CRAYAMID®

TECHNICAL DATA SHEET

CRAYAMID® 125

Reactive polyamide

PRODUCT APPLICATION DETAILS

CRAYAMID® 125 is a medium viscosity liquid amino polyamide resin used in conjunction with epoxy resins to produce high build coatings and structural and laminating adhesives.
It is used where the prime requirements are fast cure and flexibility.

SALES SPECIFICATIONS

	CHARACTERISTICS	METHODS
Viscosity (Brookfield SC4-21/13R, 4.7 s-1) (@ 40°C)	8000 - 10000 mPa.s	ISO 3219
Color	11 max Gardner	ISO 4630
Amine value (Perchloric Method)	340 - 380 mg KOH/g	CVI 069

OTHER CHARACTERISTICS[1]

	CHARACTERISTICS	METHODS
Density (@ 20°C)	0.97 g/ml	ISO 2811
Active Hydrogen Equivalent Weight	130	

[1] The data provided for these properties are typical values, intended only as guides, and should not be construed as sales specifications

MARKETS & APPLICATIONS

COATINGS & INKS

- INDUSTRIAL COATING
  - GENERAL INDUSTRY
  - METAL EXTERIOR - POWDER
  - PROTECTIVE COATING
  - PROTECTIVE AND MARINE COATING

PERFORMANCE BENEFITS

- Fast Cure
- Good Flexibility
- Excellent adhesion to a wide variety of surfaces, such as glass, wood, ceramics, masonry, leather and various plastics.

CRAYAMID® 125

FORMULATION GUIDELINES

RECOMMENDATIONS FOR USE

The selection of a particular grade of epoxy resin will depend on the end use, although for high build coatings a low molecular weight epoxy resin [1] (epoxide equivalent below 250) is recommended. In solvent based coatings both the medium molecular weight [2] and unmodified liquid [1] epoxy resins may be used, whilst for adhesive applications either the unmodified [1] or modified [3] liquid epoxy resins are recommended. Whilst the mix ratio when using CRAYAMID® polyamides is not critical, optimum performance of a coating is achieved by stoichiometric mixing of the epoxy and CRAYAMID® 125. The mix ratio is calculated from the active hydrogen equivalent weight (AHEW), since each epoxy group in the base resin will react with one active hydrogen present in the polyamide. The AHEW of CRAYAMID® 125 is typically 130 on solid resin. Considering that each epoxy reacts with one reactive hydrogen, the mix ratio of CRAYAMID® 125 and an epoxy resin with epoxide equivalent approx. 500 [2] is calculated as follows:
-Mass of solid resin (g): CRAYAMID 125/ 75% epoxy resin = 130/500
-Mass of resin solution (g): CRAYAMID 125/ 75% epoxy resin = 130/667
The resulting epoxy : polyamide mix ratio in this case is approx. 80:20 based on solid resin. Excess polyamide in a coating will impart flexibility and adhesion at the expense of solvent resistance.

CURE RATE

A 75:25 epoxy resin [2] : CRAYAMID® 125 blend on solid resin will reach a tack-free time in 180 minutes at 25°C. Films will obviously dry more rapidly if higher molecular weight epoxy resins are used.
An induction period is recommended to ensure complete compatibility. Cure of epoxy:polyamide systems can be accelerated by a range of catalysts, and in particular Tris(dimethylaminomethyl) phenol types [4] which are recommended for use at a level of 1 - 5% (calculated by weight on total resin). It should be noted, that when catalysts are employed, pot life will be reduced and there may be an adverse effect on flexibility and colour.

POT LIFE

Reaction between the epoxy resins and CRAYAMID® 125 will commence as soon as the reactants are mixed, and even at room temperature the system will have limited pot life. Solvents have a considerable effect on pot life, with alcohols tending to reduce pot-life and esters and ketones tending to extend it. Since ketones and esters form complexes with amino polyamides on storage, these solvents should only be incorporated into the epoxy resin component.
The pot life of a CRAYAMID® 125 : epoxy resin system is dependent upon various factors including cure temperature, reactant ratio, extenders and accelerators.
CRAYAMID® 125 : epoxy resin adhesives will cure at ambient temperature but cure time can be reduced by heating to elevated temperature.

ADHESION

CRAYAMID® 125 : epoxy resin systems demonstrate excellent adhesion to a wide variety of surfaces, such as glass, wood, ceramics, masonry, leather and various plastics.

Notes: [1] Unmodified epoxy resin epoxide equivalent 200: Epikote™ 828 (Momentive), [2] Epoxy resins epoxide equivalent approx. 500: Araldite® 6100 (Hutsman), [3] Modified epoxy resins epoxide equivalent approx. 200, [4] Ancamine® K54 (Air prducts)

PRODUCT SAFETY

Please refer to the corresponding Safety Data Sheet.

STORAGE AND HANDLING

CRAYAMID® 125 should be stored indoors in the original, unopened and undamaged container, in a dry place at a temperature not exceeding 30°C. Exposure to direct sunlight should be avoided. In the above mentioned storage conditions the shelf life of the resin will be from the date of manufacturing.
Shelf Life (Months): 12

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