

Composibor®

Biocide



CAS Number 138265-88-0 (12447-61-9)

EPA Reg. Number 1624-120



Attributes and uses

Composibor® is a free flowing, readily dispersible, bright white powder, which does not detract from bright colors or pure whites. Its optimum performance as a biocide is obtained when *Composibor* is uniformly dispersed in wood, wood plastic composites, plastic, and rubber products.

Wood and wood-plastic composites

Composibor wood preservative provides protection from wood destroying organisms for wood composite materials used in protected above-ground applications (UC1, UC2, and UC3A) and for wood-plastic composites in unprotected, above-ground applications (UC3B). By adding *Composibor* prior to or during the blending process, it is possible to achieve a thorough and uniform distribution of the chemical throughout the composite material. *Composibor* can be used as an additive in the manufacturing of wood- and wood-plastic composites in order to control the growth of white (eg *Trametes versicolor*) and brown (eg *Gloeophyllum trabeum*) rot decay fungi. *Composibor* also helps protect composite materials from damage caused by wood destroying insects.

The ability of a wood- and wood-plastic composite to resist wood destroying organisms is dependent on wood species, resin type, resin and wax content, method of production, exposure hazard and the presence of wood preservatives. In independent tests performed in Hawaii on aspen flake wood-composites, *Composibor* wood preservative at a retention of 0.75% (w/w) provided protection against decay fungi. The data presented above is intended to serve only as a guideline and the wood- and wood-plastic composite manufacturer must determine the *Composibor* loadings for their treated product and its end-use application. *Composibor* loadings must not exceed 8% (w/w) and for wood-composite loadings in excess of 1.5% (w/w) it may be necessary to use additional adhesive binder to compensate for possible effects on strength.

Plastic and rubber coatings preservative

Composibor controls mixed fungi such as *Aspergillus niger*, *Penicillium funiculosum*, *Chaetomium globosum*, *Trichoderma (Gliocladium) virens* and *Aureobasidium pullulans*. The effective level is dependent on fungal susceptibility of the product, as well as the ultimate conditions for the use of the product. For interior applications, such as, PVC carpet-backing, wall coverings, auto upholstery, shower curtains, and urethane mattresses, apply 3 – 20 phr of *Composibor*. No plastic formulation can exceed 100 phr of *Composibor* additive.

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Chemical and physical properties

Formula weight	434.67
Appearance	White powder
Median particle size	9 microns (laser diffraction)
Solubility	Less than 0.28% in water at room temperature Can be hydrolyzed by strong acids and bases
Specific gravity	2.8
Refractive index	1.58
Bulking density	42-60 lbs/ft ³
Oil absorption	35g oil/100g (ASTM 281-84, Typical)

Theoretical chemical composition

Boric oxide, B ₂ O ₃	48.2%
Zinc oxide, ZnO	38.2%
Water of crystallization, H ₂ O	13.6%

Containers

Multi-wall paper bags with a polyethylene moisture-resistant film barrier, 50 pounds (22.68 kg) net; or superbags with polyethylene liner, 2500 pounds (1133.79 kg) net.

Warnings

Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

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