OATING RESINS

TECHNICAL DATA CRAYAMID 280X

SALES SPECIFICATION

Non-volatile content, % ISO 3251 (105°C / 1gm / 3 hrs)	73 - 77
Viscosity in CPS at 25°C (Brookfield Viscometer)	2000 - 6000
Colour, Gardner scale (ISO 4630)	≤ 11
Amine value, mg KOH/g (Perchloric Method)	320 - 355

OTHER PROPERTIES

Volatile	Xylene
Flash point, °C (ISO 3679)	24
Density at 20°C (ISO 2811)	0.97
Typical active hydrogen equivalent weight	140

Note: Amine value and Active hydrogen equivalent weight are relative to solid resin

PRODUCT INFORMATION:

CRAYAMID 280X - 75 is an epoxy – polyamide adduct in which the polyamide resin is reacted with a part-portion of the epoxy resin supplied at 75% solids. This gives the product several advantages over standard polyamides;

- No induction period is required
- Excellent compatibility with solid epoxy resins
- Fast cure rate
- Improved sensitivity to moisture

RECOMMENDATIONS FOR USE:

The selection of a particular grade of epoxy will depend upon the end use of the product. **CRAYAMID 280X - 75** is recommended to use with epoxy resins having an epoxide equivalent in excess of 425. Epoxy resins having lower molecular weight, compatibility is only achieved after prolonged induction period.

While the mixing ratio using **CRAYAMID** polyamides is not critical, optimum performance of the coating is achieved by stoichiometric mixing of the epoxy resin and **CRAYAMID280X - 75.** The mix ratio is calculated on the basis of one Active Hydrogen Equivalent weight of the polyamide resin, will react with each epoxy group in the base resin. The AHEW of the polyamide resin **CRAYAMID 280X - 75** is typically 140 on solid resin. Considering that each epoxy reacts with one active hydrogen the mix ratio of **CRAYAMID 280X - 75** and an epoxy resin with epoxide equivalent approx. 500 (1) is calculated as follows;

Resin	Mass of solid Resin	Mass of Resin Solution
CRAYAMID 280X-75	140g	187g
75% Epoxy resin (1)	500g	667g

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. In a similar manner the following ratios can be calculated again on solid resin.

Epoxide Equivalent	**CRAYAMID 280X - 75 :** epoxy resin
850 - 1050 (2)	15: 85
1550 - 2000 (3)	10: 90

LOW TEMPERATURE CURE APPLICATION:

CRAYAMID 280X - 75 has improved compatibility and low sensitivity to moisture. These combined advantages significantly reduce the possibility of film defects forming under low temperatures curing conditions.

CURE RATE:

Films applied at room temperatures develop full gloss even it applied immediately after mixing. **CRAYAMID 280X - 75** has a fast initial cure rate, which is normally in the range of 6-8-hrs.at room temperature. Cure of epoxy: polyamide can be accelerated by the addition of catalysts and in particularly 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.

POTLIFE:

Solvents will have a considerable effect on pot life e.g. alcohols tend to reduce it's pot life where as esters and ketenes tend to extend it. Since ketenes and esters form complexes with amino polyamides on storage, these solvents should only be incorporated into the epoxy resin component.

TOXICITY:

CRAYAMID280X – 75% is approved as an epoxy-curing agent for coatings on metallic, papers, and paperboard substrates provided it is used with other approved materials and in keeping with good manufacturing practice.

NOTES:

1. Epikote 1001 - Shell Chemical
2. Epikote 1004 - Shell Chemical
3. STET - Shell Chemical

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