

CR-630™ Monomer Product Bulletin



Last Revised April 20, 2004

Introduction:

CR-630 monomer in combination with Next Generation Transitions® photochromics produce lenses with superior photochromic performance.

Health and Safety:

Always read the CR 630 Monomer MSDS, (product ID #0777) and product label. Follow all instructions when handling this product.

Storage and Handling:

To safeguard the quality of **CR 630** monomer, keep the product stored in its original, unopened container out of direct sunlight.

Since the material is mildly hygroscopic, containers should be kept closed until time of use. Opening prior to use can cause the drums to rust.

Shelf Life:

CR 630 monomer should be used within 9 months from the date of production at PPG.

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Processing:

The casting of **CR-630** monomer can be virtually identical to the casting of CR-607™ monomer with the exception of the initiator used. **CR-607** is used with 100% Diisopropyl Peroxydicarbonate (IPP), while **CR-630** has been specially formulated to be used with an IPP pre-mix in CR-39™ reg II Lv Purified HpH Monomer.

CR-630 monomer, plus the specified amount of IPP pre-mix (see initiator levels below), results in a monomer formulation that displays similar qualities to **CR-607** monomer. Since, by adding the IPP premix, **CR-630** has been "converted" into initiated **CR-607** monomer, the notation "**CR-607**" will be used for the rest of this document in place of **CR-630** + IPP premix.

The processing of **CR-607** should be similar to the processing of CR-39 monomer. **CR-607** monomer contains a UV absorber. **DO NOT** add additional UV absorbers as they may have a negative impact on photochromic performance characteristics

Initiator Levels:

Requirements for initiator levels will vary according to processing. However, the following levels can be used as guidelines for a starting point. Degree of cure is critical to the performance of the photochromic lenses.

Begin by using a formulation with 2.4% by weight of the IPP. Transitions® qualification procedures require lenses to be imbibed at Transitions® in order to validate the lens and the lens casting process. The degree of cure needs to achieve a specific lens UV absorbance in order to be qualified for Transitions®.

In the laboratory using the cure cycle below, an initiator level of 2.4% by weight of IPP resulted in polymer with an acceptable degree of cure. A limited number of lenses were cast using these conditions, and there were no signs of striation or pre-release. However, please note that these processing parameters have not been optimized, and only represent guidelines for a starting point.

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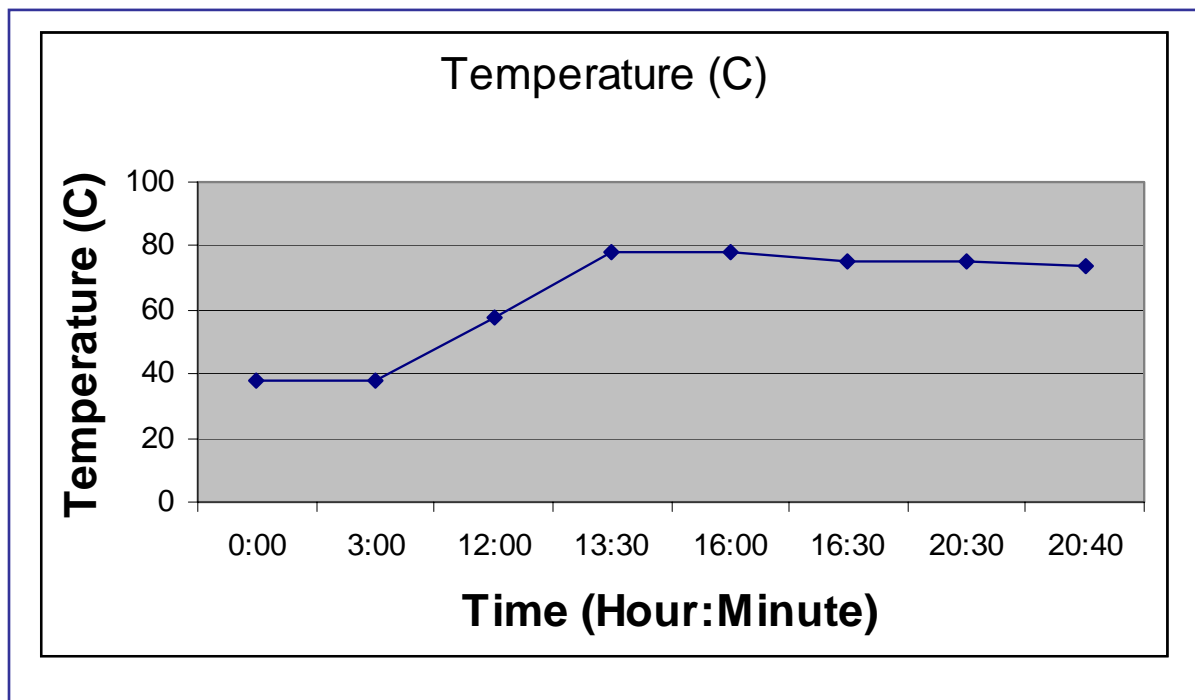
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Cure Cycle:

Step	Hour:Minutes	Temperature (C.)
1	0:00	38
2	3:00	38
3	12:00	58
4	13:30	78
5	16:00	78
6	16:30	75
7	20:30	75
8	20:40	74
9	Demold	74



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Technical Note

Monomer Haze

CR-607 monomer, when stored for extended periods of time at low temperatures may develop a slight haze. For example, tests have shown that a 55 gallon drum stored at 2° C will form a slight haze in about 8 weeks. Haze will continue to accumulate after that. Analytical testing has demonstrated no product degradation due to storage of the monomer under low temperature conditions. Lenses cast from both the hazy and non-hazy monomer and have given similar results when processed by Transitions. Storing a 55 gallon drum at 23° C overnight will allow the haze to completely disappear. This maybe desirable to avoid potential filtering problems. Although recommended, agitation is not required of a 55 gallon drum of **CR-607** prior to use.

Typical Monomer Properties for CR 630:

Viscosity @ 25 ⁰ C	32 cPs
Density g/ml	1.12
Refractive Index n _D ²⁰ at 20 ⁰ C	1.4551
Tranmittance %	92
Yellowness Index	3.5
IPP Level, %weight	2.4
Gel-Time, hours @ 40C	~ 4.75 hours
Gel-Time, hours @ 22C	~ 5.0 days

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Typical Polymer Properties for CR 607:

**** CR630 initiated with 10% IPP pre-mix**

Refractive Index n_D^{20} at 20°C	1.497
Abbe	56
Density, g/ml	1.27
Polymerization Shrinkage, %	11.4
Barcol 935	72 - 73
Heat Distortion Temperature, °C @ 10mils deflection	41
Total Deflection at 130°C in mils	37
Transmittance, %	93
b*	0.5
Bayer Abrasion, x uncoated CR-39	1.14

Samples and Services:

For additional information, please contact a PPG customer service representative at:

- Phone: **1-800-323-2487**
- Fax: **724-325-5042**

or: [send E-Mail](#)

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