



# SYNPOL PRODUCTS PRIVATE LTD.

Regd Office & Factory: 77, G.V.M.S. AUDYOGIC VASAHA LTD.,  
ODHAV, AHMEDABAD – 382 415, INDIA

PRODUCT CODE : Hardener / 04.12

## Hardener 410

TYPE : Epoxy hardener based on aliphatic amine adduct with epoxy resin for solvent based chemical resistant coatings.

### SPECIFICATIONS :

1) Appearance	Clear slightly yellow liquid with ammonical odour.
2) Specific gravity @ 25 <sup>o</sup> C.	0.97 - 0.98
3) % Solids @ 120 <sup>o</sup> C. for 1 hrs.	48 - 52
4) Solvent	Xylene / n-Butyl alcohol
5) Viscosity @ 25 <sup>o</sup> C., poises	10 - 20
6) Colour gardner	2 max.
7) Amine value by HClO <sub>4</sub> , mg KOH / gm of solids	200 - 240
8) Mixing ratio with 100 parts of Synpol 450 XX	65 - 70
9) Pot life @ 25 <sup>o</sup> C at 50 % solids of 100 gm mass, hrs.	2 min.
10) Gel time @ 25 <sup>o</sup> C at 50 % solids of 100 gm mass, hrs.	3 - 4

**SOLUBILITY :** Hardener 410 is soluble in equal mixture by weight of Butanol-Xylene, & ketones.

**COMPATIBILITY :** Hardener 410 is compatible with all types of epoxy resins generally used for ambient temperature curing chemical resistant coatings. Due to restricted solubility of Hardener 410, it is advised that equal ratio of xylene / butanol should be adjusted in entire formulation including base and hardener to achieve best film properties like gloss, leveling and adhesion. Small quantity of ketones may be added, if required.

**APPLICATIONS :** Hardener 410 in combination with epoxy resin Synpol 450 XX is very useful for chemical resistance coatings with or without coal tar modifications. Hardener 410 has physiological and technological advantage as compared to use of aliphatic polyamine alone. Further it improves ease of application, appearance and other properties, notably freedom from bloom. In addition it provides low toxicity and manageable mixing ratio with epoxy resins.

Hardener 410 when properly formulated generally gives good to excellent resistance against water and aqueous media, except organic acids and solvents like ketones and glycol ethers.

Recommended cure schedule is 2 - 7 days at room temperature aprx. 25<sup>o</sup> C and for accelerated cure, coating may be forced cure at elevated temperature of 80 - 120<sup>o</sup> C for 30 minutes.

### SUGGESTIVE FORMULATION :

#### *Epoxy amine adduct two pack maintenance coating.*

<b>Part I</b>		kgs	
	Titanium dioxide Rutile	12.5	
	Lamp black	0.5	
	Talc	10.0	
	Synpol 450 XX	37.5	
	Synpol MF 268	1.0	
	MIBK	10.0	
	Cellosolve	<u>4.0</u>	75.5
<b>Part II</b>			
	Hardener 410	<u>24.5</u>	<u>24.5</u>
		Total	100.0

Mixing ratio by weight : Part I : Part II :: 75.5 : 24.5

% Non volatiles : 64.0

Continued....

**DISCLAIMER:** Above Specifications are subject to change without prior notice and company reserves the right to modify the same at any time

## MATERIAL SAFETY DATA :

Product name	Hardener 410
Flash point ° C. (Abel closed cup)	30
Flammability	Moderate fire risk.
Toxicity	Mild toxic. Avoid direct contact with skin.
Handling	Keep away from sources of ignition, provide all electric connections of flame-proof design. Wear safety glasses, rubber gloves and protective clothings.
Emergency treatment and measures	
1 Hygienic precautions	Adequate ventilations.
2 Hygienic treatments (First Aid)	Flush eyes thoroughly with water. Apply ophthalmic cortisone for conjunctivitis and keratities. Wash out contaminated skin with soap and water. Gastric lavage (stomach wash), if swallowed, followed by saline catharsis.
3 Fire precautions (in case of outbreaks)	Use dry chemical or carbon dioxide. Water spray may help to keep containers cool, to dilute leaked resins and to diffuse vapours.
Spills and leakage	Absorb liquid materials in sand and collect solid material and burn under hood in incinerator.
Disposal and waste treatment	Spray into furnace under controlled conditions.

### STORAGE :

Hardener 410 should be stored in cool place under shade. The properties are so adjusted to have storage stability of minimum 6 months.

### PACKING :

25 kgs. M.S. drums, 50 kgs. Plastic carboys and 200 kgs. M.S. barrels.

### DISCLAIMER :

Information in this literature is to the best of our knowledge true and accurate. However, since conditions under which our products may be used are beyond our control, recommendations are made without warranty or guarantee.

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