



NUMBER 4876

Fungitrol™ 920 fungicide

EPA Registration No. 1529-41
EINECS No. 259-627-5 (IPBC)

Description

Fungitrol 920 fungicide is a water-based dispersion of 20% IPBC (3-Iodo-2-Propynyl Butyl Carbonate) which offers highly effective, broad-spectrum protection against degradation, discoloration and defacement caused by mold, mildew and algae.

Key Attributes

Fungitrol 920 fungicide is used primarily as a dry-film mildew protector for paint, coatings, stains, and more. Other applications include adhesives and printing inks. It is easily incorporated into water-based formulations. It can be added efficiently at the appropriate formulation stage (i.e., prior to letdown).

Applications and Usage Notes

Adhesives

Fungitrol 920 fungicide can be used as an additive to non-medical, non-food use natural and synthetic adhesive formulations and caulks to prevent the growth of fungal organisms in the material both in the wet state and in the dry film of the finished product. Recommended use levels are between 0.125 – 1.25% wet formulation weight. This product should be added toward the end of the production cycle with good agitation to ensure a uniform distribution. For example, to inhibit the growth of mildew on latex-based wall cover adhesive for a non-food area add 1.0% (10 lbs. of Fungitrol 920 fungicide per 1000lbs. of latex-based adhesive formulation) of this product to the latex-based formulation

Inks

Fungitrol 920 fungicide may be used in aqueous-based ink solutions for protection of these solutions against attack by fungal organisms. It is recommended that this product be added at the end of the production cycle with good agitation. This product will generally impart protection when used at levels of 0.25 – 3.0% of active ingredient based on the formula weight.

Paints and Stains

Fungitrol 920 fungicide used in waterborne paints and stains will inhibit the growth of mildew. Addition should be at the end of the manufacturing process and allow to mix long enough to be adequately dispersed and should not be added to hot paint. Typical levels for protection against mildew on painted surfaces are 0.5 – 2.4% by weight on wet paint. For example, house paint with wet density of 10 lbs. per gallon would use 5 – 24.0 lbs. of this product per 100 gallons of wet paint. Where the climate is severe and mildew growth is a major problem for painted surfaces, more would be required, as much as 4.0% by weight in the paint. For interior paint use, approximately half the exterior concentration should be used, 0.2 – 1.2% by weight in the paint. Appropriate levels are best determined by field trials. Use levels for above are 0.2 – 4%



Paper Coatings

Fungitrol™ 920 fungicide may be used as a mildewcide in aqueous coatings, which are applied to paper and cardboard substrates. This product can be used to prevent mold and mildew from growing on products such as: corrugated cardboard or soap wrappers, wall covers, non-food contact packaging materials and non-food contact paper tapes. Use levels of this product range from 0.25 – 3.75% of this product by weight. This product should be added at the end of the production cycle and with good agitation to prevent possible mechanical losses and to ensure uniform distribution. As an example, to inhibit growth of mildew on corrugated cardboard intended for a non-food packaging, add 2.5% (25lbs. Fungitrol 920 fungicide per 1000 lbs. of coating material) of this product to the coating material formation.

Wood Preservation

Fungitrol 920 fungicide is a liquid designed for use as a wood preservative for use in above-ground applications. All recommendations of use levels are in percentage by weight, and refer to this product. Dosage ranges are given for the various applications to indicate the approximate levels for a particular application. Exact level of use should be determined by field trials.

Fungitrol 920 fungicide may be applied from aqueous dispersions to new lumber, plywood, particle board, and more, to prevent the growth of mildew, sapstain and wood rot on these substrates. This product is recommended for use on wood in above-ground use only.

Treating solutions may be prepared by dispersion in water. Levels of 1.5 – 6.0% of this product are suggested depending upon the severity of conditions for end use and the extent of time that protection is required.

