SS Harden X™

Hardener/Sealer/ Densifier with Lithium Technology
EQ Credit 4: low-emitting VOC-compliant materials

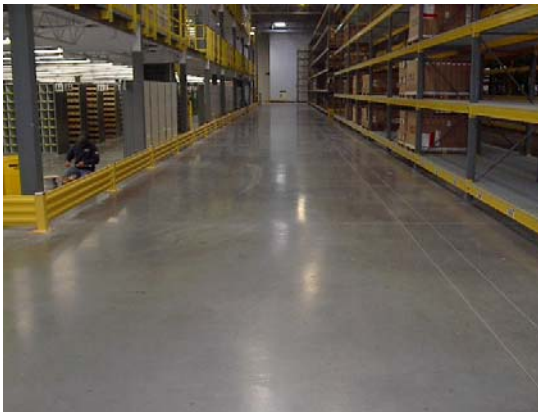
PRODUCT DATA SHEET

PRODUCT DESCRIPTION

SealSource® International, LLC manufactures this premiere hardener/sealer/densifier with the most cutting-edge technology in the industry. The lithium silicate formulation of SS Harden X™ creates greater density by reacting with the calcium hydroxide in the concrete to form stable, insoluble tri-calcium silica structures. This superior densification process ensures maximum resistance to dusting, abrasion, bacteria, and chemical attack.

SS Harden X™ is sprayed evenly over the area to be treated--there is no need to flush the surface or remove and dispose of any excess material after installation. Treated surfaces not only maintain their sheen against traffic and wear, but over time increases from a satin to glossy finish with regular maintenance. The most durable product of its kind, SS Harden X™ gives long-term protection in a single application, dramatically reducing maintenance costs and facility downtime.

FEATURES



- Lithium Technology - chemically bonds to the substrate
- Hardens & Densifies - unique lithium formulation allows deeper penetration and a more complete chemical reaction for greater hardening properties
- Maximum resistance to dusting & abrasion
- No Flushing - material is simply sprayed evenly over the surface with no flushing or removal of excess material
- Durable – one-time installation provides long-lasting protection
- Fast-Drying - ready for traffic in 1-2 hours
- Light-Reflective – provides immediate sheen that improves over time with normal wear and maintenance
- USDA approved for incidental food contact
- Sustainable & Environmentally Safe - low VOCs (< 50 g/L), odorless
- Prevents efflorescence caused by ASR
- Can be applied on new or existing concrete and tilt-up construction slabs
- Makes concrete easier to clean – reducing maintenance costs and downtime

USES

Interior/Exterior Use
New or existing concrete (as noted in ACI Standard 302.1R-89)
Tilt-up construction slabs
USDA approved for use in food & drug processing facilities – safe for incidental contact with food

PACKAGING

55 Gallon Drums (drum containers filled by weight, volume is closely approximate)
5 Gallon Pails

MIXING

Harden X™ is a single component product. Prior to use shake container or stir for one to two minutes.

APPLICATION RECOMMENDATIONS

SS Harden X™ may be applied by HPLV, pump-up, airless, backpack, or mechanical sprayer; roller or brush.

* Certified Applicator is required for all national accounts

COVERAGE RATE

Coverage rate is generally 400-500 sq/ft per gallon (10-12 m^2/liter), but will vary depending on surface porosity.

DRYING TIME

Dries in 1-2 hours and is ready for traffic as soon as the surface is dry.

TECHNICAL DATA

PHYSICAL PROPERTIES

Form:	Clear, pale light green, water-based solution
Total solids:	16%
Active Ingredients:	100% of total solids
Specific Gravity:	1.11
pH:	11.0
Flash Point:	N/A
VOC Content:	< 50 grams/L, 0 lb/gal, or 0 g/L per gallon
Freeze Point:	32^o F
Slip Resistance:	Does not change floor friction coefficient
Depth of Surface Penetration:	2-8 mm

SHELF LIFE

One year in unopened, factory-sealed container under normal storage conditions of 55^{o} F - 95^{o} F.

