

IRIS Colorants for Seed Treatment and Fertilizers----BEEJCOAT



Seed Coloration

The coloration of seeds which have been treated with pesticides is mandatory according to most legislations in order to prevent the misuse of treated seeds. Besides this important safety feature, there are other important aspects related to the coloration of seeds.

- *Coloration according to legal regulations to prevent consumption of treated seeds*
- *Use of individual colours and colour shades for branding*
- *Value perception and cosmetic appeal for high-value seeds*
- *Identification of a specific treatment or distinction between different seed varieties*
- *Easy monitoring of uniformity and consistency of seed treatments*
- *Better monitoring of seed depth and spacing during sowing*
- *Identification of original seeds via tagging with distinct colorants*

In general, a colorant can already be included in the seed treatment pesticide formulation. Alternatively, it may be added to a seed coating slurry based on one or more uncoloured pesticide products and a suitable binder system (polymer). It is important to understand the basic features of the different types of colorants in order to identify the most suitable product. One needs to distinguish between pigments (insoluble in the application medium) and water-soluble dyes. In principle, both types can be used in seed treatment applications, but because of various advantages, pigments have almost completely replaced dyes in this application field. Pigments are unlikely to show signs of phytotoxicity (which can be an undesired side effect when using dyes), exhibit a much higher stability and are not prone to staining and bleaching.

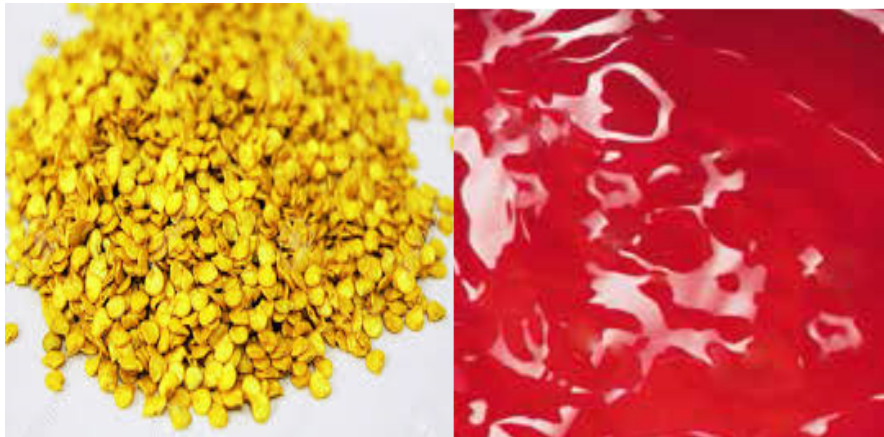


Regulatory Background

Various regulations are in place to ensure that treated seeds are colored in order to avoid human or animal consumption. One example is the U. S. Code of Federal Regulations, 40 CFR §153.155, which requires that “pesticide products intended for use in treating seeds must contain an EPA-approved (United States Environmental Protection Agency) dye to impart an unnatural color to the seed”. Certain products are exempt from this requirement if they are “labeled for use solely by commercial seed treaters and that the label bears a statement requiring the user to add an EPA-approved dye with the pesticide during the seed treatment process”. This means that either a pesticide formulation used for seed treatment must contain a colorant or that it must be added prior to application on the seed. From a regulatory point of view, colorants in seed treatment pesticide formulations are considered as “co-formulants” or “inert ingredients”. With the requirement of adding only “EPA-approved dyes”, the same strict inert ingredient requirements also apply for colorants added separately to seed coating formulations.

Product Overview

The BEEJCOAT pigments and pigment preparations are globally available through Vibfast quick delivery shipping process. One of our aims is to optimally serve our customers, who are increasingly focused on globally harmonized formulations and standardized raw materials. All BEEJCOAT products in this brochure have uniform global compositions and specifications.



All BEEJCOAT products in this brochure are exempt from hazardous labelling requirements. The products meet Clariant's strict purity requirements for low heavy metal and primary aromatic amine content, i. e. they comply with European Resolution AP (89) 1 for colorants in plastic materials which come into contact with food. All products are manufactured without using nonylphenol ethoxylates (NPE) and alkylphenol ethoxylates (APEO).

The powder pigments and pigment Preparations are EPA approved as inert ingredients in pesticide formulations applied to growing crops, including food crops, and are exempt from the requirement of a tolerance according to 40 CFR §180.920. The products have been tested for seed safety and do not show a negative impact on germination.

Seed safety is a primary concern for seed companies and seed coaters in order to protect their valuable seeds. It is imperative that no ingredient in a seed coating formulation has a negative impact on germination. While pigments are unlikely to exhibit phytotoxic properties due to their insolubility and non-bioavailability, pigment preparations which contain wetting and dispersing agents can generally become an area of concern.

All BEEJCOAT pigment dispersions have been tested in germination tests according to international seed testing standards and have shown no signs of phytotoxicity. However, it is the responsibility of the user to verify the acceptability of germination for their desired treating mixture and process.

