Critical Material Qualities and Production

Concentrated ThermoBatch™ Master Batch (yellow, orange, red, vermillion, blue, magenta, turquoise, purple etc.; -10°C to 72°C temperature types)

- Extrusion Resin: Primary resin (97 - 94%)
- Master Batch Loading: Loading range (3 – 6%)
- Density: 0.508g/cm³
- Bulk Density: 520 ± 50g/l
- Specific Gravity: 0.91 ± 0.05
- Pellet size disc-sphere: 2.5mm - 4mm
- Melt flow index: 15-40g / 10 min. (190°C 2.15 Kgf)
- Grade: food contact grade when extruded at 1-10% w/w PP, PE, PS etc.
- Materials: All raw materials will be kept uniform and not changed during lot production
- Lot identification: All lots will be date coded, identified and recorded
- Incoming raw materials: All lot specific incoming raw materials will be qualified on a per-lot basis timely prior to lot production
- Color on-set temperature: 58°F/14°C
- Color saturation temp.: 47°F/8°C
- Color dissipation on-set: 63°F/17°C
- Color clear-out temp.: 72°F/22°C

Storage, Self-Life and Handling

Concentrated ThermoBatch™ Master Batch

- Shelf life: Shelf life is 3 years when stored in dark, dry, cool conditions.
- Pre-dry pellets is typically not required. If drying, use standard materials dryers
- All component materials should be stored and marked separately.
- LCR Hallcrest ThermoBatch™ master batch should be added on a % weight basis along with the stationary yellow PP master batch on a % weight basis of the PP resin utilized.
Extrusion Processing Conditions

ThermoBatch™ Master Batch Processing Conditions

Maximum extrusion temp: 220°C (429°F)
Ideal extrusion temp: 200°C (392°F)
Extrusion zone temp: Line dependent – average 200°C for testing
ThermoBatch™ MB let-down 6.0 – 8.0% depending on part thickness and desired color intensity
Regrind: Avoid regrind – color disruption may occur
Packaging: 20kg reinforced paper bags, sealed plastic inner bag
Screw type: Mixing
Screw RPM Processing dependent
MB mixing controls: Thorough prior to use
Resin type and lot: Polypropylene
Die cleanliness: Clean and polished
Water temperature: N/A
Water purity: N/A
Water filter replacement N/A
Air pressure/cleaning N/A
Part parameters N/A
ID
Wall thickness
Length
Rigidity
Color parameters
Smooth cut
Die cut parameters
Periodic visual inspection: TBD
Chilling for color change LAB grade
Temperature setting
PMS color comparison

Variance acceptance

Color on-set temperature: 58°F/14°C (Test and check with ice water)
Color saturation temp.: 47°F/8°C
Color dissipation on-set: 63°F/17°C
Color clear-out temp.: 72°F/22°C (Test and check with warm water)
Periodic sample retention: Number per time (TBD)