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## CURING SYSTEMS

# SINAK 102 CURING

### TECHNICAL DATA

S-102™ is formulated to exceed the performance requirements of all concrete water-cure specifications. Use of S-102™ assures that the specified design strengths will be achieved along with development of improved surface durability properties.

#### RECOMMENDED FOR CURING OF:

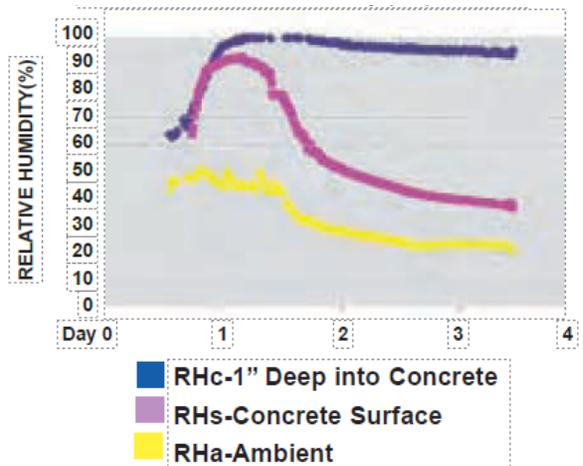
- Areas to receive applied finishes
- Cast in place walls and columns
- Superflat floors
- Pre-cast concrete
- Parking structures
- Road/bridge/runway pavements
- Tilt up Construction
- Shotcrete/lightweight concrete
- Warehouse floors to receive polishes

S-102™ leaves no surface residue and is guaranteed to be compatible with all bond breakers, patching compounds, wall coatings, paints, flooring materials, staining processes, crack and joint materials. Overspray on reinforcement steel does not require removal.

#### TESTING

Testing of S-102™ is the most comprehensive in the industry and has been conducted with two primary objectives: (1) to establish and prove superior performance; and (2) to ensure a close and consistent correlation between laboratory and field results.

Proof of Moisture Retention Effectiveness based on relative humidity (RH) Data



Zachary Department of Civil Engineering, Texas A&M University of Texas DOT

#### WATER RETENTION

Exceeds the performance criteria (kg/m<sup>2</sup>):

Standard	Criteria	S-102™
ASTM C 309	0.55	0.34
ASTM C 1315	0.40	0.34
AASHTO M148	0.55	0.34



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#### ADVANTAGES OF USING S-102 INSTEAD OF WATER FOR CURING:

- Retains high relative humidity, providing optimal hydration for continued curing without monitoring of the surface
- Used as evaporation control and a finishing aide
- Method of curing is done in one day
- Zero waste

#### ADVANTAGES OF USING S-102 INSTEAD OF A FILM-FORMING CURE:

- Testing of S-102 is a comparable to 14 day full-soak water curing
- Used as a replacement for water curing even in high temperature climates
- Higher spread-rate
- Non film-forming
- Penetrating cure that cannot be removed
- Compatible with all topically applied materials without extra preparation
- Zero waste

#### PRODUCT DESCRIPTION

SINAK S-102™ is an environmentally friendly, water-based liquid with a pro-prietary formula in solution. It requires no mixing, diluting or agitating. Color: water clear; Specific Gravity: 1.1; Net Weight per gal: 9.2 lbs; Dry Solids Content (by weight): 11.1%; Flash Point: none; Toxicity: non-toxic; VOC: contains NO volatile organic compounds or solvents.

#### PRODUCT HANDLING & STORAGE

S-102™ has an indefinite shelf life but must be kept in tightly secured containers to prevent evaporation and contamination. SINAK S-102™ MUST be protected from freezing. Product that has frozen will not function as intended.

#### PRODUCT AVAILABILITY

S-102™ is available in 18.9 liter pails, 208 liter steel drums and biodegradable 1041 liter totes through selected, qualified distributors and dealers. Call for the nearest source.

#### TECHNICAL SUPPORT

Technical assistance is available from the manufacturer, from trained field representatives, and from Certified Applicators.

#### PRECAUTIONS

This product may attach to certain types of glass, metals, and other materials. See product label or Product Information Sheets for complete application instructions and precautions.

