



TECHNICAL DATA SHEET

TRINOX OB 1

OPTICAL BRIGHTNER

Optical brighteners are added to many materials to reduce yellowing, improve whiteness, and to enhance the brightness of a product. TRINOX OB-1 is used widely in the plastics, because of its excellent brightening ability, good thermal stability, and compatibility with many polymers.

- **Typical Properties**

Chemical name: 2,2-(1,2-Ethenediyl-di-4, 1-phenylene) bisbenzoxazole

Molecular weight: 414.4

CAS No.: 1533-45-5

C.I.: 393

- **Specifications:**

Ash % - 0.3max

Empirical Formula - C₂₈H₁₈N₂O₂

Melting Point(DTA),C - 353-359

Appearance - Yellowish Green Powder

Odor - Free of odor

Volatile Content % - 0.3max

Assay % - 99min

Particle Size - 200 meshes

- **Effect of Optical Brighteners on the Whiteness of Polymers**

Optical brighteners function by absorbing ultraviolet radiation and remitting blue light. The emitted blue light will reduce the yellow colour of a polymer. In the presence of a whitening agent, such as TiO₂, the use of TRINOX OB-1 will produce a brilliant white appearance.

Two primary factors that affect the whiteness/yellowness of a formulation are the color of the base polymer & % level of brightener added. If no whitening agent, such as TiO₂, is used, the level of TRINOX OB-1 required will be lower than when used alone. Generally this level is around 25-50 ppm. In determining the optimum concentration of brightener, the effect of any other UV-absorbing materials in the polymer should be considered. It is important that users perform sufficient evaluations to determine the optimum level of TRINOX OB-1 for their specific end uses.



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- **Methods of Addition**

To be effective, an optical brightener must dissolve in the polymer to well. Since the typical addition levels for TRINOX OB-1 is in the range of 100-400 ppm, the use of a concentrate, or masterbatch, is recommended. Concentrates typically are containing 1%-10% by weight of TRINOX OB-1.

The concentrate can be produced on an extruder using normal processing conditions for the polymer, including drying if necessary. The concentrate is then let down to typical use levels in the final formulation. Plastics compounding equipment is normally adequate for producing TRINOX OB-1 brightener formulations. The key requirement is to thoroughly disperse the brightener so that it will dissolve uniformly throughout the molten polymer. This is usually achieved most readily with a concentrate or masterbatch

- **Improving Whiteness of Recycled Polymer**

The business of processing post consumer plastics and waste polymer continue to grow. These materials can be recycled into a variety of useful products, from plastic lumber to synthetic fiber. Polyester bottle polymer, polyester plastic waste, and waste fiber polymer can be recycled into polyester fiber that can be used in carpets, filling and insulation material, nonwovens, and apparel. One of the shortcomings of processing these materials is the uncertainty of the color of the source material. Using optical brighteners, the value of the recycled materials can be significantly enhanced by providing a more uniform whiteness. TRINOX OB-1 will greatly improve the whiteness, normal fiber applications require around 200-300 ppm in new polymer, but recycled material may require as much as 300-450 ppm. Optical brighteners are very effective in improving the appearance of the polymer or fiber. Off-class or second-quality polyamides can also be improved in a similar way.

- **Food Industry Applicable**

TRINOX OB-1 complies with regulations for indirect food additives. TRINOX OB-1 is restricted to use as an optical brightener for all polymers at a level not to exceed 0.025% by weight of polymer and at the temperatures not to exceed 135°C(275°F).

- **Packing:**

25 kg Fibre Drum With PE Liner.