

# Technical Data Sheet (TDS)

## CHS (Chemical Skin) Polyurea

**CHS** is an extremely tough 100% solids super-polymer formulation, which stands up to high heat and provides excellent chemical resistance. **CHS** provides excellent bonding performance, low surface friction, toughness and abrasion resistance. This unique polymer is designed to be applied as a fast-set spray with gel time of approximately 5-10 seconds.

**CHS** is a naturally caramel colored translucent coating, which can be color tinted to produce translucent or opaque colors. This aromatic polymer is not UV stable and must be top-coated with an aliphatic UV stable coating such as our Clear Skin aliphatic polyurea, MGAP, WB1K or WB Acrylic polyurea Top Coat. **CHS** also provides excellent bonding performance, low surface friction, toughness and abrasion resistance.

**CHS** is available with flame retardants formula upon request.

Please call or email our Technical Support Group for any questions regarding material, application or prospective uses

### Health and Safety

Read the Safety Data Sheet (SDS) and container labels for detailed health and safety information. This product is intended for industrial use by properly trained professional applicators only.

### Physical Properties

Tensile Strength	ASTM D412	4200 psi
Elongation	ASTM D412	350%
Water Absorption (24 hr.)	ASTM D570	0.25%
Moisture Vapor Transmission	ASTM E96	0.24 perms
Taber Abrasion CS17	ASTM D4060	<50 mg/1k cycle
Tear Strength	ASTM D624	675 lbs./lin. in.
Hardness - Shore D	ASTM D785	70-75 D
Gel Time	Time	5-10 sec.
Mix Ratio	PBV	1A : 1B
Hose and Primary Heat		71°C (160°F)
Gun Pressure		2000 – 2500 psi

## Adhesion Results of Typical Substrates per ASTM D-4541 Elcometer

Concrete no primer	>300 psi	Cohesive failure; excellent bonding
Steel no primer	>1000 psi	Excellent bonding
Composite Lamination	>1000 psi	Saturated; excellent bonding
*All substrates primed with Primer 28		

## Technical Application Data

CHS Polyurea is a two component 100% solids formulation, which does not contain VOCs. Skin thickness has no limitation. Application substrate temperature ranges from 5°C (40°F) - 66°C (100°F). Functional ambient operation temperature ranges from -40°C (-40°F) to 121°C (250°F).

CHS must be applied using a standard 2-component high-pressure heated pumping spray machine such as Greco EXP-2. using hose and primary heats of 71°C (160°F). Spray pressures using Graco P2 or Fusion gun are to be set at 2000 psi.

Proper safety wear is mandatory. Refer to SDS for material and safety standard procedures.

## Coverage

Spray Coverage at 400 microns (16 mils) is 9 m<sup>2</sup> (100 sq.ft.) / mixed gallon.

CHS is available in different RAL colors.

## Substrate Surface Preparation

The surface must be clean, dry, stable and without loose areas or parts. All residues of fats, dust, dirt, salts or any other unrelated materials should be fully removed in order to ensure the adhesion of the coating to the surface. Leveled, stable, pollutant free and free from the loose parts is a guaranteed basis for the long lifespan of the system and achievement of the result.

Casting of new **concrete** can be coated 4 weeks (28 days in a temperature of 25°C) following the casting and with humidity content that does not exceed 4% in a 2.5cm depth under the surface. Concrete must have a compressive strength of at least 30Mpa; in case this requirement does not met, other recommended solutions for reinforcing the infrastructure should be applied.

The preparation of the surface should follow the requirements in the SSPC-SP13 standard in order to get a flat concrete surface that is dry, pollutant free, free from cement water loose parts and dust, with mechanical strength and upper level that are sufficiently porous and enable proper absorption of the coating. Remove completely pattern oil, curing materials, salts, efflorescence, cement water or any other materials using sandblasting, shot-blasting, mechanical milling, diamond polish or acidic etching.

