



# Permalith

## Lithium Silicate Sealer, Hardener and Densifier

### DESCRIPTION

**Permalith** is a premium, water-based lithium silicate solution designed to be used on new and old concrete surfaces to seal, harden and densify. Lithium silicates provide significant advantages when used in place of sodium or potassium silicates. Advantages over these other silicates include ease of application due to higher reactivity (scrubbing into surface to produce reaction is NOT necessary), ease of cleaning (lighter application rates means no residue to clean) and better penetration (lithium silicates have lower viscosity than other silicates). Due to the increased reactivity and lighter application rates, applicators are not generating silicate residues (appears as crystals) on the surface, which are considered hazardous waste by the EPA. When properly applied, **Permalith** reacts with the concrete to reduce porosity and permeability of the concrete matrix. This serves to increase hardness and chemical resistance, which in turn increases the service life of the concrete. **Permalith** penetrates the concrete; it will not scratch, peel or show tire marks. **Permalith** is compatible with subsequent adhesives and coatings.

### USES

**Permalith** is ideal for hardening and dustproofing concrete interior and exterior applications such as:

- Warehouse floors
- Processing plants
- Basements
- Schools
- Offices
- Residential or commercial floors that will receive subsequent flooring, coatings or adhesives.

### BENEFITS

- Contributes to LEED EQ Credit 4.2
- Densifies: Increases abrasion resistance of normal concrete by >40%
- Best performance among family of silicates
- Re-open slab to traffic in one hour
- Eliminates need for future waxing
- Can act to enhance concrete hydration without forming a membrane on the surface
- VOC Compliant: No solvents
- Performance: Hardens and dustproofs
- Resistant: Improved resistance to attack from chemicals, oils and de-icing salts
- Non-staining: Will not discolor concrete
- Pre-Blended: Ready to use
- Efficient: Easy application and clean-up

### SURFACE PREPARATION

All surfaces in contact with **Permalith** shall be free of dirt, oil, grease, laitance and other contaminants that may act as bond-breakers. All unsound concrete should be removed. Surface must be structurally sound and free of all contaminants. A suitable concrete cleaner not harmful to concrete should be used as a degreaser and to remove rubber tire marks. Thoroughly rinse and allow surface to dry prior to application.

### PHYSICAL PROPERTIES

Complies with VOC contents in accordance with Federal EPA 40 CFR Part 59 Table 1, Subpart D for Concrete Curing and Sealing.

VOC	< 20 g/L
Color	Clear
Flash Point	Non-Flammable
Dry Time	1 hr at 70°F (21°C)
Staining	None
Shelf Life	2 Years
Active Content	15%

Property and Test Method	Results				
Abrasion Resistance	Age	Abrasion @ :30	Improve-ment	Abrasion @ :60	Improve-ment
ASTM C779	7 Days	.005" (.12mm)	74%	.018" (.45mm)	59%
	28 Days	.007" (.17mm)	44%	.015" (.38mm)	40%

### COVERAGE

Actual rates may vary depending on type and porosity of the surface and application method. Recommended coverage is as follows:

Broomed Surface:	500–700 ft <sup>2</sup> /gal
Troweled Surface:	800–1000 ft <sup>2</sup> /gal
Vertical Surface:	600–700 ft <sup>2</sup> /gal
Old Concrete:	400–600 ft <sup>2</sup> /gal

### MIXING

For best results, mix thoroughly before each use. Do not over agitate or use high speed mixing equipment.

### PLACING

Apply with a low pressure sprayer, brush, squeegee or roller. Spray application is recommended. A hand held pump sprayer or an airless industrial sprayer is acceptable. Apply evenly without puddling. Use a clean soft bristle push broom or microfiber pad to distribute product evenly over surface. It is not necessary to scrub product into surface. Brush out runs and puddles immediately. Excess puddled material will leave a white "dust" residue, which must be removed. Do not interchange use of sprayer that has been used to spray a solvent based product.

### STORAGE

Protect from freezing. Store material in an interior, cool, dry place above 45°F (7°C). Shelf life is one year in original, unopened container.

### CLEAN-UP

Clean tools and equipment with warm, soapy water. After materials have dried, it may be necessary to use solvents such as mineral spirits, toluene or xylene.

**Packaging: 5 gal (18.9 L) pail, 55 gal (207.9 L) drum**



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## LIMITATIONS

In addition to the limitations already mentioned, please note the following. Do not puddle material. If excess **Permalith** is left on the surface, a white dust may form and should be removed by scrubbing immediately. Applications to colored concrete should wait a minimum of 60 days for best results. Accidental exposure to glass, aluminum or polish metals should be flushed immediately with clean water to avoid potential etching. Allow the material to dry for one hour before exposing to traffic. Do not apply when the temperature of the concrete is below 40°F (4°C). Do not mix with any other products. Do not pour unused material back into original container.

## WARNING

May cause eye damage/irritation. May cause skin irritation. May cause respiratory irritation. Wear protective gloves and eye/face protection. Wash with plenty of water and soap thoroughly after handling. Avoid inhalation of vapors. Do not eat, drink or smoke when using this product. Use only outdoors or in a well ventilated area.

## FIRST AID

If in eyes: rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: call a poison center or doctor/physician. If on skin: wash with plenty of soap and water. If skin irritation or rash occurs, get medical advice. Take off contaminated clothing and wash it before reuse.

## MANUFACTURER/TECHNICAL SERVICE

Contact your US SPEC manufacturer's representative for the most current product information. Always read and follow the warnings and instructions on the most current technical data sheets, available online at [www.usspec.com](http://www.usspec.com).

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**NOTICE OF LIMITED WARRANTY** US MIX Co. (manufacturer) warrants to buyer that this product at the time and place of shipment is of good quality and conforms to the manufacturer's specifications in force on the date of manufacture when used in accordance with the instructions hereon. Manufacturer cannot warrant or guarantee any particular method of use, application or performance of the product under any particular condition. This limited warranty cannot be extended or amended by manufacturer's sales people, distributors or representatives or by any sales information, specifications of anyone other than the manufacturer. Liability under this warranty is expressly limited to refund of the purchase price. See product packaging for complete limitation of warranties and liability.