

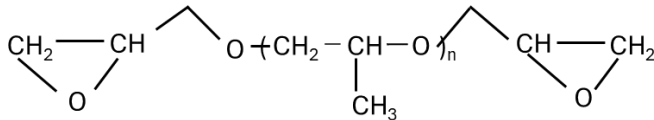
Epoxy Resin Modifier

GLYCI-ALE PP-300P

Product Features

GLYCI-ALE PP-300P can be cured in combination with bisphenol A epoxy resins to produce flexible cured resins.

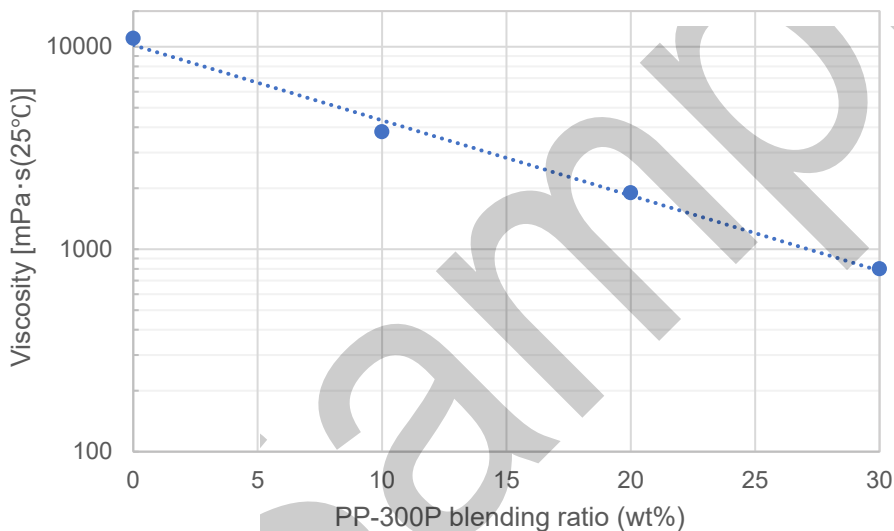
•Chemical Structure Formula



Performance

Viscosity of blends with general-purpose bisphenol A epoxy resin.

When PP-300P is blended with general-purpose bisphenol A epoxy resin (*1), viscosity decreases, and workability such as application, adhesion, and injection improves,



*1 Mitsubishi Chemical Corporation, jER 828 (Bisphenol A diglycidyl ether)

*2 Type B viscosity measured value (25°C)

Cured resin properties of blends with general-purpose bisphenol A epoxy resins

The flexural modulus of the cured resin blended with PP-300P is lower than that of the resin cured with general-purpose bisphenol A epoxy resin alone. In addition, tensile fracture elongation increases.

However, the bending strength and tensile breaking strength decrease as the blended amount increases, and the glass transition temperature also decreases.

Formulation No.		1	2	3	4	5	6
Formulation	General-purpose bisphenol A epoxy resin[wt%]*1	100	80	60	100	80	60
	GLYCI-ALE PP-300P [wt%]	0	20	40	0	20	40
	Triethylenetetramine [wt%]	12.8	11.9	11.0	-	-	-
	Methylhexahydrophthalic anhydride[wt%]*2	-	-	-	88.4	82.1	75.8
	2-Methylimidazole [wt%] *2	-	-	-	0.5	0.5	0.5
Curing Resin Physical properties	Flexural modulus [MPa]	2,360	2,010	1,470	2,650	2,440	2,260
	Bending strength [MPa]	106	91	79	122	114	99
	Glass transition temperature[°C]	126	111	95	153	133	112
	Tensile breaking strength[MPa]	50	47	40	-102	-	-
	Tensile fracture elongation[%]	1.0	7.5	52.5	-	-	-

*1 jER 828 (Bisphenol A diglycidyl ether) manufactured by Mitsubishi Chemical Corporation

*2 Blended as a curing accelerator

●Applications

Flexibility-imparting agent for epoxy resins (paints, adhesives, molding materials)

●Application Methods

The amount of PP-300P to be used must be determined based on the desired flexibility, but is typically 5-30% by weight of the general-purpose epoxy resin.

For room-temperature curing types, triethylenetetramine or polyamidoamine can be used as a curing agent, while for heat-curing types, acid anhydrides can be used.

Use an equivalent amount of curing agent to the epoxy resin composition.

For room-temperature curing types, cure at room temperature for 1-3 days; for heat-curing types, cure at 100-150°C for 2-5 hours. The amount of curing agent and curing conditions must be optimized for the actual application.

~Usage Precautions~

If the amount of curing agent is too small or the curing temperature is too low, poor curing may occur and the desired physical properties may not be achieved.

Curing conditions should be set appropriately depending on the epoxy resin, curing agent, and usage method. Adding excess PP-300P will improve flexibility but will reduce flexural modulus and tensile breaking strength. Select the optimal amount to use depending on the application. Avoid direct sunlight and store in a cool, dark place indoors.

●Typical Properties (These data aren't specifications.)

Appearance	Pale yellow liquid
Epoxy equivalent (g/eq)	Approx. 296 g/eq
Viscosity (mPa-s) (25°C)	Approx. 44
Hydrolysis Chlorine Content (mass%)	Approx. 0.07
Total chlorine content (combustion ion chromatography)	Approx. 0.3% by mass

●Packaging

Net 18kg can