

Product Data



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R0228

RESILIENT ISOPHTHALIC CASTING RESIN

R0228 Resilient Isophthalic Casting Resin was developed specifically for use with 2,4 Pentanedione Peroxides to offer a faster curing and demolding system for densified casting manufacturers. The use of this special catalyst with the R0228 resin will give the molder castings that will approximate the cure of the BPO-cured resin systems without the amber color usually associated with the BPO-cured systems. White and light pastel-colored castings of R0228 using 2,4 Pentanedione Peroxide do have a slightly green color due to the decomposition products of the catalyst. This green cast is not readily evident in darker solid colors or dark granite castings.

We have found two particular peroxide catalysts which, when used with R0228 resin, will give gel and cure times significantly faster than other regular MEK Peroxides that we have tested, yet will still exhibit the good color usually seen in these MEKP-cured systems. These products, Witco Corporation's Quickset Extra and AKZO Chemicals TRIGONOX 63 offer gel times similar to those obtained with 2,4 Pentanedione Peroxides. The demold times and hardness development are a little slower than those seen with the PDO catalysts but are significantly faster than those obtained with standard MEK Peroxides. More importantly, the colors of the filled castings are more like those we see with the standard MEK peroxides avoiding the green color mentioned in the previous paragraph.

R0228 is supplied at a medium-low viscosity to facilitate good filler wet-out as well as promote more rapid air release. R0228 is UV Light Stabilized to further enhance the color stability of the densified castings made from this resin.

TYPICAL LIQUID PROPERTIES

Color	Blue-Violet
Weight per Gallon	9.23 lbs.
Specific Gravity	1.11
Viscosity, 77°F.	750 cps
Shelf Life, 77°F.	3 months minimum

TYPICAL CURING PROPERTIES

Neat Resin @ 77°F.

	1% 2,4 Pentanedione <u>Peroxide (1)</u>	1% Quickset <u>Extra (2)</u>	1% Trigonox <u>63 (3)</u>
Gel Time	15'	16'	22'
Gel to Peak	8'	12'	10'
Peak, Exotherm, 100 gram mass	320°F	320°F	350°F

(1) Lupersol 224 and Superox 46-731 are 2,4 Pentanedione Peroxides supplied by Atochem and Reichhold respectively.

(2) Quickset Extra is available from: Witco Corporation
Polyester Additives Group
Marshall, TX 75761
(903)938-5141

(3) Trigonox 63 is available from AKZO Chemicals.

APPLICATION

The Table that follows illustrates some suggested formulas using various fillers along with R-0228 resin and the catalysts we have recommended. The gel and cure times seen with the RJ Marshall fillers are very similar to those you might obtain with the same fillers in a BPO-Cured resin system.

The suggested starting formulas that follow have been tested in our laboratories and all exhibit the following outstanding features:

- 1) Excellent air release without vacuum processing.
- 2) Outstanding stain resistance - Low ANSI stain ratings.
- 3) Rapid cure and fast Barcol hardness development - no post-cure required.
- 4) Excellent initial clarity and color retention.

Suggested Filled Casting Formulas:

	Formula <u>A</u>	Formula <u>B</u>	Formula <u>C</u>	Formula <u>D</u>
R0228 Resin	100*	100*	100*	100*
DGE-210(a)	200			
DF-40(a)		185	150	150
HWE-2303 White Paste		3.0	3.0	3.0
2,4 Pentanedione Peroxide	1.0	1.0	---	---
Quickset Extra			1.0	---
Trigonox 63				1.5
Gel Time, 77°F	20'	20'	25'	25'
Demold Time	40'	40'	60'	50'
Barcol Hardness				
2 Hr.	50	45	0-10	0-5
4 Hr.	50	50	30-40	10-20
16 Hr.	55	50-52	45	30-40
24 Hr.	55	50-55	45-50	45-50

* All formula values are parts by weight
(a) R. J. Marshall Co.; Southfield, MI

We have also prepared and tested some cast bowls using the R0228 Resin/ATH filler and both the 2,4 Pentanedione Peroxide and Quickset Extra catalysts. The formulas tested and test results are as follows:

	<u>A</u>	<u>B</u>
R0228 Resin	35 pounds	35 pounds
DF-64 ATH (b)	65 pounds	65 pounds
Superox 46-731 (2,4 PDO Peroxide)	1%	----
Quickset Extra (MEK Peroxide)	----	1%
ANSI Thermal Cycling	>1000 cycles	>1000 cycles
Stain Rating	29	32
Barcol Hardness	57-58	56-57

We did note some initial blushing in these bowls but it did not get progressively worse and appeared to be less conspicuous at the conclusion of the tests than it was at the beginning. We still feel, however, that a gel-coated surface should be used in bowl areas of densified tops in order to obtain maximum life of the cast product.

SAFETY CONSIDERATIONS

HK Series Isophthalic Casting Systems are based on a resin, which contains styrene monomer, which is a flammable liquid. Keep away from sparks, heat and open flame (including pilot lights). Electrical equipment should be vapor-proof and protected from breakage.

Styrene vapors are heavier than air and will tend to concentrate in the low areas of molds and in pockets immediately above the floor area. To keep vapors within a safe limit in all areas, adequate ventilation or suction fans should be used that will remove these styrene monomer vapors.

All equipment must be grounded - including spray guns and molds.

Both the polyester resin and the catalyst may cause burns to eyes and skin. Avoid contact with the eyes! Avoid breathing vapors! Gel coat applicators should wear a NIOSH approved respirator effective for vapors, spray mist and dust. In case of accidental contact, remove contaminated clothing and wash affected skin areas with soap and copious quantities of water. Contact a physician if persistent skin irritation occurs. For eyes, immediately flush with plenty of water for at least 15 minutes; call a physician immediately. Wash contaminated clothing before reusing.