#### LIMITED WARRANTY

SINAK Corporation warrants its products to be of the highest quality. Since application of the product is a crucial factor in obtaining satisfactory results, and is beyond the control of SINAK Corporation, refund of purchase price or replacement of product shall constitute the limit of SINAK Corporation's liability. SINAK Corporation makes no other warranties, express or implied, with respect to the products or any service and dis-claims all other warranties, including any warranty of merchantability and fitness for a particular purpose. This limited warranty may not be modified by representatives of SINAK Corporation, its distributors or dealers

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#### TESTING

S-102™ creates secondary hydration within the concrete which results in the formation of additional cement. This additional cement C-S-H formation dramatically densifies the substrate which remains mix-water. As a result, relative humidity levels in the concrete remain near 100% providing optimal hydration for strength, development and long-term durability. (See RH data).

#### LONG TERM BENEFITS

S-102™ provide protection from Chloride Ion Penetration: increases surface wear resistance. Provides surface scalling and freeze-thaw protection. Provides protection against oil and chemical staining and damage.

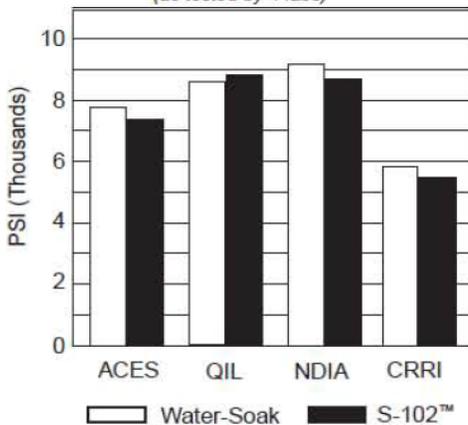
#### BS 1881: part 116 Compressive Strength PSI

	Test Lab	Water soak	S-102™ Cure	S-102™ %
28-Days	ACES	7830	7293	93.1%
	QIL	8726	8871	101.7%
	NDIA	9860	9425	95.6%
	CRRI	5995	5587	93.2%

#### AASHTO T 277-93/ASTM C 1202-94 Rapid Chloride Permeability Test (28 Days)

Sample	Water Soak	S-102™ %
Max current reached		
1 (amps)	0.1998	0.1226
2 (amps)	0.1994	0.1301
3 (amps)	0.1999	0.1264
Avg (amps)	0.1997	0.1264
	100.0%	63.3%
Total charge passed		
1 (coulombs)	3999	2303
2 (coulombs)	4027	2513
3 (coulombs)	3981	2450
Avg (coulombs)	4002	2422
	100.0%	60.5%

#### 28 Day Compressive Strength (as tested by 4 labs)



#### Freeze-Thaw Testing (AASHTO T 161/ASTM C 666) Frost-resistant concrete:

Scaling after	Untreated Control	Treated S-102™
146 cycles	slight	none
237 cycles	slight	slight
480 cycles	slight	slight

#### BS 1881: Part 5

#### Initial Surface Absorption ml/m<sup>2</sup>/sec (28 Days)

	Untreated Control	S-102™ Treated
10 min	0.07	0.05
30 min	0.06	0.04
1 hr	0.05	0.03
2 hr	0.03	0.02

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#### Bond Strength of Epoxy Systems

(ASTM C 882 - Shear strength)

No failure of epoxy bond to S-102™ treated shear surfaces. (Concrete failed in compression.)

#### Pull Tests-Epoxy

No failure of epoxy bond to S-102™ treated flat surfaces. (Concrete failed in tension.)

#### Bond Strength of Urethane Systems (Shear and tensile)

Withstood 4 to 5 times the stress for the stated movement capability specified by the manufacturer.

#### Composition and Materials:

SINAK S-102™ is a water-based liquid with a proprietary formula in solution. It requires NO mixing, diluting or agitation. Color: Water clear; Specific Gravity: 1.1; Net Weight: 9.2 lbs/gal; Dry Solids Content (by weight): 11.1%; Flash Point: none; Toxicity: Non-toxic; voe: Contains NO volatile organic compounds or solvents.

#### INSTALLATION:

General Application Instructions:

The application should begin as soon as the surface can support foot traffic without leaving marks; and should be a continuous process from start to finish of the project. The application should not be interrupted except for rain.

