

# Product Data



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## R0229 RESILIENT, ACRYLIC MODIFIED ISOPHTHALIC CASTING RESIN

R0229 Resilient, Acrylic Modified 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 R0229 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 R0229 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 that a particular MEKP product, when used with R0229 resin, will give casting gel and cure times significantly faster than other regular MEKP catalysts we have evaluated, yet will still exhibit the good color usually seen in MEKP-cured resin systems. This product, Witco's Quickset Extra, exhibits gel times similar to those obtained with 2,4 Pentanedione Peroxide but the demold time and hardness development are somewhat slower. Particulars of several test castings that we have made are shown under the Applications section of this bulletin.

R0229 is supplied at a medium-low viscosity to facilitate good filler wet-out as well as promote more rapid air release. R0229 is UV Light-Stabilized to further enhance the color stability of the densified castings made from this resin. R0229 has been further modified with a blend of Styrene and acrylic monomers to improve durability of the finished part.

### 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

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## TYPICAL CURING PROPERTIES

### Neat Resin @ 77°F.

	<u>1% 2,4 Pentanedione Peroxide (1)</u>	<u>1% Quickset Extra (2)</u>
Gel Time	20'	23'
Gel to Peak	10'	14'
Peak, Exotherm, 100 gram mass	320°F	320°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

## APPLICATION

The Table that follows illustrates some suggested formulas using various fillers along with R0229 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 gel and cure times using this resin and the Durastone filler are significantly faster than those we have obtained with either the BPO-Cured or regular MEKP-cured system.

We have found, however, that the benefits obtained from the Quickset Extra catalyst are not seen in castings of the R0229 and Durastone filler. Our tests indicate that the 2,4 Pentanedione Peroxide must be used to get the best gel and cure properties with this Arizona Cultured Stone product.

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:**

	<u>Formula A</u>	Formula B	Formula C	Formula D
R0229 Resin	100*	100*	100*	100*
DURASTONE Granite(a)	100			
DGE-210(b)		200		
DF-40(b)			185	100
HWE-2303 White Paste			3.0	3.0
2,4 Pentanedione Peroxide	1.0	1.0	1.0	---
Quickset Extra			---	1.0
Gel Time, 77°F	30'	25'	25'	25'
Demold Time	60'	45'	45'	60'
Barcol Hardness				
2 Hr.	30	50	45	0-10
4 Hr.	35	50	50	30-40
16 Hr.	40	55	50-52	45
24 Hr.	40-45	55	50-55	45-50

\* All formula values are parts by weight  
(a) Arizona Cultured Stone Products; Tucson, AZ  
(b) R. J. Marshall Co.; Southfield, MI

We have also prepared and tested some cast bowls using the R0229 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>
R0229 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.