**Metal** must be clean, free of contaminates and dust prior to primer / coating application. Metals

should be prepared with a sandblasting, shot blast or machine sanding depending on the severity of the surface condition. Spraying aggregates using compressed air (it is recommended to manually remove peeling layers of paint, rust peels and welding residues using manual or pneumatic scrapers before spraying) to get a surface level in a cleaning level so SA 2.5 (in accordance with the standard SIS 055900) in order to remove rust, loose parts, old paint, fats etc. from at least 95% of the area (in accordance with the standard SSPC-SP10). Perform dust cleaning using air pressure (fat and humidity free) or using a vacuum cleaner. In cases when aggregate spraying cannot be performed use mechanical or manual tools for careful cleaning using a disc, steel brush, sandpaper and scraper to remove mill scales, rust, layers of loose paint and pollutants up to a cleaning level of ST-3 in accordance with the standards SSPC-SP3, SSPC-SP11.

Call or e-mail our Tech Support Group for assistance in application and preparation.

It is always best to perform a test within a small section of the application area prior to full scale engagement.

## **Warranty**

The information herein is believed to be reliable, but unknown risks may be present. Epolac warrants only that the materials shall be of merchantable quality. This warranty is in lieu of all other written or unwritten, expressed or implied warranties. Epolac expressly disclaims any warranty of fitness for a particular purpose, or freedom from patent infringement. Accordingly, Buyer assumes all risks whatsoever as to the use of these materials. Buyer's exclusive remedy as to any breach of warranty or negligence claim shall be limited to the purchase price of the materials. Failure to strictly adhere to recommended procedures shall relieve Epolac of all liability with respect to the materials or the use thereof.

**Chemical test report see on the next page.**

**CHEMICAL RESISTANCE CHART**

**72 hours Immersion Test ASTM D3912**

Chemical Name	Results (25°C)
Acetic Acid	R
Acetone	NR
Ammonium Hydroxide (14%)	R
Brake Fluid	R
Brine-Saturated Water (310g/l)	R
Clorox (10%) Water	R
Diesel Fuel	R
Gasoline	R
Gasoline 5% MTBE	R
Gasoline 5% Methanol	R
Hydrochloric Acid (25%)	R
Hydrochloric Acid (10%)	R
Hydraulic Fluid	R
Isopropyl Alcohol	R
Lactic Acid	R
MEK	R
Methanol	R
Methylene Chloride	C
Mineral Spirits	R
Motor Oil	R
MTBE	C
Muriatic Acid (10%)	R
NaCl Water (10%)	R
Nitric Acid (20%)	RC
Phosphoric Acid (10%)	R
Phosphoric Acid (50%)	R
Potassium Hydroxide (10%)	R
Potassium Hydroxide (20%)	R. Dis
Skydrol	R
Sodium Hydroxide (25%)	R. Dis
Sodium Hypochlorite (10%)	R
Sodium Bicarbonate	R
Stearic Acid	R
Sugar Water	R
Sulfuric Acid (10%)	R
Sulfuric Acid (30%)	R
Toluene	RC
Trisodium Phosphate	R
Vinegar Water (5%)	R
Water	R
Water (14 days @ 82°C)	R
Xylene	RC

72 Hour Spot Test Chemical Resistance Data

CHS- Chem Skin Polyurea

Chemical	Rating
HCL 37.5%	9
NaOH 50%	8
H <sub>2</sub> SO <sub>4</sub> 50%	8
HI 57%	8
H <sub>3</sub> PO <sub>4</sub> 50%	8
Brake Fluid	10
Anti-Freeze	10
Motor Oil	10

**Rating Guidelines**

0-1	75-100% Film Dissolved
1-2	50-75% Film Dissolved
2-3	25-50% Film Dissolved
3-4	1-25% Film Dissolved
4-5	Film damage severe, cracking, pinholes
5-6	Film moderate to heavy damage, swollen, dulled
6-7	Film moderately damaged, haze, residue
7-8	Film with slight or no damage, slight haze, residue
8-9	Film in very good condition
10	Film unchanged, excellent condition

**CHART KEY:**

- R - Recommended (little or no visible damage)
- RC - Recommended Condition (swelling or discoloration)
- C - Conditional (crackling - wash down within 1 hour)
- NR - Not Recommended
- Dis. - Discoloration