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TECHNICAL DATA SHEET 198

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Poly-(4-vinylphenol) and **Poly-(4-vinylphenol) brominated**

TYPICAL PROPERTIES:

Appearance		Poly-(4-vinylphenol) white-orange powder	Poly-(4-vinylphenol) brominated pale-orange powder	Poly-(4-vinylphenol)
Weight-average MV	N	1,500-7,000	3,000-14,000	СНСН,
OH-Equivalent		about 120	224-246	
Melting Point		160-200°C	190-220°C	
Decomposition				
Temperature:	10%	320-340°C	320°C	
	50%	360°C	340°C	
	Residue	10-30%	20-40%	Poly (1 vinulabanal) brominated
Specific Gravity		1.2g / cc	1.8-2.0g / cc	Poly-(4-vinyipitetioi) brommated
Water Content		2-3%	1%	CHCH
Monomer Content		up to 1%	up to 1%	
Oligomer		up to 2%	up to 2%	Br _{1.5}
Bromine			47-52%	
Solubility:	Soluble in	polar organics	polar organics	OH n
	Insoluble in	hydrocarbons	hydrocarbons	

Poly-4(4-vinylphenol) is thermally stable at 300°C. This soluble reactive polymer has excellent dimensional stability and chemical resistance. It finds applications for printed circuits, electric insulators, and support polymers for peptide synthesis and antibody binding. The polymer undergoes typical aromatic chemical reactions such as halogenation, sulfonation, nitration, diazocoupling, quarternization, Friedel-Crafts and Mannich reactions. The brominated analog containing 50% bromine is also available as a flame retardant.

Epoxy cured Poly-4(4-vinylphenol) shows improved properties over conventional epoxies and offers material suitable for high grade copper clad laminates. The copper clad laminate has outstanding thermal stability, enough to withstand solder float for 3 minutes at 350°C and retains 70% flexural strength at 150°C. Peel strengths are excellent (12lb/in at room temperature, 6lb/in at 200°C), and they are virtually not lowered after being solder floated or immersed in various chemicals.

High glass transition temperature, (170-180°C), superior dimensional stability, low z-coefficient of thermal expansion (200 x 10-6 in/in°C at 200°C) and low water absorption are principal properties. Poly-4(4vinylphenol) has good compatibility with common synthetic resins such as phenolic, melamine, polyester, epoxy, urethane, alkyd, acrylate, vinyl acetate, and polyvinyl alcohol resins. Toxicological investigations with rats, mice, and guinea pigs on Poly-4(4-vinylphenol) and Poly-4(4-vinylphenol) brominated exhibited no symptoms of acute and subacute toxicity or skin irritation.

ORDERING INFORMATION:

Cat. #	Description	Size
06527	Poly-4(4-vinylphenol)	10g
		50g
09762	Poly-4(4-vinylphenol) brominated	50g

REFERENCES:

- 1. Packham, D.I., J. Chem. Soc., 2617 (1964).
- 2. Blasius, E., et al., Die Agnew. Makromol., Chem., 12, 167 (1970).
- 3. Fridkin, M., et al., JACS, 90, 2953 (1968).
- 4. Williams, R.E., J. Polymer Sci., A-1, 10, 2123 (1972).

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