CRAYAMID®

TECHNICAL DATA SHEET

CRAYAMID® 230X-60

Reactive polyamide

PRODUCT APPLICATION DETAILS

CRAYAMID 230 X 60 is an epoxy polyamide adduct in which the polyamide is pre-reacted with a portion of the epoxy resin.
This gives the product several advantages over standard polyamides:

- no induction period required
- excellent compatibility with solid epoxy resins
- improved low temperature curing
- fast cure rate
- improved sensitivity to moisture

SALES SPECIFICATIONS

	CHARACTERISTICS	METHODS
Solid content (@ 125°C)	59 - 61	ISO 3251
Viscosity (Brookfield SC4-21/13R, , 19 s-1) (@ 25°C)	1500 - 3000 mPa.s	ISO 3219
Color	12 max Gardner	ISO 4630
Amine value (Perchloric Method)	200 - 230 mg KOH/g	CVI 069

OTHER CHARACTERISTICS[1]

	CHARACTERISTICS	METHODS
Volatile	Xylene	
Flash point	24 °C	ISO 3679
Density (@ 20°C)	0.93 g/ml	ISO 2811
Active Hydrogen Equivalent Weight	280	

[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
  - COIL
  - GENERAL INDUSTRY
  - PROTECTIVE COATING
  - PROTECTIVE AND MARINE COATING
  - RIGID PACKAGING METAL (CAN & OTHERS)

PERFORMANCE BENEFITS

- no induction period required
- excellent compatibility with solid epoxy resins
- improved low temperature curing
- fast cure rate
- improved sensitivity to moisture

CRAYAMID® 230X-60

FORMULATION GUIDELINES

CRAYAMID 230 X 60 is recommended for use with epoxy resins having an epoxide equivalent in excess of 425.
With epoxy resins of lower equivalent weight, compatibility is only achieved after a prolonged induction period.
Whilst the mix ratio when using polyamides is not critical, optimum performance of a coating is achieved by stoichiometric mixing of the epoxy and CRAYAMID 230 X 60.
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 230 X 60 is typically 280 on solid resin.
Considering that each epoxy reacts with one reactive hydrogen, the mix ratio of CRAYAMID 230 X 60 and an epoxy resin with epoxide equivalent approx. 500 is calculated as follows:<table class="table table-bordered"><tbody><tr><td>
Resin
</td><td>
Mass of Solid Resin
</td><td>
Mass of Resin Solution
</td></tr><tr><td>
CRAYAMID 230 X 60
</td><td>
280g
</td><td>
467g
</td></tr><tr><td>
75% Epoxy Resin
</td><td>
500g
</td><td>
667g
</td></tr></tbody></table>

The resulting epoxy:polyamide mix ratio in this case is approx. 65:35 based on solid resin.
Excess polyamide in a coating will impart flexibility and adhesion at the expense of solvent resistance.
In a similar manner the following ratios can be calculated again on solid resin:<table class="table table-bordered"><tbody><tr><td>
Epoxide equivalent
</td><td>
CRAYAMID 230 X 60: Epoxy resin
</td></tr><tr><td>
850-1050
</td><td>
25 : 75
</td></tr><tr><td>
1550-2000
</td><td>
15 : 85
</td></tr></tbody></table>

CRAYAMID 230 X 60 has improved compatibility and low sensitivity to moisture.
These combined advantages significantly reduce the possibility of film defects forming under low temperature curing conditions.
Films applied at room temperature develop full gloss even if applied immediately after mixing.
CRAYAMID 230 X 60 has a fast initial cure rate which is normally in the range of 6-8 hours at room temperature.
Cure of epoxy : CRAYAMID 230 X 60 systems can be accelerated by a range of catalysts, and in particular
Tris(dimethylaminomethyl) phenol types 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.
Solvents has a considerable effect on pot life. Alcohols tend to reduce pot life whereas esters and ketones tend 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.
CRAYAMID 230 X 60 is approved as an epoxy curing agent for coatings on metallic, paper and paperboard substrates provided it is
used with other approved materials and in keeping with good manufacturing practice.
The applicable Food, Drug and Cosmetic Act paragraphs are 121.2514 and 121.2526.

CRAYAMID® 230X-60

PRODUCT SAFETY

Please refer to the corresponding Safety Data Sheet.

STORAGE AND HANDLING

CRAYAMID® 230X-60 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.
Shelf Life (Months): 12

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