1. Remove all debris that may prevent penetration of the S-102™.
2. Apply S-102™ in 1 light even coat with a garden or airless sprayer. DO NOT apply S-102™ in heavy coats. Drying time will vary from 10 to 30 minutes depending on temperature/environment.

#### EARLY CURE:

S-1021V may be used for early cure/evaporation control and finishing aide when applied immediately after concrete placement. After finishing the concrete, apply a second coat of S-102™.

#### IMPORTANT:

The treated area is immediately available for foot traffic. A water coat spray is not required but can be used to remove any excess material from a vertical surface.  
3. Clean all equipment by rinsing with water.

#### VERTICAL APPLICATIONS:

For vertical applications a maximum 3/8" nap roller may be used. Product rundown should be anticipated. Use a dry 3/8" nap roller to pick any and all rundown. Should the roller become saturated, change to a new, dry roller. Excess material not picked up by the roller may result in white scaly residue. After the S-102 has dried, wet the entire area with a light water spray.

#### HOT WEATHER APPLICATION:

In hot, (above 38° C), dry and/or windy conditions apply S-102™ shortly after loss (evaporation) of

surface water or upon completion of Soff-Cut operation. Follow the General Application Instructions.

#### COLD WEATHER APPLICATION:

In freezing temperatures, or if freezing is possible, call SINAK Corporation. After application of S-102™ no other curing method is required.

#### COVERAGE RATES:

14-16 sq.meters per litre. (Subject to surface finish).

#### STORAGE & HANDLING:

Store in cool dry area out of direct sunlight. Must be kept in tightly secured containers to prevent evaporation and contamination. S-102™ MUST be protected from freezing. Product that has frozen will not function as intended, and should be discarded.

#### AVAILABILITY

S-102™ has an unlimited shelf-life when stored according to the above requirements. SINAK S-102™ is available in 18.9 litre plastic pails, 208 liter drums and 1041 liter biodegradable totes from selected distributors. Red or white colour is available for visual inspection and/or reflectivity.

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#### Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

#### U.S. Department of Labor

Occupational Safety and Health Administration  
(Non-Mandatory Form)  
Form Approved  
OMB No. 1218-0072

IDENTITY (As Used on Label and List)	<b>SINAK S-102™</b>	<i>Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.</i>	
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#### Section I

Manufacturer's Name	<b>SINAK Corporation</b>	Emergency Telephone Number	<b>Chemtrec 1-800-424-9300</b>
Address (Number, Street, City, State, and ZIP Code)	<b>1949 W. Walnut Avenue San Diego, CA 92101</b>	Telephone Number for Information	<b>(619) 295-0076</b>
		Date Prepared	<b>January 1, 2011</b>
		Signature of Preparer (optional)	

#### Section II — Hazardous Ingredients / Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
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None

#### Section III — Physical / Chemical Characteristics

Boiling Point (At sea level)	<b>212°F / 100°C</b>	Specific Gravity (H <sub>2</sub> O = 1)	<b>1.1</b>
Vapor Pressure (mm Hg.)	<b>N/A</b>	Melting Point	<b>N/A</b>
Vapor Density (AIR = 1)	<b>Less than 1</b>	Evaporation Rate (Butyl Acetate = 1)	<b>Less than 1</b>
Solubility in Water	<b>Complete</b>		
Appearance and Odor	<b>Water clear; odorless</b>		

#### Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used)	<b>None</b>	Flammable Limits	<b>N/A</b>	LEL	<b>N/A</b>	UEL	<b>N/A</b>
Extinguishing Media	<b>None required</b>						
Special Fire Fighting Procedures	<b>N/A</b>						

