

Sustainability Outline for Global Plastics Summit

Background: What is Plastic Metallizing. Applications. Why metallize.



Historical old-school Metallizing: Not a Model of Sustainability.

- Performed in separate factories often half way around the world. Energy required for shipping plastics to metallizing facilities and then to filling plants.
- Primers, basecoats, and topcoats used were lacquers that contained high %'s of VOC's
- Production lines required not only large footprints but high energy usage.
- High labor and material usage translated to high costs. Often 5-10X molding costs.



**Green
Metallizing**



**Chrome (VI)-
free**



**Cost
Effective**



**Reliable
Process**



**Sustainable
Process**



Sustainability Attributes of SINGULUS DECOLINE II – Inline Production System for Green Metallizing of 3D Parts

- Low labor requirements of DECOLINE II allows for on-shoring of metallizing at competitive costs
- Proximity to molding operations allows for the elimination of solvent borne primers
- 100 % solids topcoat and basecoats (with no VOC's are now available and being used on DECOLINE II machines)
- Elimination of basecoat operations is commonplace on some plastics such as PET, ABS, PC
- Elimination of conventional topcoats is feasible on many projects with DECOLINE II
- Unlike plastic electroplating and silver nitrate metallizing there is NO water consumption
- Lower energy use per part built in by design:
 - Small footprint and related facility energy issues
 - Precise sputtering process for metal deposition
 - Robotic application of organic base and topcoats (when required) for reduced waste
 - Completely in-line process for reduced handling of parts for lower defects and scrap
 - UV curing of base and topcoats (when required)
- Low resin and metal content of metallized decoration as a % of total plastic weight = Recyclability in many applications
- High sustainability and inline automation translates to extremely low decoration costs. Most applications for high volume PP caps cost only 1-2X molding costs.

Solution for Sustainable and Cost Effective Metallized Decorations = SINGULUS DECOLINE II

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