

Hardener H5

FEATURES

- Excellent temperature resistance
- Extended pot life

COMPOSITION

- Cycloaliphatic diamine



H5 hardener is mainly used in combination with liquid epoxies. Characterized by a long time of use, low exothermic peak and negligible shrinkage, it generates a polymer with excellent mechanical properties and chemical resistance, as well as excellent thermal resistance. In combination with solid epoxies and solvents, it is used as a curing agent for industrial use and anti-corrosion coatings.

APPLICATIONS

- Composites, encapsulation, adhesives and electrical applications, construction of aircraft parts, hardening of concrete roofing, repair mortars and surfaces subject to heavy wear.

TYPICAL PROPERTIES

Specifications writers: These values are not intended for use in preparing specifications. Please contact your local sales representative prior to writing specifications on this product.

Properties	Unit	Value
Aspect	Visual	Liquid
Color	Apha	≤12
Purity	%	99.6 min
Water content	%	≤0.1
Density at 23°C	g/cm ³	0.944
Viscosity at 23°C	mPa.s	100 – 140
Molecular weight		238.4
Equivalent weight {H}		60
Curing with standard Bisphenol-A epoxy resin (DGEBA, EEW=190)		
Mix ratio (resin : hardener)	pbw	100 : 32
Viscosity of the mixture	mPa.s	2800
Pot life at 23°C (150g)	Minutes	300
Gel time at 23°C (150g)	Minutes	360
Hardness	Shore D	87
Flexural modulus	MPa	2290
Flexural strength	MPa	53.2
Tensile strength	MPa	28.3
Elongation at break	%	4.9
Compressive modulus	MPa	969
Compressive strength	MPa	38.7
Linear shrinkage [500x50x10mm]	%	0.04
Glass transition (DSC)	°C	180

SETTINGS

H5 hardener can crystallize at low temperatures. In the presence of

solidification or crystals, heat in the oven at 50°C until complete melting. Avoid local overheating.

STOICHIOMETRY

Calculation of the grams of hardener required for 100g of resin:

$$\text{g of hardener} = \frac{\text{AHEW}}{\text{EEW}} \times 100$$

AHEW= amino equivalent
EEW= epoxy equivalent

MIXING

Weigh resin and hardener in the indicated ratio and mix until a homogeneous compound is obtained.

Warning! Epoxy resins and amines can generate a highly exothermic, uncontrolled reaction, with decomposition above 250°C. Prepare limited quantities of material and proceed with application.

POTLIFE E GELTIME

The Potlife or time of use of the mixture is normally the time required for an increase equal to twice the initial viscosity. Both Pot-life and Gel-time depend on mass and temperature: the greater the mass, the faster the reaction will be. The higher the temperature, the faster the reaction.

CURING

The system cures at room temperature but without minimal heat treatment at 50-60°C it will be extremely brittle. The best performances are obtained with the following cycle:

24 hours at TA +
2 hours at 80°C +
2 hours at 120°C +
2 hours at 160°C +
2 hours at 200°C +

Recommended temperature ramp:
heating: 1°K/min
cooling: 1°K/min.

Post cure into the mold or on a conformer to avoid distortion during the run.

HANDLING PRECAUTIONS

The information for a correct and safe handling of the products are contained in the safety data sheet. Consult the safety data sheets before use for complete information on the risks for health and environment and for suitable protective devices to be adopted. Share the safety data sheets with all the staff involved in the use of the products.

PACKAGING

The product is supplied in 5kg, 25kg, 180kg containers.

USABLE LIFE - STORAGE

Store in the original, unopened containers at a temperature between +15°C and +35°C. Be sure to close containers after use. This material, when stored under the specified conditions, has a shelf life of 24 months from the date of manufacture.

LIMITATIONS

This product is neither tested nor represented as suitable for food contact, skin contact or medical uses.

LIMITED WARRANTY

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