Unusual Fire and Explosion Hazards

**N/A**

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Stability	Unstable		Conditions to Avoid
	Stable	X	
Incompatibility (Materials to Avoid) N/A			
Hazardous Decomposition or Byproducts None			
Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	
<b>Section VI — Health Hazard Data</b>			
Route(s) of Entry:	Inhalation?	Mild Irritant	Skin? Mild Irritant Ingestion? Mild Irritant
Health Hazards (Acute and Chronic)			
None			
Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
Non-carcinogenic	N/A	N/A	N/A
Signs and Symptoms of Exposure			
<b>May irritate eyes</b>			
Medical Conditions			
Generally Aggravated by Exposure N/A			
Emergency and First Aid Procedures			
Eyes: If sprayed or spilled into eyes, flush with liberal amounts of water for at least 15 minutes. If discomfort persists, call physician.			
<b>Section VII — Precautions for Safe Handling and Use</b>			
Steps to Be Taken in Case Material is Released or Spilled			
<b>May be slippery when wet - use caution during cleanup. For spills up to 100 gallons: Squeegee, broom, or flush material to nearest floor drain; or mop up and dispose of in landfill in compliance with local statutes. Over 100 gallons: Absorb with fuller's earth or similar material, and dispose of in landfill in compliance with local statutes.</b>			
Waste Disposal Method			
<b>Spillage or product discard: See above. Empty Containers: Flush 3 times with water, and reuse or recycle container.</b>			
Precautions to Be Taken in Handling and Storing			
<b>DO NOT store in aluminum containers. Hydrogen gas is produced which could burst container. Must be protected from freezing (discard frozen material). Store out of direct sunlight and/or excess heat.</b>			
<b>Section VIII — Transport Information</b>			
Concrete waterproofing compound, liquid - Non-Hazardous; NMFC#33880-2 Class 55			
<b>Section IX — Control Measures</b>			
Respiratory Protection (Specify Type) None required. Particle mask or filter advised for overhead or upwind spraying.			
Ventilation	Local Exhaust	Not required	Special N/A
	Mechanical (General)	Not required	Other N/A
Protective Gloves	Not required	Eye Protection	For overhead or upwind spraying, OSHA approved plastic goggles.
Other Protective Clothing or Equipment N/A			
Work/Hygienic Practices Clean equipment promptly with soap and water.			

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## CERTIFICATE OF COMPLIANCE



**Sinak Corporation**

S-102

Restrictions:

5348-420

Certificate Number

07/31/2008 - 07/31/2015

Certificate Period

Certified

Status

UL 2818 -2013 Gold Standard for Chemical Emissions for Building Materials, Finishes and Furnishings

Product tested in accordance with UL 2821 test method to show compliance to emission limits on UL 2818, Section 7.1 and 7.2. Building products and Interior finishes are determined compliant in accordance with California Department of Public Health (CDPH) Standard Method V11-2010 using the applicable exposure scenario(s).

### GREENGUARD GOLD CERTIFICATION CRITERIA FOR BUILDING PRODUCTS AND INTERIOR FINISHES

Criteria	CAS Number	Maximum Allowable Predicted Concentration	Units
TVOC (A)	-	0.22	mg/m <sup>3</sup>
Formaldehyde	50-00-0	9 (7.3 ppb)	µg/m <sup>3</sup>
Total Aldehydes (B)	-	0.043	ppm
4-Phenylcyclohexene	4994-16-5	6.5	µg/m <sup>3</sup>
Particle Matter less than 10 µm (C)	-	20	µg/m <sup>3</sup>
1-Methyl-2-pyrrolidinone (D)	872-50-4	160	µg/m <sup>3</sup>
Individual VOCs (E)	-	1/2 CREL or 1/100th TLV	-

- (A) Defined to be the total response of measured VOCs falling within the C6-C16 range, with responses calibrated to a toluene surrogate.  
 (B) The sum of all measured normal aldehydes from formaldehyde through nonanal, plus benzaldehyde, individually calibrated to a compound specific standard. Heptanal through nonanal are measured via TD/GC/MS analysis and the remaining aldehydes are measured using HPLC/UV analysis.  
 (C) Particle emission requirement only applicable to HVAC Duct Products with exposed surface area in air streams (a forced air test with specific test method) and for wood finishing (sanding) systems.  
 (D) Based on the CA Prop 65 Maximum Allowable Dose Level for inhalation of 3,200 µg/day and an inhalation rate of 20 m<sup>3</sup>/day  
 (E) Allowable levels for chemicals not listed are derived from the lower of 1/2 the California Office of Environmental Health Hazard Assessment (OEHHA) Chronic Reference Exposure Level (CREL) as required per the CDPH/EHLB/Standard Method v1.1 and BIFMA level credit 7.6.2 and 1/100th of the Threshold Limit Value (TLV) industrial work place standard (Reference: American Conference of Government Industrial Hygienists, 6500 Glenway, Building D-7, and Cincinnati, OH 45211-4438).

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