosene	N	--
Lactic Acid, to 5%	C	N
Lactic Acid, 5% to 10%	N	N
Lactic Acid, above 10%	N	N
Lard	N	N
Lux Liquid	R	C
Magnesium Chloride, Nitrate, Sulfate	R	R
Maleic Acid	N	N
Methyl Alcohol	R	--
Methylene Chloride	N	--
Methyl Ethyl Ketone	N	N
Milk	R	C
Mineral Oil	R	R
Nickel Chloride, Nitrate, Sulfate	R	R
Nitric Acid, to 5%	R	C
Nitric Acid, 5% to 10%	C	N
Oleic Acid	N	N
Oxalic Acid	N	N
Perchloroethylene	N	N
Petroleum	C	C
Phenol, to 5%	N	N
Phosphoric Acid, to 25%	RB	CB
Phosphoric Acid, 25% to 50%	CB	CB
Phosphoric Acid, above 50%	N	N
Picric Acid, to 5%	N	N
Potassium Chloride, Nitrate, Sulfate	R	R
Potassium Hydroxide, to 25%	R	C
Potassium Hydroxide, 25% to 50%	C	N
Sodium Bicarbonate, Carbonate	R	R
Sodium Chloride, Nitrate, Phosphate	R	R
Sodium Sulfate, Sulfide	R	R
Sodium Hydroxide, to 25%	R	C
Sodium Hydroxide, 25% to 50%	C	C
Sodium Hypochlorite, to 6%	C	C
Sodium Hypochlorite, 16%	N	N
Stannic Chloride	R	N
Stearic Acid	N	N
Sugar	N	N

	80°F	150°F
Sulfuric Acid, to 40%	R	C
Sulfuric Acid, 40% to 50%	C	N
Sulfuric Acid, above 50%	N	N
Sulfurous Acid, to 10%	R	R
Toluene	N	N
Toluene Sulfonic Acid	C	N
Tomato Juice	C	N
Trichloroethylene	N	N
Trisodium Phosphate	R	C
Turpentine	C	--
Urea, to 20%	R	R
Urine	R	C
Vegetable Oil	C	N
Vinegar	R	C
Water, Fresh	R	R
Water, Distilled	R	R
Water and Sewage	R	C
Xylene	N	N
Zinc Chloride, Nitrate, Sulfate (12-02')	R	R

**KEY**

- R - Recommended
- N - Not Recommended
- C - Conditional; May be serviceable if the contaminant is immediately removed or washed off the surface.
- A - Silica Filler may be attacked. Sealing the surface may prolong the life.
- B - May contain traces of hydrofluoric acid or acid fluorides. Silica filler may be attacked (see "A").

**Note** - The information presented in the chemical resistance tables is based on judgments derived from laboratory testing and field service performance. The tables have been prepared as a guide to performance. No guarantee of results is made or implied and no liability in connection with this information is assumed. The information presented herein should be supplemented by in-service testing. The data furnished in the tables may be revised on the basis of further testing.