



OnCap™ UV Filter Additives

Program Bulletin

Color & Additives

Challenge

Ultraviolet (UV) radiation from the sun and other light sources such as fluorescent lighting can penetrate even visually opaque plastic containers and degrade their contents. Degraded contents can show color fade, undergo a change in color hue, taste or odor, or lose effectiveness of their active ingredients. The result is the potential for lost revenue as dissatisfied consumers avoid repeat purchases, and a higher cost of product as shelf life is reduced, making inventory obsolescence high.

Solution

The use of UV filter additives can limit the amount of harmful UV radiation that penetrates the container walls and degrades the contents. UV filters work by filtering out the UV rays that are able to reach the contents. It is important to know the specifics of the storage and end use environment, polymer base and processing conditions to design the most effective UV filter package to meet the performance expectations. Versions meeting FDA regulatory requirements are available.

Value

The use of UV filters can extend the shelf life of container contents and reduce the chance that a customer experiences a degraded product. OEMs should see product returns decrease, and overall sales and customer satisfaction increase. Risks are reduced as product expiration labeling is more accurate. Operational costs are reduced as inventory obsolescence drops and production batch sizes are increased.

Implementation

OnCap™ UV filters are available in concentrated pellet, bead or liquid form. UV filter packages are available for PE, PP, PS and PET resins. Use rates vary based on the situation, with typical rates ranging from 1% to 3% for pellets or beads, and 0.25% to 1% for liquids. Accurate dosing of pellets or beads is achieved via a volumetric in-line feeder or gravimetric weigh scale blender.

The liquid form utilizes a metering pump adapted to the processing equipment.



UV filters can be combined with UV stabilizers and/or antioxidant additives into a single concentrate to provide complete protection from UV exposure for container and contents as well as providing physical, mechanical and thermal stability in production processes. They can also be combined with colorants into a single OnColor™ Smartbatch™ concentrate.

Application

UV filter formulations are available for a variety of thermoplastic processes, including injection molding, blow molding, compression molding, and sheet and film extrusion. UV filters are commonly used in applications where outdoor or indoor light exposure to package contents is a concern, including food and beverage, personal care, cosmetics, healthcare, household products, and industrial and institutional products.

PolyOne offers a one-stop source of color concentrates, additive concentrates, color and additive systems, and associated technology and support services. Our expertise extends across a wide variety of industrial and consumer markets. We have more than 20 manufacturing locations in North America, Europe and Asia, with color labs, design centers and sales offices located around the world.

Please contact your nearest sales office for assistance in choosing the right solution for your needs.

CONTACT INFORMATION

Americas

U.S. – Avon Lake, Ohio
+1 440 930 1000
Argentina – Buenos Aires
+0054 11 4200 5917
Brasil – Campinas
+55 19 3206 0561
Mexico – Toluca
+52 722 2790200

Asia

China – Shanghai
+86 (0) 21 5080 1188
China – Shenzhen
+86 (0) 755 2969 2888

India – Mumbai
+91 9820 194 220
Thailand – Rachatewa,
Bangplee Samutprakarn
+66 (0) 2327 9100

Europe

Belgium – Assesse
+32 (0) 83 660 211
Czech Republic – Praha 1
+420 224 142 214
Denmark – Glostrup
+45 (0) 43 20 6300
France – Saint-Ouen
L'Aumône
+33 (0) 1 34 40 39 50

France – Tossiat
+33 (0) 4 74 42 69 70
Germany – Bendorf
+49 (0) 2622 700 90
Hungary – Gyor
+36 (0) 96 515 610
Italy – Gallarte
+39 03 31 797 448
Poland – Kutno
+48 24 357 47 00
Spain – Oricain, Navarra
+34 (0) 948 331 011
Sweden – Angered
+46 (0) 31 92 84 50



PolyOne

*Beyond Polymers.
Better Business Solutions.™*

www.polyone.com

PolyOne Americas

33587 Walker Road
Avon Lake, Ohio 44012
United States
+1 440 930 1000

PolyOne Asia

Guoshoujing Road No. 88
Z.J Hi-Tech Park, Pudong
Shanghai, 201203, China
+86 (0) 21 5080 1188

PolyOne Europe

Rue Melville Wilson 2
5330 Assesse, Belgium
+32 (0) 83 660 211

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