



Atlas Minerals & Chemicals, Inc.



# DATA SHEET

4-31PI (7-13)  
Supersedes 4-31PI (2-02)

## MEMBRANE 88

### DESCRIPTION

MEMBRANE 88 is a cold-trowelled, two-part, room temperature curing urethane elastomer specially formulated for use as a chemical resistant membrane for protecting various substrates prior to installing chemical resistant masonry sheathings. It is a highly thixotropic material which facilitates application on both horizontal and vertical surfaces. MEMBRANE 88 has excellent adhesion to most surfaces which are clean, dry and free from rust, oil and grease. For improved adhesion to metal and concrete substrates, use ATLAS® BARRIER SEALANT.

### PACKAGING AND COVERAGE MEMBRANE 88

**5-Gal. Unit (42 lb. 9 oz. [19.3 kg.]) Consisting of:**  
One - 5-gal. pail of Part 1 (Resin) (38 lb. [17.3 kg.])  
One - 1/2-gal. can Part 2 (Accelerator)  
(4 lb. 9 oz. [2.1 kg.])  
Coverage: Approx. 85 sq. ft. (7.9 m<sup>2</sup>) per unit @  
1/16" (1.6 mm.) thick coat

### ATLAS BARRIER SEALANT

**1-Gallon Unit (7 lb. 9 oz. [3.4 kg.]) Consisting of:**  
One - 1-gal. can of ATLAS BARRIER SEALANT Base  
(6 lb. [2.7 kg.])  
Two - bottles of ATLAS BARRIER SEALANT Accelerator  
(12.5 oz. [354 g.]) ea.  
Coverage: Approx. 340 sq. ft. (31.6 m<sup>2</sup>) per unit @  
3 mils (0.8 mm.) to 5 mils (1.3 mm.) thickness

**5-Gallon Unit (37 lb. 8 oz. [17.0 kg.]) Consisting of:**  
One - 5-gal. pail of ATLAS BARRIER SEALANT Base  
(29 lb. 10 oz. [13.4 kg.])  
One - bottle of ATLAS BARRIER SEALANT Accelerator  
(7 lb. 14 oz. [3.6 kg.])  
Coverage: Approx. 1,700 sq. ft. (158 m<sup>2</sup>) per unit @  
3 mils (0.08 mm.) to 5 mils (1.3 mm.) thickness

### ATLAS BARRIER SEALANT THINNER

1-gallon can (6 lb. 8 oz. [2.9 kg.])

### SURFACE PREPARATION

Abrasive grit blasting is required for preparing concrete and metal surfaces. Be sure to follow equipment manufacturer's safety precautions and regulations regarding silica dust in the atmosphere. Concrete surfaces must be prepared to achieve

## PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	TYPICAL VALUE
Density	ASTM C905	91.8 lb./cu. ft. (1.47 g./cc.)
Tensile Strength, 7 days @ 77°F (25°C)	ASTM D412	900 psi. (6.21 MPa)
Hardness, Shore A	ASTM D2240	90-95
Elongation	ASTM D412	18%

profiles as described and depicted in the American Concrete Institute (ACI) recommended practice 303 R-24 for brush, light, medium and heavy grit blast finish as specified for the specific installation. Steel surfaces must be grit blasted to achieve Steel Structures Painting Council SP-5 or NACE #1 white metal blast cleaned surface finish. Profile height must be 2 to 3 mils. The substrate must be structurally sound, clean and dry. For additional information, refer to Surface Preparation, Data Sheet PS-30. Substrate, ambient and material temperature during application must be between 65°F (18°C) and 85°F (29°C). Do not apply when relative humidity is greater than 75%.

### MIXING AND APPLICATION OF THE ATLAS BARRIER SEALANT

Stir the contents of the individual base and accelerator containers prior to blending. Mixing of the components may 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. The following mixing instructions are for a batch size of 0.5 gallons (0.38 liters) or 3 lb. 13 oz. (1.7 kg.). Estimated coverage of the batch size is 170 ft<sup>2</sup> (15.8 m<sup>2</sup>) @ 3 mils (0.08 mm.) to 5 mils (1.3 mm.). Proportionally increase or decrease component quantities to attain larger or smaller batch sizes.

- Combine 51 fluid ounces (1.5 liters) of ATLAS BARRIER SEALANT Base with 12.5 fluid ounces (0.38 liters) ATLAS BARRIER SEALANT Accelerator in a suitable mixing container.
- Mix thoroughly for two minutes as described above.
- ATLAS BARRIER SEALANT can be applied by brush, roller or spray within eight hours of mixing. Allow a minimum of four hours drying time before applying other primers or coatings. **NEVER APPLY MORE THAN ONE COAT OF ATLAS BARRIER SEALANT.**

**NOTE: ATLAS makes it a practice to continuously update and enhance our CCM (Corrosion Resistant Construction Materials) products. For the most recent version of any Data Sheet, please visit our Web site at [www.atlasmin.com](http://www.atlasmin.com).**

**Note:** If thinning is required, add 1-pint of ATLAS BARRIER SEALANT Thinner per 1-gallon of mixed ATLAS BARRIER SEALANT as prepared in Step (b.).

