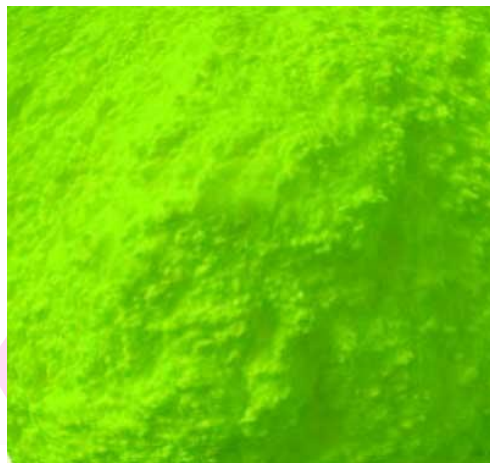




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## Optical brightener



KRS Chemicals

Optical brightening agents are additives which are used in the paper industries to enhance whitening effects of papers. These chemical compounds absorb light in the ultraviolet and violet region (usually 340-370nm) and re-emit light in the blue region (typically 420-470 nm). It gives a fluorescent effect that masks the inherent yellowness of the fiber and enhances the brightness of the paper product. They not only used in paper but also used in plastics, textiles, laundry detergents. They are also known as optical brighteners, artificial whiteners.

The optical brighteners can be applied in either the wet end or dry end or both ends. If you want to internal brightness, then you must add them to the stock in wet end. Many paper manufactures use them in dry end at the size press or calendar stack as surface coating. The dry end application is more economical compared to the wet end because in the dry end the chemical is used on the outer surface fiber in lieu of whole fiber content for reflects the ultraviolet light. However, some manufacturers use a combination treatment; they use both the wet and dry end.

## **Types of optical brightening agents**

The optical brighteners that are used in paper industries can be sort into three types based on the sulfonic groups. All of them contain stilbene structure

### **Disulfonated OBAs**

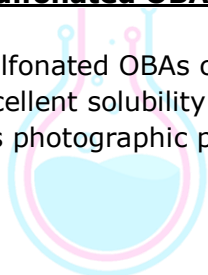
This OBAs contains two sulphonic groups. They are hydrophobic and have a very good affinity. The solubility is very low. Normally it is used in wet end.

### **Tetrasulfonated types**

This OBAs contains four sulphonic groups. It has medium affinity and good solubility so ideal for paper industries both in wet end and dry end. They are suitable for neutral or alkaline pH medium. It is most common type of OBAs that are used in paper and paper board.

### **Hexasulfonated OBAs**

Hexasulfonated OBAs contains six sulphonic groups. It is special type of brightener which has excellent solubility. Mostly it is used in those papers where high brightness is required such as photographic paper. They are used in dry end as coating.



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