

HYCHEM TL9

Flake filled novolac epoxy coating

DATA SHEET



HYCHEM

INFRASTRUCTURE SOLUTIONS

HYCHEM TL9 is a flake filled novolac epoxy coating with excellent chemical resistance to a wide range of chemicals varying from mineral acids to hydrocarbons, caustic solutions and aqueous salts.

It has been specifically formulated for resistance to 98% sulphuric acid but is also suited to 40% phosphoric, 30% hydrochloric and 20% nitric acid solutions. A proven versatile system for areas of chemical exposure, offering protection from a broad range of acids and chemicals. A unique flake additive provides the ultimate in protection.

Hychem TL9 is the result of many years in the field testing and research. Hychem TL9 with the addition of specialist flake outperforms all conventional novolac epoxies.

AREAS OF USE

The product is designed for use in a wide variety of industries where chemical spillage is commonplace as well as fluid containment in the water industry, power generation, pulp and paper, waste treatment etc.

HYCHEM TL9, a primary use is for chemical bunds, is in the fertilizer industry, mineral processing and ammonium nitrate storage depots. The product is ideal for secondary containment of chemical storage of a large range of chemicals, especially strong caustic soda and concentrated sulphuric acid. It is not recommended for protection against strong organic acid solutions.

HYCHEM TL9 whilst primarily designated for use with concrete structures is also suited to the protection of steel requiring protection against corrosive chemicals.

TYPICAL APPLICATIONS

- Food and beverage processing
- Mining
- Manufacturing
- Chemical storage areas
- Secondary containment
- Battery storage
- Metal plating
- Water industry chemical bunds
- Chemical tank lining

CHEMICAL RESISTANCE

Immersion resistance@7 days	% Wt change	Comment
Water	0.2%	Excellent
98% Sulphuric acid	-0.1%	Excellent
40% Sulphuric acid	0.4%	Excellent
30% Nitric acid	1.0%	Good
30% Hydrochloric	0.5%	Very good
50% Caustic soda	0.1%	Excellent
100% Xylene	0.3%	Excellent
Aliphatic hydrocarbons	0.1%	Excellent
100% Methylated spirit	8.0%	Short term only
25% Ammonia	0.6%	Excellent
25% Acetic acid	6.0%	Short term only
16% Sodium hypochlorite	0.9%	Excellent

TECHNICAL DETAILS

Product type	100% solids, epoxy novolac
Mix ratio	2 Part A : 1 Part B by volume
Compressive strength	65 MPa
Tensile strength	20 MPa
Elongation	10%
Flexural strength	35 MPa
Hardness Shore D	70
Pot life	60 min@10°C 30 min@ 20°C 15 min@30°C
Chemical exposure	7 days
Application temperature	Min 10°C - Max 32°C
Recoat time	Min 6 hours@25°C Max 24 hours@25°C

APPLICATION GUIDELINES

Surface preparation

Concrete

All concrete surfaces should be clean and free from contaminants such as curing agents and other coatings. Water content of the concrete should be such that it passes the plastic sheet test (ASTM D4263). The resultant surface to be coated must have a minimum surface tensile strength (ASTM 4541) of 2.1 MPa.

- Prepare the concrete surface by Abrasive Grit Blasting, Shot Blasting, Scarifying, Ultra High Pressure Water Jetting or Scabbling to provide the appropriate surface profile for optimum mechanical keying.
- The extent of surface preparation required is dependant upon but not limited to the thickness of the coating system to be applied. It is highly recommended surface preparation is carried out in accordance with industry standards and publications such as NACE 02203 item No. 22420 or ICRI Technical Guideline No. 03732.

Steel

All steel surfaces need to be abrasive blast cleaned to a surface profile of a minimum of 75 microns and then coated with HYCHEM Metal Primer.

Pre-conditioning product

It is important to note that even when the application environment is warm, products which have been stored in cold or cooler conditions should always be pre-conditioned ideally to 20-25°C to ease mixing, application and help avoid other potential issues such as amine bloom or blushing.

Applying a cold product in a warm environment is not recommended.

Priming

Apply a priming coat of E500P to the substrate. See E500P data sheet for details.

Mixing

Important – Do not mix more than can be adequately applied within 10 to 15 minutes.

- Mix Hychem TL9 liquid components (Resin & Hardener) together using a helical mixer at a speed of 500 rpm until the mix becomes homogeneous (approx. 2 minutes)
- Move the mixer around from side to side and top to bottom and scrap the sides of the mixing vessel to ensure thorough mixing.

Applying

Smooth Finish

- Apply first coat of Hychem TL9 using a short nap roller at a coverage rate of approx. 4 sqm/litre. Apply second coat of Hychem TL9 at a coverage rate of approx. 4 sqm/litre.

Non-Slip Finish

- Apply as above. Broadcast grit aggregate (size to suit anti-slip requirement) into the first coat while it is still wet and allow to cure overnight.
- Sweep off loose quartz aggregate.
- Apply second coat of Hychem TL9 to seal the surface.

Slip resistance is dependent on the size (grading) of aggregates used:

- 60 mesh Alumina – R 11
- 36 mesh Alumina – R 12
- 24 mesh Alumina – R 13

Colour

Hychem TL9 is supplied in Mid Grey. The product is not colour stable under exposure to UV light.

Heavy duty option

Hychem E900 may be used as a base layer to form a heavy duty coating providing greater protection from physical and chemical damage. See E900 data sheet for details.

COVERAGE

When applied at 4 sqm/litre, a 6 litre kit will cover approximately 24 sqm.

CLEAN UP

Xylene or MEK can be used for cleaning tools and equipment before the mixed compound begins to harden.

PACKAGING

6 litre kit

WARNING - ENVIRONMENTAL CONDITIONS

Temperature and the surrounding atmospheric conditions will play a part in the curing process of all epoxy products. Under conditions of low temperatures and high humidity the final cured surface finish can be adversely affected potentially resulting in poor gloss retention, discolouration over time, poor overcoatability and intercoat adhesion. Quite often these conditions will result in the formation of a white film over the surface often evident after contact with water. This chemical reaction with the atmosphere is commonly referred to as “amine bloom” or “amine blush”.

If this occurs then the existing coating will need to be abraded to completely remove the affected surface to ensure the adhesion of subsequent applications. In some cases partial or complete re-priming may be necessary.

Attention also needs to be paid to the substrate temperature which should be at least 3°C and preferably 5°C above the dew point during the curing phase.

Industry standards recommend the accurate recording of times and dates, batch numbers, consumption rates and environmental conditions including substrate and air temperatures, humidity levels and dew point readings during both the application and curing processes. Full material warranties cannot be provided unless all the relevant data has been recorded accurately.

If in doubt consult the Hychem technical department for advice.

NOTE: Customer responsibility

The technical information and application advice given here is based on the best information available at the time of print. As the information herein is of a general nature, no assumption can be made as to the products suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by Commonwealth or State Legislation.

Field support, where provided, does not constitute supervisory responsibility. Suggestions made by HYCHEM either verbally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they and not HYCHEM are responsible for carrying out procedures appropriate to a specific application.

If unsure contact Hychem for further technical advice before proceeding.