

## Frequently Asked Questions

### GENERAL INFORMATION:

**Q. Why OnColor Complete™ Liquid Color Solutions?**

A. By adding **OnColor Complete™ Liquid Color Solutions** PolyOne now offers a complete portfolio of color and additive solutions. PolyOne can help convertors and OEMs develop the unbiased customized color and additive solution that most effectively optimizes their operations and ability to serve their customers; regardless of whether the best solution for the application requires solid or liquid colorant.

**Q. What are OnColor Complete™ Liquid Color Solutions?**

A. **OnColor Complete Liquid Color Solutions** are an innovative combination of a closed-loop refillable liquid color package, metering technology, and single dispersed pigment colorants that revolutionizes the delivery, management, use, and replenishment of liquid polymer colorants for injection molding, blow molding, and polymer extrusion operations.

OnColor Complete Liquid Color Solutions help convertors and OEM's improve their colorant operational efficiencies, expand their production capabilities, enhance their ability to respond quickly to ever more demanding customer requirements and reduce their environmental impact by providing a complete liquid colorant solution that eliminates many of the drawbacks and hassles common to traditional liquid colorant use -- without additional capital investment.

Installation of the OnColor Complete Liquid Color metering system provides the use of returnable drums for colorant delivery, consumption and replenishment. Empty drums are returned for refilling and reuse, eliminating unusable product, equipment clean up and associated disposal costs; reducing the overall environmental impact of the customer's operation while improving employee safety.

**OnColor Complete™ Liquid Color Solutions** are made up of three components that work together to provide the overall value of the solution.

- **OnColor Complete™ Liquid Color Metering System** – Refers to the hardware and software components of the OnColor Complete Solution
- **OnColor Precision™ Liquid Colorants** – Refers to the single dispersed pigment colorants designed for use with the OnColor Complete Metering System
- **OnColor™ Delivery Service** – Refers to a unique, returnable delivery system that provides colorant delivery, consumption and replenishment. Empty drums are returned for refilling and reuse

**Q. How do OnColor Complete Liquid Color Solutions help convertors and OEMs more effectively run their business and help their customers?**

A. OnColor Complete Liquid Color Solutions help convertors and OEM's improve their colorant operational efficiencies, expand their production capabilities, enhance their ability to respond quickly to ever more demanding customer requirements and reduce their environmental impact by providing a complete liquid colorant solution that eliminates many of the drawbacks and hassles common to traditional liquid colorant use -- without additional capital investment.

OnColor Complete Liquid Solutions deliver this value by:

- **Reducing operating costs and enhancing employee safety** – The OnColor Complete Liquid Color Solutions closed loop system eliminates the potential issue of spilled colorant, unusable product, and the associated mess and cleanup costs. The closed loop system simplifies material change outs and clean up.
- **Requiring minimal to no capital investment** – PolyOne, through an agreement with Clearfield Color provides and maintains the equipment, so there is minimal to no capital investment required to incorporate the system into existing operations.
- **Reducing total cost to color** – Reduced letdown ratios of OnColor Precision Liquid Colorants combined with the elimination or minimization of equipment investment and maintenance make OnColor Complete Liquid Color Solutions the most cost effective colorant system available.
- **Helping customers grow their business** – Because OnColor Complete Liquid Color Solutions provide an easy solution to add liquid colorant capabilities, convertors can readily expand into markets that are best served with liquid colorants.
- **Addressing sustainability concerns by eliminating waste associated with unused colorant and discarded containers** – Because OnColor Complete Liquid Color Solutions are delivered in a re-usable container that is re-filled and returned to the customer, additions to the waste stream are eliminated; as well as costs associated with disposal.

**Q. Is the OnColor Complete Liquid Color Solutions commercially available? If not, when is it expected to be available?**

A. OnColor Complete Liquid Color Solutions will be available through a focused market introduction within North America in May 2010, Europe in September 2010, and Asia in January 2011.

**Q. Where will OnColor Complete Liquid Color Solutions be sold (global availability)**

A. OnColor Complete Liquid Color Solutions will be available globally per the timing detailed above and available to all geographic markets served by PolyOne globally.

**Q. Are customers who install the OnColor Liquid Color Metering System obligated to buy OnColor Precision Colorants? Will other colorants work with this metering system?**

A. Because OnColor Complete Liquid Color Solutions are a closed loop system delivered through equipment owned and maintained by PolyOne, only the OnColor Precision Liquid Colorants are able be used with the system.

**Q. What is the pricing mechanism for the metering system? For the colorants?**

A. As the name implies, OnColor Complete Liquid Color Solutions is a complete system solution. The metering system, colorants, equipment, maintenance, and refill service are all included in the price of the colorants.

**Q. How do I obtain a price quote?**

A. To obtain a price quote, PolyOne's seller will work with you to assess your needs and provide a quote based upon your specific requirements.

