Draft only

KROLOR® RED KR-981-D FOR PLASTICS

KROLOR® Red KR-981-D is designed for high temperature plastics markets, currently dominated by high cost cadmium reds. Heat stability in both masstone and tint is excellent.*

The intensity of KR-981-D provides flexibility for approximately all shades of cadmium red (except Cadmium Dark Red) at substantially lower cost when used alone or in combination with KROLOR® Orange KO-906-D (See Table 1). The superior intensity of KR-981-D is of particular value in tints, since this is a well known limitation of cadmium reds.

Besides value, brightness of shade, and heat stability, KR-981-D:

- Has excellent dispersibility.
- Is low dusting.**
- Should have superior lightfastness, especially in tints where cadmium pigments are deficient.

The brightness and heat stability of KR-981-D, in both masstone and tint, are superior to our original KROLOR® Red KR-980-D. The exhibits illustrate both of these points, especially in tint. However, KR-980-D can be used for its still lower cost in situtations where its deficiences present no problem, eg. most olefin applications.

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*Demonstrated in the Sales Aid exhibits available in each District Office or on loan from Chestnut Run for promotional use.

**Current limits: Chromium - 52 micrograms (as Cr)/cubic meter air on a 8 hr. time weighted average (TWA). Lead - 50 micrograms (as Pb)/ Cubic meter of air, 8 hr. time weighted average.

KROLOR® RED KR-981-D EXHIBIT PREPARATION

Masstone and tint heat stability of KROLOR® Red KR-980-D, KR-981-D and a cadmium medium dark red toner are shown in ABS, a particularly demanding system (Exhibits 1 & 2). Pigment concentrates of KROLOR® and cadmium pigments were prepared at 20% loadings in Cylcolac TD-1000 resin on a 2-roll mill and reduced to final pigment levels in a Banbury in the same resin using a three minute cycle. These were molded at 450°, 500° and 550°F using a molding cycle which subjects the plastic to a five minute dwell time at each temperature.

Color and cost comparisons between a cadmium medium dark red toner and a matching blend of KR-981-D/KO-906-D, and cadmium light red toner and KO-906-D are shown in ABS (Exhibits 3 and 4, and Table I). These chips were also prepared from 20% 2-roll mill color concentrates let-down to final pigment levels in a Banbury; they were molded at 450°F using the same procedure described for heat stability tests. All intermediate shades of cadmium red between the blue shade Cadmium Medium Dark Red and the yellow shade Cadmium Light Red can be approximated with blends of KR-981-D/KO-906-D.

FRH/CGQ/ilc
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TABLE I

COLOR AND COST COMPARISONS IN ABS

Masstone	Color Loading, phr[1]	Pigment Cost[2]	Color[4]
C. P. Cadmium Medium Dark Red	1.0	11.90	Control
KR-981-D/KO-906-D - 66/34	1.5	9.04	Intense, s blue
KR-981/KO-906-D - 66/34[3]	1.5	9.04	S dark, s blue
C. P. Cadmium Light Red	1.0	7.21	Control
KO-906-D	1.5	4.05	Intense
Tint (R-101 @ 1.0 phr)			
C. P. Cadmium Medium Dark Red	0.1	1.19	Control
KR-981-D/KO-906-D - 15/85	0.2	.69	Intense, yellow
KR-981-D/KO-906-D - 15/85[3]	0.2	.69	S int., vs yellow
C. P. Cadmium Light Red	0.1	.72	Control
KO-906-D	0.2	.54	Blue, s int.

1. Parts per hundred resin (loading adjusted to give equal masstone opacity and equal tint strength.
2. Color only - based on $11.90/lb. for cad. med. dk. red, $7.21/lb. for cad. light red, $7.75/lb. for KR-981-D and $2.70/lb. for KO-906-D.
3. Plus trace amount of black.
4. Read under Macbeth lamp, north daylight. Since these matches are metameric, they will differ under a variety of light sources.

CGQ/ilc
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KROLOR® RED KR-981-D OFFERS YOU:

- Value
- Intense Shade
- Heat Stability
- Excellent Dispersibility
- Low Dusting Properties
- Lightfastness
- Color Matching Opportunities

LET'S TAKE A CLOSER LOOK AT THE COLOR MATCHING AND VALUE OF KR-981-D.

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EXHIBIT 2

MASSTONE HEAT STABILITY
KR-981-D IN ABS

(All Color @ 1 phr)

3

- Heat Stability - KR-981-D is excellent in masstone as well.
- Intensity - The brightness of KR-981-D is still evident in deep shades.
- Value & Still More - KR-981-D also has excellent dispersibility, is low dusting, and has better lightfastness than cadmium pigments.

Cadmium Medium Dark Red	KROLOR® Red KR-981-D	KROLOR® Red KR-980-D
450°F	450°F	450°F
500°F	500°F	500°F
550°F	550°F	550°F

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