COMPLIANCES

Recommended for use on concrete classes both new and existing surfaces as noted in ACI Standard 302.1R-89

TEST DATA

FRICTION TEST DATA

These series of tests were conducted according to ASTM C-1028-96 guidelines. All samples had a machine trowel finish.

RESULTS

Dry untreated specimen	0.710
Wet untreated specimen	0.480
SS Harden X™ treated specimen (wet)	0.470
SS Harden X™ treated specimen (dry)	0.710

INTERPRETATION

SS Harden X™ products do not significantly alter the friction qualities of the surface they are applied to. All standard methods for accident prevention must be used in situations where traction is of concern.

ABRASION TEST DATA

Test Method: Mohs Hardness testing was conducted in conjunction with ASTM C1353 on 3000 psi steel-troweled concrete that had been in place for 10 years. The absolute scale of hardness equivalent is given in parentheses following the Mohs number.

Untreated Concrete	3.5 (9)
Concrete Treated with SS Harden X™	7.0 (100)

The Mohs hardness scale simply consists of 10 minerals arranged in order from 1 to 10. Diamond is rated as the hardest and is indexed as 10; talc as the softest with index number 1.

Untreated	0% reduction
Treated with SS Harden X™	91% reduction

FLEXURAL STRENGTH TEST

Test Method: Per ASTM C-78-94 the standard method for flexural strength of concrete (using simple beam with third-point loading).

Untreated	430
Treated with SS Harden X™	635

SAFETY

- Read Material Safety Data Sheet before using
- Keep out of the reach of children
- Protect from freezing
- Wear safety glasses and rubber gloves
- Do not apply to soft metals
- Do not apply to glass

WARRANTY

SealSource® International, LLC will refund the price of or replace, at its sole election, product it finds to be defective provided the product has been used properly. Except as expressly stated above, the Company makes no warranty of merchantability and no warranty of fitness for any particular purpose, nor does it make any warranty, express or implied, of any nature whatsoever with respect to the product or its use. In no event shall the company be liable for delay caused by defects; loss of use; indirect, special or consequential damages; or for any charges or expenses of any nature incurred without its written consent.

Technical Services, Sales and Customer Support (800) 305-9144

Chemical Resistance Chart

SS Harden X™

NO EFFECT = NE MODERATE EFFECT = M SEVERE EFFECT = S

ALCOHOLS & SOLVENTS

Benzyl Alcohol	NE
Carbon Tetrachloride	NE
Ethyl Alcohol	NE
Isopropyl Alcohol	NE
Glycerol	NE
Methyl Alcohol	NE
Ethylene Glycol	NE
Glycerol I-Hexanol	NE
Resorcinol	NE
T-Butyl Alcohol	NE
Trichloroethylene	NE

ALDEHYDES

Benzaldehyde	NE
Butraldehyde	NE
Furfural	NE

AMINES

Aniline	NE
Triethanolamine	NE

CLEANING SOLUTIONS

Calgonite	NE
Chlorox	NE
Chlorox Concentrate	NE
Joy	NE
Joy Concentrate	NE
Lestoil	NE
Lux Flakes	NE
Rinse Dry	NE
Rinse Dry Concentrate	NE
Tide Concentrate	NE

ESTERS

Amyl Acetate	NE
Dibutyl Sebacate	NE
Dioctyl Phthalate	NE
Ethyl Acetate	NE
Tricresyl Phosphate	NE

ETHERS

Dibenzyl Ether	NE
Diethylene Glycol Monobutyl Ether	NE
Ethyl Ether	NE

FATS AND OILS

Butter	M
Castor Oil	M
Cottonseed Oil	M
Lard	M
Light oil above 35 Baume	M
Oleomargarine	M
Olive Oil	M
White Mineral Oil	M

HALOGENATED HYDROCARBONS

Benzyl Chloride	NE
Bromobenzene	NE
Carbon Tetrachloride	NE
Chloroform	NE
Ethylene Dichloride	NE
Ethylene Glycol Monoethyl Ether	NE
Perchloroethylene	NE

