



# ChemMasters

SPECIALTY CONSTRUCTION PRODUCTS

## DURAGUARD 401

HIGH MOLECULAR WEIGHT METHACRYLATE  
PENETRATING SEALER

### P R O D U C T D A T A

#### DESCRIPTION

Duraguard 401 is a 3 component, low viscosity, solvent free, high molecular weight methacrylate penetrating sealer and crack healer. Duraguard 401 may be used as a gravity fed resin or as a specialized crack injection product.

#### USES

- Provides long term protection for concrete surfaces against water and chloride penetration
- Penetrates to protect concrete from abrasion, impact, moisture and chemical attack
- Underwater protection of concrete surfaces
- Crack injection to structurally repair concrete
- Repair of joints, walls, columns and beams

#### ADVANTAGES

- Low viscosity to allow for deep penetration into the concrete. Duraguard 401 is capable of penetrating cracks as narrow as 0.001 inches wide by gravity alone.
- Wide temperature application range from 40°F - 120°F
- Fast setting - can be opened to traffic within two hours of application
- Excellent impact, abrasion and chemical resistance - resists attack from deicing salts and many other chemicals
- Withstands full immersion for extended duration in liquid chemicals and fresh or salt water, without eroding, blistering or loss of bond
- Low odor / non flammable formula

#### PACKAGING

Duraguard 401 is a 3-component product. Standard packaging is as follows:

- Part A Resin is available in 5 gallon pails
- Part B Promoter is packaged in pint containers.
- Part C Catalyst is packaged quart cans.

For larger projects, Part A Resin is also available in 55 gallon drums and Part B Promoter & Part C Catalyst are available in 5 gallon pails.

#### TECHNICAL DATA

Hardness (ASTM D2240) Shore D	83
Water Absorption (ASTM D570)	< 0.1%
Vapor Pressure (ASTM D323) <1 mm Hg (<100Pa) @ 77°F	
Compressive Strength (ASTM C-579)	7,000 psi
Tensile Elongation (ASTM D-638)	1-3%
Tensile Strength (ASTM C-307)	2,800 psi
Flexural Strength (ASTM D-790)	3,200 psi
Modulus of Elasticity (ASTM C-580)	1.5 x 10 <sup>6</sup> psi
T <sub>G</sub>	63-70°C
Slant Shear Adhesion to concrete (ASTM C882)	Failure within concrete >1,500 psi
Solids	100%
Viscosity (ASTM D2393)	5 - 20 cps (0.005-0.020 Pa)
Flash Point	>200°F (>93°C)
Density	8.86 lbs / ga
Specific Gravity	1.06
V.O.C. Content	0 grams / liter
Application Temperature	40°-120°F (4.4°-48.9°-C)
Pot Life	40-50 minutes
Cure Time	up to 6 hours
Crack Size Range	.001-.125 inches

#### DIRECTIONS

**SURFACE PREPARATION:** The surface to be treated shall be visibly dry and its temperature between 40°F (5°C) and 120°F (49°C) prior to application. Duraguard 401 is not to be applied to a deck within 24 hours after a rainfall or when rain is forecast within 12 hours. Prior to application, the surface must be cleaned of oils, grease, wax, solvents, curing membranes and other contaminants. Unsound concrete and laitance must be removed by mechanical means.



**ChemMasters, Inc.**

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**MIXING:** The amount of Part B Promoter and Part C Catalyst used per gallon of Part A Resin is dependent on the substrate temperature. Refer to the following chart.

#### FLUID OUNCES OF PARTS B & C

##### PER GALLON OR PER 5 GALLONS OF PART A RESIN

Substrate Temp	Promotor (Pt B)		Catalyst (Pt C)	
	per ga	per 5 ga	per ga	per 5 ga
40°F	3.5	17.5	6.5	32.5
50°F	3.0	15.0	6.0	30.0
60°F	2.5	12.5	5.0	25.0
70°F	2.0	10.0	4.0	20.0
80°F	1.5	7.5	3.0	15.0
90°F	1.0	5.0	2.0	10.0

For warmer conditions, contact ChemMasters for proper catalyst and promoter adjustments. Duraguard 401 must be thoroughly mixed before application. Use a mechanical drill equipped with a jiffler type mixing prop. Take care not to incorporate excess air into the mix. Based on surface temperature, mix the appropriate amount of Part B Promoter and the Part A Resin for one minute and then add the proper amount of Part C Catalyst and mix for another full minute.