#### MIX RATIO OF THE ATLAS BARRIER SEALANT

	by Weight	by Volume
Base	100	100
Accelerator	26.5	25

#### MIXING AND APPLICATION OF THE MEMBRANE 88

Mixing and application must be performed in a dry atmosphere. Components must be stirred before using. Pour the entire contents of the MEMBRANE 88 Part 2 (Accelerator) container into the MEMBRANE 88 Part 1 (Resin) container. Mix for approximately two minutes using a hand drill (300 to 500 RPM) equipped with a "Jiffy" mixer or Indco, Inc. General Purpose mixer, Cat. No. GPM342. For mixing in 5-gallon containers, use Cat. No. GPM311. Lead the mixer along the sides and bottom of the container, scraping sides and bottom to ensure mixing of the contents. Pour the mixture into another plastic or metal pail, scraping sides and bottom to remove contents. **Stir again before** applying the material. When using less than full units, mix 8 lb. 5 oz. (3.8 kg.) of MEMBRANE 88 Part 1 (Resin) and 1 lb. (454 g.) of MEMBRANE 88 Part 2 (Accelerator). Working life of the material is 25 to 35 minutes at 77°F (25°C).

MEMBRANE 88 is applied using a flat trowel or a straight edge tempered masonite spreader. Apply the first coat of membrane in a thin layer in order to break any bubbles of entrapped air. Inspect each coat for pinholes and make sure that all are covered with subsequent coats of material. A finished thickness of 1/8" (3.2 mm.) is recommended for most applications. This thickness must be achieved with a minimum of two coats. The second coat of MEMBRANE 88 can be applied as soon as the first coat has cured sufficiently to prevent drag of the first application.

#### CURING TIME

MEMBRANE 88 has an initial set time of four to six hours at 77°F (25°C) and can be placed in service after seven days. Successive coats must be applied as soon as the previous coat is hard enough to allow application without being damaged. This will maximize adhesion between coats. Do not allow more than 72 hours of curing between coats. Lower or higher ambient temperatures will result in longer or shorter working and curing times. The substrate, material and ambient temperature must be at least 65°F (18°C).

#### CLEANING OF THE TOOLS AND EQUIPMENT

Solvents, such as methyl ethyl ketone, toluene or xylene, will remove the materials referred to in this Data Sheet from mixing tools and equipment if cleaning is done immediately after use. If the material has been allowed to cure, tools may be soaked in methyl ethyl ketone.

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, the materials referred to in this Data Sheet have a shelf life of approximately one year.

#### PRODUCT SPECIFICATION

The membrane shall be MEMBRANE 88 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 MEMBRANE 88 (4-31PI)

	80°F	150°F	170°F
Acetaldehyde	C	C	N
Acetic Acid, to 10%	R	R	C
Acetic Acid, Glacial	N	-	-
Alum or Aluminum Sulfate	R	R	R
Aluminum Chloride, Nitrate	R	R	C
Ammonium Chloride, Nitrate, Sulfate	R	R	C
Ammonium Hydroxide, to 10%	R	C	N
Amyl Acetate	N	-	-
Amyl Alcohol	R	C	N
Aniline	N	-	-
Aqua Regia	N	-	-
Barium Chloride, Nitrate, Sulfate	R	R	C
Barium Hydroxide	R	C	N
Barium Sulfide	C	N	-
Benzene	N	-	-
Benzene Sulfonic Acid, 10%	R	R	C
Benzoic Acid	R	R	C
Boric Acid	R	R	R
Bromine Water	N	-	-
Butyl Acetate	N	-	-
Butyl Alcohol	R	C	N
Butyric Acid	N	-	-
Cadmium Chloride, Nitrate	R	R	C
Cadmium Sulfate	R	R	R
Calcium Bisulfite, Nitrate	R	R	C
Calcium Chloride	R	R	R
Calcium Hydroxide	R	C	N
Carbon Disulfide	N	-	-
Carbon Tetrachloride	N	-	-
Chlorine Dioxide, Water Solution	R	R	R
Chlorine, Dry or Wet	R	C	C
Chlorine Water	R	-	-
Chloroacetic Acid, to 10%	N	-	-
Chlorobenzene	N	-	-
Chloroform	N	-	-
Chromic Acid, to 5%	R	C	N
Chromic Acid, 5% to 10%	C	N	-
Chromic Acid, above 10%	N	-	-
Citric Acid, to 10%	R	R	C
Copper Chloride, Nitrate	R	R	C
Copper Sulfate	R	R	R
Dichloroacetic Acid, 10%	N	-	-
Dichlorobenzene	N	-	-
Diethyl Ether	N	-	-
Ethyl Acetate	N	-	-
Ethyl Alcohol	R	C	N
Ethyl Sulfate	N	-	-

