

# Technical Bulletin

## Z PIGMENTS

DayGlo Z Pigments, because of their good heat stability and smaller particle size (10-12microns), are recommended for plastics applications where dispersion is important (rotational molding is a good low-shear example that would benefit from a smaller particle size). They also offer good tinctorial strength and bright shades.

### Available Colors:

|      |               |        |                 |
|------|---------------|--------|-----------------|
| Z-11 | Aurora Pink*  | Z-16   | Arc Yellow*     |
| Z-12 | Neon Red*     | Z-17   | Saturn Yellow*  |
| Z-13 | Rocket Red*   | Z-18   | Signal Green*   |
| Z-14 | Fire Orange*  | Z-21   | Corona Magenta* |
| Z-15 | Blaze Orange* | See ZQ | Horizon Blue*   |

### Chemical Nature & Dispersion Properties:

DayGlo Z Pigments are a solid solution of fluorescent dyes in a thermoplastic polyamide resin.

To ensure complete development of the fluorescent color effect, the Z Pigments must be completely melted and evenly distributed throughout the plastic system. The recommended minimum processing temperature is 370°F (190°C).

### Additives:

Certain metal ions and nucleated polymers are known to cause color changes and loss of brightness with fluorescent colorants. Studies have shown that plastic processing additives containing "free" zinc, magnesium, calcium and iron will cause deleterious color effects when used in conjunction with Z Pigments.

If a metal containing additive must be used, it should be thoroughly tested to ensure the color stability of the Z Pigments. Also, refer to Technical Bulletin, "Effects of Metal Ions on Fluorescent Colorants in Plastics".

### Heat Stability:

The heat stability of Z Pigments was tested on a four ounce injection molding machine. The maximum recommended processing temperature of Z Pigments is 575°F (300°C).

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## Physical Properties:

|                                |                           |
|--------------------------------|---------------------------|
| Minimum Processing Temperature | 370°F (190°C)             |
| Heat Stability                 | 575°F (300°C)             |
| Softening Point                | 280°F-310°F (138°C-155°C) |
| Specific Gravity               | 1.14                      |
| Grind                          | 4.0 Min Hegman Gage       |
| Average Particle Size          | 10-12 Microns             |

## Applications:

|               |     |                    |     |
|---------------|-----|--------------------|-----|
| Polyethylene  | +   | PA (Nylon)         | +/- |
| Polypropylene | +   | Polycarbonate      | +/- |
| Polystyrene   | +   | PMMA (Polyacrylic) | +/- |
| ABS           | +/- | Rigid PVC          | +/- |
| Ionomer       | +/- | Urethane           | +/- |

+ Recommended

+/- Recommended, but should be tested in individual resins

## Toxicity:

Toxicity tests have been conducted on Z Pigments with the following results:

|  |                        |
|--|------------------------|
| Acute Oral Toxicity LD <sub>50</sub>   | >15.38 g/kg            |
| Acute Dermal Toxicity LD <sub>50</sub> | >3.00 g/kg             |
| Acute Dust Inhalation LC <sub>50</sub> | Air 4 Hrs. = 2.88 mg/l |
| Eye Irritation                         | Mildly Irritating      |

DayGlo fluorescent pigments are organic compounds which are formulated without heavy metals.

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