**APPLICATION:** The relative humidity must be below 85% and the surface temperature must remain at 5°F (2.7°C) above the dew point for 6 hours after application. Immediately after mixing pour all of the mixed Duraguard 401 onto the prepared concrete. Spread the material with a serrated squeegee or with brooms maintaining a 15 mil wet film. Backroll material into place with a short nap, solvent resistant roller. The mixed material must be applied within 20 minutes of mixing. The application rate is 100 to 150 square feet per gallon depending upon the porosity of the concrete. For skid resistance, broadcast silica or aluminum oxide into the wet coating. Backroll additional Duraguard 401 over the aggregate.

**CRACK INJECTION:** For vertical and overhead repairs, Duraguard 401 must be injected using typical single component, pressure injection pumps as manufactured by Liliy Corporation, Graco or Dispensing Technology Corporation.

#### CLEANUP

Clean tools and equipment before material dries and sets with xylene or xylol. If material dries, soak in acetone or remove by mechanical means.

#### LIMITATIONS

- Exposure to excessive heat of mixed material can cause premature gelling and reduce the working time.
- Duraguard 401 has a short potlife. Surfaces must be completely prepared and ready before material is mixed.
- Good ventilation of the application area is strongly recommended to aid in the thorough cure of Duraguard 401.
- As a crack injection material, Duraguard 401 is intended for experienced applicators only.

#### STORAGE

Store factory sealed containers of unmixed material at 50°-75°F (10°-24°C) temperatures away from direct sunlight and sources of heat. Temperatures in excess of 75°F (24°C) cause premature aging of the material. Shelf life of properly stored material is one year from date of manufacture.

#### CAUTIONS

**Promoter and Catalyst must never be mixed together as a dangerous chemical reaction can occur.**

Use with good ventilation. Causes eye, skin and respiratory tract irritation. May cause allergic skin reaction. Do not take internally. Keep out of reach of children.

**ORGANIC PEROXIDE:** Keep away from all sources of heat including sunlight. Causes eye, skin and respiratory tract irritation. May cause allergic skin reaction. Do not take internally. Keep out of reach of children.

All label precautions and the MSDS must be fully understood before using this product.

**Make certain that the most current versions of the product data sheet and MSDS are being used. Go to [www.chemmasters.net](http://www.chemmasters.net) or contact ChemMasters customer service at 1.800.486.7866 to verify the most current version.**

Proper application is the responsibility of the user. ChemMasters can only make technical recommendations and cannot provide quality control on the jobsite.

***This Product is Formulated and Labeled for Industrial and Commercial Use Only***

FOR BEST RESULTS AND SAFEST USAGE, USER IS SPECIFICALLY DIRECTED TO CONSULT THE CURRENT MATERIAL SAFETY DATA SHEET AND PACKAGE LABEL FOR THIS PRODUCT

We warrant our products to meet our published specifications and to be free from defects in materials and workmanship to the acceptable quality levels defined in these specifications. If acceptable quality levels are not specified, the acceptable quality levels will be those normally supplied by us for the product. We make no guarantee of the results to be obtained from the use of our products. The determination as to the adaptability of any of our products to the specific needs of the Buyer is solely Buyer's prerogative and responsibility. We are glad to offer suggestions on the use of our products. Nevertheless, there are no warranties given except such expresses warranties offered in connection with the sale of a particular product. Our liability shall be limited to replacement of, or refund of an amount not to exceed the purchase price attributed to, the goods as to which such claim is made. Our selection of one of these alternatives shall be Buyer's exclusive remedy. IN NO CASE SHALL WE BE LIABLE FOR CONSEQUENTIAL OR SPECIAL DAMAGES, EVEN IF WE HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, GUARANTEES, CO-CONDITIONS AND REPRESENTATIONS, EITHER EXPRESSED OR IMPLIED, WHETHER ARISING UNDER ANY STATUTE, COMMON LAW, USAGE OR TRADE, COURSE OF DEALING OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.