	80°F	150°F	170°F
Ethylene Dichloride	N	-	-
Ethylene Glycol	R	C	C
Fluosilicic Acid	R	R	C
Formaldehyde	C	C	N
Formic Acid	C	N	-
Gasoline	C	N	-
Glycerine	R	C	C
Gold Cyanide	R	R	C
Hexane	N	-	-
Hydrobromic Acid, to 20%	R	C	N
Hydrochloric Acid, to 20%	R	C	N
Hydrocyanic Acid, to 10%	R	C	N
Hydrofluoric Acid, to 10%	N	-	-
Hydrofluosilicic Acid, to 10%	N	-	-
Hydrogen Peroxide, 12%	R	R	C
Hydrogen Sulfide Gas, Dry or Wet	R	R	C
Iron Chloride, Nitrate	R	R	C
Iron Sulfate	R	R	R
Isopropyl Ether	N	-	-
Kerosene	C	-	-
Lactic Acid, to 10%	R	R	C
Lead Acetate	R	C	N
Lead Nitrate	R	R	C
Linseed Oil	C	N	-
Magnesium Chloride, Nitrate	R	R	C
Magnesium Hydroxide	R	C	N
Magnesium Sulfate	R	R	R
Maleic Acid	R	C	N
Mercuric Acetate	N	-	-
Methyl Acetate, Sulfate	N	-	-
Methyl Alcohol	R	C	N
Methyl Ethyl Ketone	N	-	-
Mineral Oil, Spirits	C	N	-
Muriatic Acid	R	C	N
Nickel Chloride, Nitrate	R	R	C
Nickel Sulfate	R	R	R
Nitric Acid, to 5%	R	C	N
Nitric Acid, 5% to 10%	C	N	-
Nitric Acid, above 10%	N	-	-
Nitrobenzene	N	-	-
Oleic Acid	C	N	-
Oxalic Acid	R	C	N
Perchloric Acid	N	-	-
Phenol, to 5%	N	-	-
Phosphoric Acid, to 40%	R	C	N
Phosphorous Acid	N	-	-
Phosphorous Trichloride	N	-	-

	80°F	150°F	170°F
Phthalic Acid	R	C	N
Potassium Bicarbonate, Carbonate	R	R	C
Potassium Chloride, Cyanide, Nitrate	R	R	C
Potassium Ferricyanide, Ferrocyanide	R	R	C
Potassium Hydroxide, to 30%	R	C	N
Potassium Hydroxide, above 30%	C	N	-
Potassium Sulfate	R	R	R
Pyridine	N	-	-
Rochelle Salt	R	R	C
Salicylic Acid	R	R	C
Silver Nitrate	R	R	C
Sodium Acetate	R	C	N
Sodium Bicarbonate, Carbonate	R	R	C
Sodium Chloride, Cyanide, Nitrate, Sulfate	R	R	C
Sodium Hydroxide, to 30%	R	C	N
Sodium Hydroxide, above 50%	C	N	N
Sodium Hypochlorite, to 3%	R	R	R
Sodium Hypochlorite, above 15%	C	N	-
Sodium Sulfide	R	C	N
Sodium Sulfite, Thiosulfate	R	R	C
Soya Oil	N	-	-
Stearic Acid	C	N	-
Sulfur Dioxide Gas, Dry or Wet	R	C	N
Sulfur Trioxide Gas, Dry	R	C	N
Sulfur Trioxide Gas, Wet	N	-	-
Sulfuric Acid, to 40%	R	R	C
Sulfuric Acid, above 40%	N	-	-
Sulfurous Acid	C	N	-
Tannic Acid	R	R	C
Tartaric Acid	R	R	C
Tin Chloride	R	R	C
Tin Sulfate	R	R	R
Toluene	N	-	-
Trichloroethylene	N	-	-
Trisodium Phosphate	R	C	N
Tung Oil	N	-	-
Urea	R	R	C
Xylene	N	-	-
Zinc Chloride, Nitrate, Sulfate	R	R	C

**KEY** (7-13)

R - Recommended  
 N - Not Recommended  
 C - Conditional; May be serviceable if the contaminant is immediately removed or washed off the surface.

**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.