

CURAPHEN 22-506 FROM BITREZ LTD

Georgia-Pacific Chemicals is the North American distributor of this resin for powder coatings. A phenolic hydroxyl terminated epoxy curing agent, it was developed for use in conjunction with solid epoxy resins in the formulation of decorative and industrial powder coating systems. Curaphen 22-506 is characterized by high reactivity and contains approximately 3.5% accelerator. It can be modified with conventional additives and is fully compatible with other phenolic hardeners within this range, enabling the formulation of specific custom process requirements. Properties will be dependent on the selected epoxy component and will be enhanced by incorporation of higher-functionality epoxy resins. Applications include powder coating systems for fittings, pipes, concrete re-enforcing steel and various chemically-resistant coatings.

Physical Property	Method ¹	Minimum	Maximum
*Appearance (to defined standard)	BSMT A 1001-001	ETS ²	--
*Color (Gardner) ³	BSMT A 1002-001	--	2
*Softening Point, °C	BSMT A 1015-002	80	90
Density, ³ Kg/liter	BSMT A 1010-002	1.16	1.18
Hydroxyl Equivalent Weight (HEW), G/Eq	BSMT A 1035-001	235	265

Based on data received from Bitrez Ltd.

*Properties tested on a batch basis and reported in the certificate of analysis. All other properties are typical of batch manufacture and are for technical information only. They do not constitute a specification.

1 BSMT – Bitrez Standard Method of Test

2 ETS – Equal to Standard

3 Evaluated as 40% solution (Wt/Wt in MEK)



Resins for Powder Coatings



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Resins for Powder Coatings

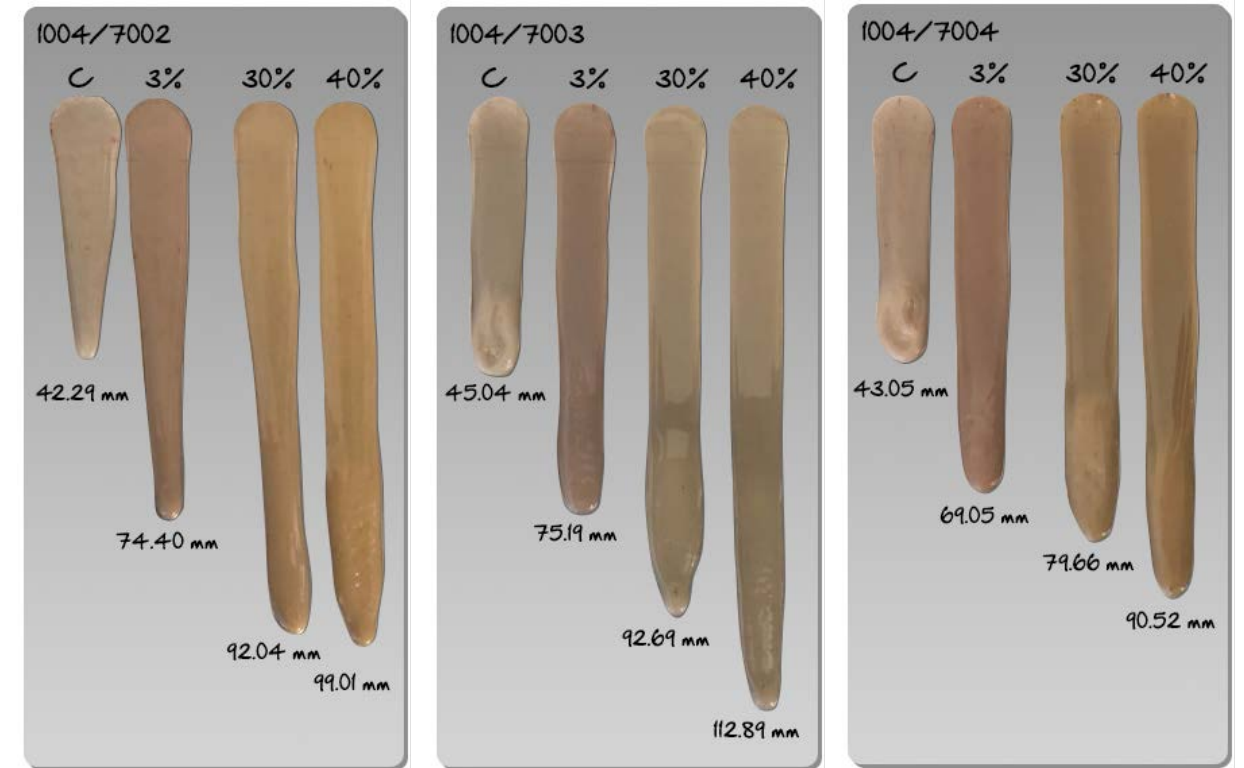
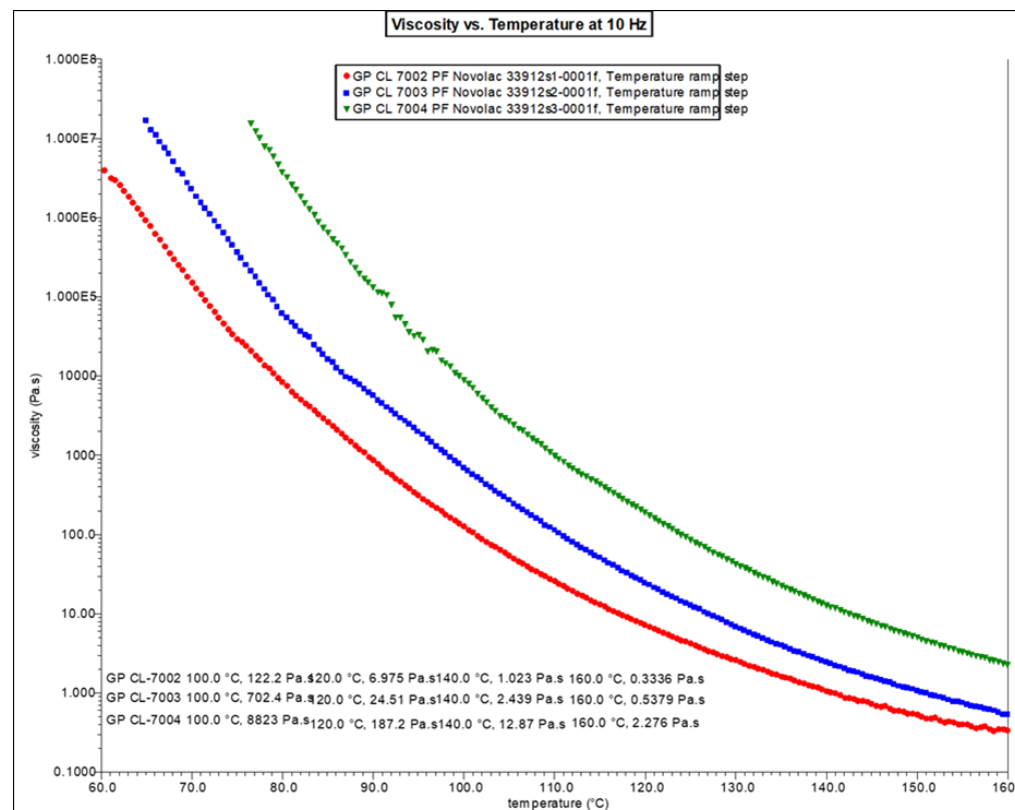
Georgia-Pacific Chemicals (GPC) offers two types of products for powder coatings. GP® CL-7002, CL-7003 and CL-7004 phenolic resins are thermoplastic novolacs whose low phenol contents, advantageous softening points, and melt viscosities are conducive for use in powder coatings. GPC also offers Curaphen 22-506 from European manufacturer Bitrez which can be used as an effective crosslinker.