HYDROCARBONS

Benzene	NE
Carbon Disulphide	NE
Cyclohexane	NE
Ethylbenzene	NE
Heptane	NE
Hexane	NE
Naphthalene	NE
Nitrobenzene	NE
Toluene	NE
Xylene	NE

HYDRAULIC FLUIDS

Brake Fluid	M
Oronite 8200	M
Pydraul F9	M
Pydraul 60	M
Skydrol	M
Skydrol 500	M
Transmission Fluid	M

INORGANIC ACIDS

Chlorosulphonic Acid	S
Chromic Acid	M
Chromic Acid	M
Hydrochloric Acid	M
Hydrochloric Acid Concentrate	M
Hydrofluoric Acid	S
Hydrofluoric Acid Concentrate	S
Nitric Acid	S
Phosphoric Acid Concentrate	M
Sulphuric Acid	M

INORGANIC BASES

Barium Hydroxide Concentrate	NE
Calcium Hydroxide Concentrate	NE
Potassium Hydroxide	M
Sodium Hydroxide	M

KETONES

Acetone	NE
Methyl Ethyl Ketone	NE
Methly Isobutyl Ketone	NE

MISCELLANEOUS

Antifreeze	M
Cold Ashes	NE
Buttermilk	NE
Chlorine Gas	NE
Gelatin	NE
Glucose	NE
Molasses	M
Nickel Plating Solutions	S
Ores	NE
Cider	NE
Coal	NE
Corn Syrup	NE
Fermenting Fruits or Vegetables	M
Formaldehyde	NE
Hydrogen Sulfide	M
Manure	NE
Sauerkraut	M
Sugar	NE
Sulfite Liquor	NE
Sulfur Dioxide	NE
Tanning Bark	M
Tanning Liquor	M

OILS AND FUELS

A.S.T.M. No. 1 Oil	M
A.S.T.M. No. 2 Oil	M
A.S.T.M. No. 3 Oil	M
A.S.T.M. Fuel A	M
A.S.T.M. Fuel B	M
A.S.T.M. Fuel C	M
Heating Fuel Oil	M
Jet AirCraft Engine Oil	M
Lignite Oils	M

ORGANIC ACIDS

Acetic Acid	S
Acetic Acid – Glacial	M
Acid Waters pH/6.5 Boric Acid	NE
Carbolic Acid Carbonic Acid	M
Chromic Acid	M
Citric Acid Formic Acid	M
Humic Acid	M
Hydrochloric Acid	S
Lactic Acid	M
Oleic Acid	NE
Oxalic Acid	M
Phenol Acid	M
Phosphoric 10%	M
Phosphoric 85%	M
Wine	M

SALTS

Ammonium Chloride	M
Ammonium Nitrate	NE
Barium Chloride	M
Calcium Chloride	M
Calcium Hypochlorite	M
Cupric Chloride	M
Cupric Sulphate	NE
Ferric Chloride	M
Ferric Nitrate	M
Ferrous Sulphate	NE
Iodine	M
Magnesium Chloride	M
Magnesium Sulphate	NE
Nickel Sulphate	NE
Potassium Chloride	M
Potassium Permanganate	M
Potassium Dichromate	M
Sodium Borax	NE
Sodium Bicarbonate	NE
Sodium Chloride	M
Zinc Nitrate	NE

WATER

Distilled Water	NE
Mine Water, Waste	NE
Sea Water	M
Soft Water/75 ppm Carbonate	NE

The above mentioned chemicals were tested based on the following parameters: attack to the concrete by means of staining and/or erosion. Therefore, the measure of the overall effect determines the level of concern based on those indicators. However, the overall attack can be altered due to the various conditions, which are, but not limited to, design of the concrete, ambient temperature, including the humidity levels, contact time of the chemical itself as well as the concentration of such chemical. The information contained in this chemical resistance chart is based on reliable data, but all such recommendations are specified without guarantee or warranty. SealSource, LC strongly recommends discussing specific concerns with their technical department prior to application.