

## Product Description

**EzCiclo RF702** is a solid recycled active ester resin derived from waste plastics, featuring a high recycled content. It can be cured with commercial epoxy resins, and the resulting products can be degraded using the CleaVER system. Thanks to its good organosolubility and dielectric properties, EzCiclo RF702 is well-suited for Copper Clad Laminate (CCL) applications. It enables clients to develop low-carbon, recyclable composite materials.

## Typical Properties of Resin

Appearance	Light yellow crystal
Reaction Equivalent Weight (g/eq)	150~160
Number-average Molecular Weight (Mn)	1600~1800
Recycled Content (%)	≥80
Softening point (°C)	60~85
Shelf Life (months)	12 (below 30 °C)
Solvent residues (%)	<1

## Solubility Testing

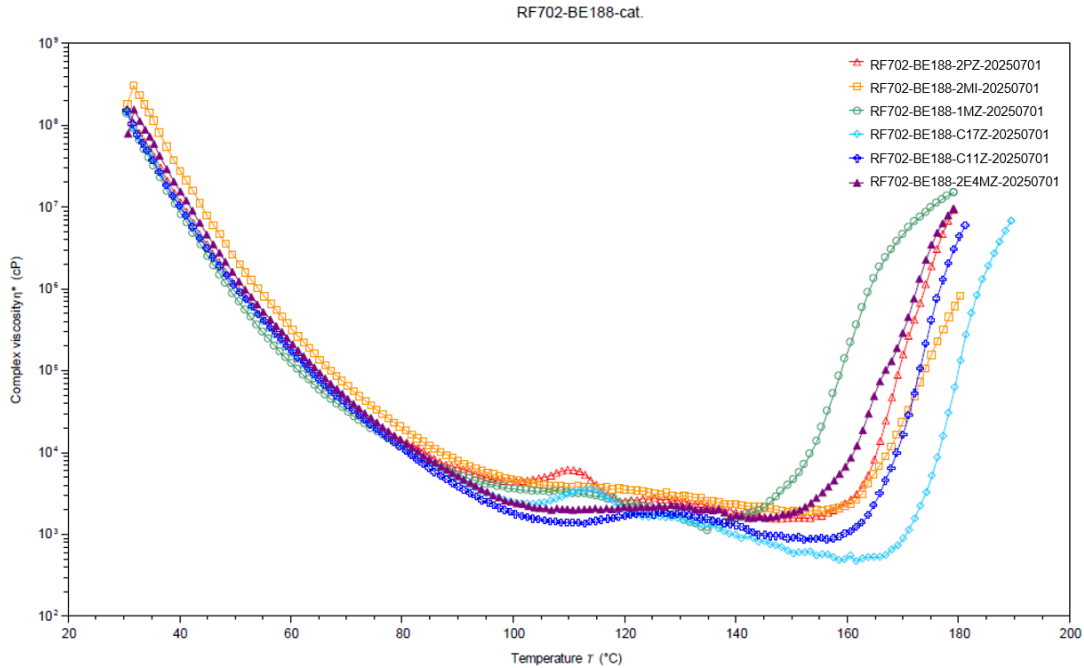
RF702 was mixed with various solvents to evaluate its solubility. The samples were heating to 60 °C during testing.

Resin	Anone	Xylenes	Toluene	MEK
RF702	soluble	soluble	soluble	soluble

## Catalytic Activity of Various Catalysts

RF702 was cured with NPEL-128 using different catalysts as accelerators. The curing behaviors was evaluated through rheological analysis. Duo to its excellent latent reactivity, RF702 is highly suitable for prepreg applications.

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Catalyst	The viscosity before rapid increase (cP)	Temperature (°C)*
1MZ	1305.19	137.02
2MI	1912.68	155.46
C17Z	467.91	161.62
C11Z	846.50	152.36
2PZ	1569.29	153.39
2E4MZ	1571.12	142.20

\*The temperature before the rapid rise in viscosity.

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## Heat Resistance of Thermosets

RF702 was cured with commercial epoxy resins using 2-phenyl Imidazole (2PZ) as an accelerator. The glass transition temperature ( $T_g$ ) of thermosets was measured by a DSC instrument and recorded during the second run analysis.

Epoxy resin	Glass transition temperature, $T_g$ (°C)*
NPEL-128	124.60
NPEF-170	110.29
NPPN-638S	140.74
Tetraglycidyl 4,4'- diaminodiphenylmethane (TGDDM)	180.92
CNE195	174.90
NPES-904	98.72
DNE260	155.95

\*The analysis was carried out from 0 to 250 °C at a rate of 10 °C/min.

## Dielectric Properties

RF702/NPEL-128 thermoset was prepared for dielectric testing. Compared with PF8110/NPEL-128 thermoset, the dielectric constant (Dk) and loss factor (Df) of RF702-derived thermoset are both lower. Therefore, RF702 is more suitable for low dielectric applications than phenolic resin.

Sample	Dielectric constant (Dk)*	Loss factor (Df)*
RF702/NPEL-128	2.86	0.030
PF8110/NPEL-128	3.35	0.048

\*Measured at 10 GHz.

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## Notice of Use

- RF702 can be cured with any commercial epoxy resin, the recommended usage amount is equivalent to the epoxy resin. Adding more will not result in a faster reaction, but in incomplete curing with limited performance, that cannot be corrected in any way.
- The recommended usage amount of an accelerator is 0.4~1 wt% of epoxy resins.
- The suggested curing temperature is above 140 °C.

## Storage

Please store in a dry place at a temperature below the softening point.

## Package

Standard packing is 20 Kg steel drum.

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