GP® CL-7002, CL-7003 and CL-7004 RESINS

The low monomer GP CL novolacs have shown to be excellent flow promoters and rheology modifiers. Studies conducted by the University of Southern Mississippi demonstrated that a hybrid epoxy/polyester coating incorporating 3% CL resin exhibited increased flow. The relatively high Tg of the resins also result in films with increased hardness.

TYPICAL PROPERTIES	GP CL-7002	GP CL-7003	GP CL-7004
Form	Pastilles	Pale yellow flake	Pale yellow flake
Viscosity ¹ @ 140°C, Pa.s	Approx. 1.0	Approx. 2.5	Approx. 9.0
Softening Point ² , °C	98 – 102	106 – 110	117 – 123
Free Phenol. %	0.2 Max.	0.2 Max.	0.2 Max.
Glass Transition Temperature ³ (Tg), °C	51	55	72
OH Equivalent	104 – 108	104 – 108	104 – 108
Shelf Life	1 year	1 year	1 year

1. Sample heated 3°/min at a shear rate of 10 Hz 2. Mettler Softening Point, 2°C/min 3. DSC, inflection point, heated 2°C/min



1004-Type Epoxy-Based Coating/
Phenolic Gel Pill Flow

Incline plate flow test using 1004-type epoxy-based coating as Control with loadings of 3%, 30% and 40% of GP CL resins. Conducted at 375°F for 15 minutes

GP CL Resins' Impact on Gel Pill Flow With a 1004-Type Epoxy-Based Coating						
	Flow (mm)	Increase with CL-7002	Flow (mm)	Increase with CL-7003	Flow (mm)	Increase with CL-7004
Control	42.3		45.0		43.1	
3%	74.4	175.9%	75.2	166.9%	69.1	160.4%
30%	92.0	217.6%	92.7	205.8%	79.7	185.0%
40%	99.0	234.1%	112.9	228.4%	90.5	210.3%

STORAGE AND HANDLING

It is recommended that these products be stored in closed containers in cool, dry, well-ventilated areas. Sunlight and precipitation should be avoided. The proper personal protective equipment should be worn whenever GP CL-7002, CL-7003 or CL-7004 resins are used or handled. For safety and health information, please refer to the Safety Data Sheets available from Georgia-Pacific Chemicals.