

ANCAMINE® SUR-WET R

Curing Agent

DESCRIPTION

Ancamine® Sur-Wet R curing agent is a water-insoluble, modified aliphatic polyamine curing agent for epoxy resins. The product can be used to formulate 100% solids coatings for underwater application and cure. Surface preparation prior to underwater application is important. Specialized cleaning equipment is available, such as a compressed air-powered mechanical wire brush for small areas. To apply an underwater coating formulated with Ancamine® Sur-Wet R curing agent, a stiff bristle brush, for example, may be used.

Ancamine® Sur-Wet R curing agent can also be used to formulate 100% solids coatings that are applied via brush in air to both Damp and water-logged concrete. Surface preparation by shotblasting, sandblasting or waterblasting is required.

Film defects are minimized by the unusual flow and wetting characteristics of Ancamine® Sur-Wet R curing agent which bonds by a process of water displacement, dispersion and exudation; which is quite distinct from the degradable emulsification that occurs during underwater application and cure of conventional polyamide-cured, epoxy “splash-zone” mastics.

For curing in the range of 40–60°F, or for a faster cure at normal ambient temperature, Ancamine® Sur-Wet R curing agent may be co-cured with a minor proportion of Ancamine® MCA curing agent (which also lowers the viscosity) or accelerated with small quantities of Ancamine® K54 curing agent.

TYPICAL PROPERTIES

Property	Value	Unit	Method
Appearance	Amber liquid		
Color	4	Gardner	
Viscosity @ 25°C / 77 °F	6,500	cP	
Amine Value	195	mg KOH/g	
Specific Gravity @ 25°C / 77 °F	0.98		
Density @ 25°C / 77 °F	8.2	lb/gal	
Flash Point	226	°F	closed cup
Equivalent Wt{H}	222		
Recommended Use Level	115	phr	EEW = 190

ADVANTAGES

- Films are tough, flexible, light in color and exhibit good gloss
- Good resistance to water and mild chemicals

APPLICATIONS

- 100% solids coatings for underwater use and on damp or waterlogged concrete
- Non-structural (flexible) adhesives for wet-surface/ underwater patch kits
- Bonding new concrete to old concrete or wet concrete to itself or steel

SHELF LIFE

At least 24 months from the date of manufacture in the original sealed container at ambient temperature. Store away from excessive heat and humidity in tightly closed containers.

STORAGE AND HANDLING

Refer to the Safety Data Sheet for Ancamine® Sur-Wet R curing agent.

TYPICAL HANDLING PROPERTIES*

Gel Time [150g mix @ 77°F (25°C)] (min) 60
Thin Film Set Time @ °F (h) 6

TYPICAL PERFORMANCE*

Heat Deflection Temperature (°F) 113

* Ancamine® Sur-Wet R curing agent formulated with standard Bisphenol-A based (DGEBA, EEW=190) epoxy resin.

SUPPLEMENTARY DATA

COATING MANUFACTURE: The selection of coloring pigments, anticorrosive pigments, antifouling agents, extender films, thickeners and thixotroping agents when formulating with Ancamine® Sur-Wet R is the same as for conventional 100% solids, twocomponent, amine-cured epoxy coatings. Pigments and fillers that are sensitive to water or alkali amines should be avoided. Dispersion in the epoxy and/or Ancamine® Sur-Wet R curing agent components is accomplished using a commercial high-speed disperser designed for viscous liquids. Formulations are usually compounded to provide a 1:1 volume mix ratio of two components.

For underwater applications, equal volumes of Parts A and B are measured into a mixing container, which is convenient for handling by a diver. Thorough mixing is first completed above water, preferably with a paint stirrer attached to a drill, run at a speed slow enough to avoid aeration due to a vortex. The material is then immediately carried below by the diver and applied before expiration of the working life.

The following starting formulation is a simple pigmentation using a conventional undiluted, liquid epoxy resin with a viscosity of 100–160 poise and an EEW of about 190. It is given to demonstrate the effect of variation in the curing agent concentration.

SAMPLE FORMULATION

Property	Pounds	Gallons
Liquid Epoxy Resin	100.0	10.36
Medium/Fine-Ground Silica	46.1	2.06
Titanium Dioxide (Rutile)	26.4	0.77
(lb/gal)	172.5	13.19
Part B		
Ancamine® Sur-Wet R	Varies	
wt/gal	8.15 lb.	

As shown in the following chart, increasing the Ancamine® Sur-Wet R curing agent concentration above stoichiometry increases the film flexibility but decreases the resistance to acids and xylene.

CHEMICAL RESISTANCE DATA

Weight Ratio		Volume Ratio		Chemical Exposure Tests ¹					Gardner ²	
Part A	As Epoxy Resin	Part B (phr)	Part A (pigmented epoxy)	Part B (Ancamine® Sur-Wet R)	5% Acetic Acid	30% Caustic Soda	Xylene	30 SAE Lube Oil	Impact	Remarks
172.5	100	57.5	1.90	1.0	P	P	P	P	F	Hard, Brittle
172.5	100	76.5	1.40	1.0	P	P	P	P	F	Hard, Brittle
172.5	100	115.0 ³	0.95	1.0	P	P	P	P	F	Hard, Slightly Brittle
172.5	100	137.0	0.80	1.0	P	P	F	P	F	Hard, Tough
172.5	100	172.5	0.60	1.0	F	F	F	P	P	Hard, Flexible
172.5	100	258.5	0.40	1.0	F	F	F	P	P	Soft with Tear
172.5	100	345.0	0.30	1.0	F	F	F	P	P	Soft with Tear

(1) After 24 hours—5-mil film on steel

(2) Pass or fail 8- inch pounds; 5–10-mil film on 20-gauge mild steel

(3) Approximate stoichiometric concentration

P = Pass; F = Fail

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