**Q. What industries and/or applications is OnColor Complete Liquid Color Solutions intended for?**

A. OnColor Complete Liquid Color Solutions are targeted for convertors working to improve their operational efficiencies and/or expand their productions capabilities and market opportunities. OnColor Complete Liquid Color Solutions also provides an opportunity for convertors interested in sustainability to reduce their contributions to the waste stream.

Liquid colorants are typically found in tinted clear resins, translucent parts and opaque applications with recommended letdown ratios less than 2.0%. The majority of Liquid colorant usage is within the polyolefin & PET packaging industry, PVC within the building & construction Industry and for use with polycarbonate and acrylic applications in the automotive & consumer durable goods industries.

**Q. What are the primary end-use markets and applications that can most benefit from OnColor Complete Liquid Color Solutions?**

Market	Resin	Specific Applications
Packaging	Polyolefin	Caps, Closures, Cosmetic Cases, Bottles
Packaging	PET	Cosmetic and Vitamin Bottles
Consumer	Polyolefin	Toys, Totes, Media Storage, Housewares, Office Supplies
Automotive	PC and Acrylic	Exterior Lighting, Decorative Trim
Appliances	PC and Acrylic	Washer Agitators, Refrigerator Internals

**Q. What are the main drawbacks with liquid colorants today?**

- **Handling issues** – liquid colorants are inherently messy to deal with. Spills can be difficult and costly to clean.
- **Shelf life issues** – liquid colorants may have a tendency to settle which can negatively affect the product consistency and adversely impact the end products, creating added scrap and quality issues.
- **Production problems** - liquid colorants can create production problems like screw slippage for applications requiring high opacity or concentrations of colorant as needed in some additives, special effects and opacity applications.
- **Unusable material/heel** – because they are a liquid, it is very difficult to get all of the liquid colorant out of the container, resulting in wasted material and/or a mess.
- **Disposal of waste and packaging** – because it is very difficult to remove all of the liquid colorant from container special disposal is required, requiring additional cost.

**Q. What are the main advantages of liquid colorants?**

- **Material cost advantages due to lower letdown ratios** – Liquid colorants generally require less material to achieve the same final color as do solid colorants.
- **Excellent color dispersion** – Liquid colorants are generally easier to disperse than solid colorants.
- **No pre drying requirements** – Unlike some solid colorants, liquid colorants require no pre-drying prior to use; saving time in processing.
- **No heat history** – Liquid colorants are not subject to the additional heat history required to compound solid colorants.



## **TECHNICAL & PERFORMANCE HIGHLIGHTS:**

### **Q. What are the technological highlights or unique aspects of OnColor Complete Liquid Color Solutions?**

A. OnColor Complete Liquid Color Solutions are an innovative combination of a closed-loop refillable liquid color package, metering technology, and single dispersed pigment colorants that revolutionizes the delivery, management, use, and replenishment of liquid polymer colorants for injection molding, blow molding, and polymer extrusion operations.

Specific highlights of each component of the system include:

1. Colorant – The OnColor Complete Solution includes OnColor Precision Liquid Colorants – Single dispersed pigment colorants made available through an agreement with Riverdale Color.
2. Feed / Dosing – OnColor Complete Metering System includes the innovative “Pump in a Drum” (PIAD) which eliminates mess, equipment investment, and equipment maintenance and provides green friendly refillable option.
3. OnColor Delivery Service eliminates wasted product and disposal hassles and costs and reduces environmental impact.

### **Q. What polymer processes will OnColor Complete Liquid Color Solutions work with?**

A. OnColor Complete Liquid Color Solutions is compatible with most traditional injection molding, blow molding and polymer extrusion processes that require let down ratios less than 2.0%.

### **Q. What materials will OnColor Complete Liquid Color Solutions work with?**

A. OnColor Complete Liquid Color Solutions is compatible with tinted clear resins, translucent parts and opaque applications with recommended letdown ratios below 2%. The majority of liquid colorants are found within polyolefin & PET applications in the packaging industry, PVC applications in the building & construction Industry and polycarbonate and acrylic applications in the automotive and consumer durable goods industries.

### **Q. Is this technology patented?**

A. Aspects of the equipment and use of the equipment to deliver liquid colorants into the production process are patented by the companies supplying the equipment to PolyOne. PolyOne has the exclusive right to market this equipment for these uses as part of OnColor Complete Liquid Solutions

## **GETTING STARTED:**

### **Q. What do I have to do to sign up?**

A. Your PolyOne representative will work with you to evaluate your operations and determine how OnColor Complete Liquid Color Solutions can work for you. We will outline an equipment installation plan, arrange for color matching, and establish an order management and replenishment processes.

Call your local PolyOne representative or email us today at [OnColorComplete@PolyOne.com](mailto:OnColorComplete@PolyOne.com).

[www.PolyOne.com/OnColorComplete](http://www.PolyOne.com/OnColorComplete)