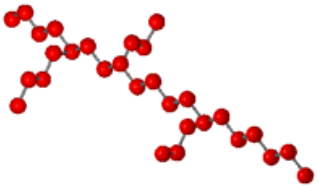

ENGINEERED POLYMER SYSTEMS, LLC

Brute-Chem Epoxy Novolac Flexible High Temperature (ENFHT)

Brute-Chem ENFHT is a high solids, low VOC epoxy novolac coating that is formulated for high chemical resistance, high temperature resistance and is flexible to help bridge cracks. The Brute-Chem ENFHT offers excellent wear ability, high gloss, good gloss retention, excellent chemical resistance, excellent impact resistance and good crack bridging. It can be applied clear or pigmented.

The Brute-Chem ENFHT was formulated to be used as a

- Primer and topcoat system.

System may be applied neat to obtain the highest elongation and crack bridging. For higher temperature applications the materials should be applied clear as a primer at 10 mils, then 14 mils applied with a saturation broadcast and then 14 mils to seal the broadcast. This will provide the highest temperature resistance.

The ENFHT hardener / resin system has fair resistance to UV exposure but it will yellow from UV exposure. The ENFHT will withstand 200°F (93°C) dry or 170°F (77°C) wet. Chemical resistance should be tested at this temperature for each situation.

The ENFHT coating offers excellent chemical resistance to a variety of chemicals. When chemicals are being used in combination each chemical should be tested. The ENFHT coating offers good to excellent chemical resistance to a wide variety of chemicals including splash/spillage of

- Aromatic and aliphatic hydrocarbons
- 98% sulfuric acid, 37% hydrochloric acid and other inorganic acids
- 80% acetic acid and other organic acids
- Dilute and concentrated caustics
- Gasoline, jet fuel and solvents

TYPICAL PROPERTIES

Components ENFHT Resin ENFHT Hardener

Viscosity (70°F)	400-500 cps	800-900 cps
Flash Point	>300°F	>255°F
Weight per gallon (Pounds / gallon)	9.3	8.5

VOC clear 10 g/l, pigmented 8 g/l

Mixed Components

	50°F	70°F	90°F
Working time (min)	30-40	20 - 25	15-20
Drying time (hours)			
Set to touch	12-16	8-12	6-8
Maximum recoat	36 hr	30 hr	24 hr

Floor installation temperature limits
50°F – 90°F (minimum to maximum)
Consult Engineered Polymer Systems for other temperatures.

Physical Properties Resin / Hardener only

Tensile Strength ASTM D638-10

	Cure Cycles	
	7 days 77F(25C)	4 months 77F(25C)
Strength	1,010 psi	1,100 psi
Modulus	22,800 psi	46,200 psi
Elongation	103 %	95 %

Compressive Strength ASTM C-579A
7 days 77F(25C) 9,000 psi (62 MPa)
Abrasion Resistance ASTM D4060-10
60 mgs. Weight loss
(CS 17 wheels 1000 gm. weight, 1000 cycles)
Water absorption ASTM C-413 <0.1 %
Flammability ASTM D-635 –self extinguishing
Adhesion to concrete >400 psi

PACKAGING

Brute-Chem ENFHT is supplied in kit form. The resin / hardener are available in drums (mix ration of 2:1 resin to hardener by volume), full 5 gallon pails or in prepackaged units with 2 gallons of resin in a 5 gallon pail and one gallon of hardener.

A typical mix consists of 2 gallons (7.8 L) of resin, 1 gallon (3.8 L) of hardener and if pigmented one pint (0.24 L) of colorant.

ESTIMATING MATERIALS

Brute-Chem ENFHT is typically applied with a squeegee and back-rolled. When applied as a primer over prepared concrete the material typically goes down at 10 mils or 160 SF (15.2 SM) per gallon or 480 SF (45.7 SM) per 3 gallon (11.4 L) mix.

Brute-Chem ENFHT can be applied at thicknesses ranging from 6 mils to 20 mils depending on the requirements of the job.

APPLICATION INSTRUCTIONS

Concrete should be tested for moisture transmission prior to installing any materials. Contact Engineered Polymer Systems for specific testing methods and ranges prior to installing these materials.

Surface Preparation – Shot blasting or diamond grinding are the preferred methods on concrete. The concrete should be blasted or ground to a 10 to 20 grit sand paper finish. Any oils or contaminants must be removed prior to installation.

Mixing – The materials are packaged either in drum kits or prepackaged units. Contact Engineered Polymer Systems for detailed instructions on how to pour off drums.
The prepackaged units should be mixed as follows:

- Open the 5 gallon can marked Brute-Chem ENFHT Resin, open the 1 gallon can marked Brute-Chem ENFHT Hardener and pour into the 5 gallon pail. If colorant is required turn on the jiffy type mixer and add the colorant to vortex of the mixer as it is running. Mix for 2-3 minutes.

- Temperature affects the pot life and working time of the materials. The higher the temperature the shorter the working time. Do not mix more materials than can be installed with-in the pot life period.

Placement of Materials

- Immediately pour the mixed material on to the concrete floor or previously coated floor and squeegee out the materials at the desired application thickness. The coating should then be back rolled with a chemical resistant roller cover to level the primer and eliminate any pudding.
- In some colors a variance of colors can be seen when the coating is being applied. It is recommended to not roll back into coating that has been setting for several minutes as a color change may be seen after the coating has cured.
- It is always necessary to pour the freshly mixed coating into a wet edge when squeegeeing to minimize any color variance. Do not run the squeegee edge completely down or a color change may be visible.

Clean-up
Any mixing and application equipment should be cleaned up immediately upon completion of the job. Typically xylene is used to clean all the equipment.

Humidity and Dew Point
The Brute-Coat ENFHT can be affected by high humidity. With most epoxy curing agents if the humidity and dew point are within a certain range a sweat out can occur.

Condensation can occur on the surface of concrete or epoxy when the substrate is below the dew point. This condensation can cause a film of moisture to form on the substrate interfering with adhesion or

causing a blush. Check dew point temperatures prior to applying any materials. Any hazing of the film or greasy feeling may indicate a blush contact Engineered Polymer Systems prior to proceeding.

Disposal

All materials should be disposed of in accordance with all Federal, State or Local regulations. Consult with EPA for regulations in your area.

STORAGE / SHELF LIFE

All materials should be stored in original – unopened containers in an enclosed building out of direct sunlight. Ideally the materials should be between 60 – 80°F for 24 hours prior to installation. Installation of materials at temperatures outside of this range may make them difficult to install. The shelf life in unopened containers is a minimum of one year and typically much longer. Consult Engineered Polymer Systems if you have any concern about materials.

SAFETY

CAUTION – READ MATERIAL SAFETY DATA SHEETS BEFORE USING ALL PRODUCTS.

Follow recommendations for ventilation. Avoid contact with eyes or skin. Contact with skin requires washing with soap and water, eye contact requires immediately flushing / consult physician. If clothes become contaminated remove and wash prior to wearing.

These materials are for industrial use only.

WARRANTY / DISCLAIMER

All statements and recommendations are based on experience we believe to be reliable. The use or application of these products is beyond the control of Engineered Polymer Systems and therefore Engineered Polymer Systems does not make any warranty expressed or implied, as to results or hazards from its use. The suitability, risk and liability whatsoever of this product for any intended use shall be solely up to the user.

Liability if any shall be to supply replacement materials. The modification of any materials not outlined in this technical bulletin nullifies the warranty unless prior written permission is given.