For freshly sawn lumber, a concentration of 1.5% of this product is suggested as a starting level. A one minute dip at ambient temperatures in a solution or aqueous dispersion containing 1.0% of this product should be adequate to control the development of mildew and sapstain organisms on the lumber. Because of the great variation in susceptibility of fresh sawn lumber relating to the type of wood, sawing and storage techniques, conditions of humidity, method of treatment, and more., it is usually necessary to carry out field tests to determine the most appropriate means of application and the optimum concentration of this product to be used within the range specified.

For best results, lumber should be treated within twenty-four hours after it is sawed. The lumber should be completely immersed in the treating bath, and the treating vat designed to permit easy immersion and removal and to minimize spillage. The vat may be cleaned by emptying and rinsing with water or by use of a detergent solution. To add additional product while treating, first prepare the proper dispersion in a separate container (of wood or plastic) and added to the treating vessel.

After treatment, lumber should be stacked in a properly maintained seasoning yard with good drainage so that no water will accumulate in any area. The yard should be kept free from weeds and vegetation, which may hold moisture and promote growth of decay and stain producing fungi. All debris and lumber scraps should be removed from the area. A properly laid out yard should take advantage of prevailing winds to permit good air circulation. Main alleys should be at least 16 feet wide. Stack foundations should be sufficiently elevated to permit ready access of air to the pile and allow water to drain off quickly.

Please note the active ingredient (3-iodo-2-propynyl butyl carbamate) contained in this product is currently under re-registration. Therefore, additional labeling requirements will be necessary in the future.

Typical Product Properties

Chemical structure	$ \begin{array}{cccccccc} & \text{H} & & \text{O} & & \text{H} & \text{H} & \text{H} & \text{H} \\ & & & & & & & & \\ \text{I} - \text{C} \equiv \text{C} - & \text{C} & - \text{O} - & \text{C} & - \text{N} - & \text{C} & - \text{C} & - \text{C} & - \text{C} - \text{H} \\ & & & & & & & & \\ & \text{H} & & & & \text{H} & \text{H} & \text{H} & \text{H} \end{array} $
Chemical name	Carbamic acid, butyl-, 3-iodo-2-propynyl ester
Other names	3-iodo-2-propynyl butylcarbamate, IPBC
Formula	C ₈ H ₁₂ INO ₂

CAS No.	55406-53-6
Description	white dispersion
Density	1.10 - 1.15g/cm ³
pH (10% dilution)	5.0 - 6.0
Viscosity (25 °C)	1,200 - 8,000 (cP)
Percent active	20%
Odor	none
Stability	Stable in pH range of 3–11

General Efficacy

Fungitrol™ 920 fungicide exhibits superior fungi, algae and bacteria control against a wide variety of organisms (See Table).

Agar Inhibition Data (values for active ingredient)

Test Organism	Minimum Inhibitory Concentration (MIC), ppm
Mold/Mildew/Yeast/Fungi	
<i>Alternaria tenuis</i>	5.0
<i>Aspergillus glaucus</i>	4.0
<i>Aspergillus niger</i>	0.6-5.0
<i>Aspergillus oryzae</i>	4.0
<i>Aureobasidium pullulans</i>	4.0-6.0
<i>Candida albicans</i>	6.0-8.0
<i>Chaetomium globosum</i>	5.0
<i>Gliocladium sp.</i>	8.0
<i>Penicillium brevicaulis</i>	1.0
<i>Penicillium funiculosum</i>	4.0-6.0
<i>Saccharomyces cerevisiae</i>	5.0
<i>Talaromyces flavus</i>	6.0
<i>Trichoderma viride</i>	10.0

Test Organism	Minimum Inhibitory Concentration (MIC), ppm
Algae	
<i>Chlorella pyrenoidosa</i>	8.0
<i>Oscillatoria sp.</i>	<50.0
Bacteria	
<i>Bacillus subtilis</i>	50.0
<i>Escherichia coli</i>	100.0
<i>Klebsiella pneumonia</i>	50.0
<i>Pseudomonas aeruginosa</i>	250 -1000

Comprehensive testing and long-term experience with Fungitrol 920 fungicide shows a favorable toxicological profile. In-depth animal and human studies and experience in various fields of application have provided a comprehensive base of favorable toxicological data which indicates the safe use of Fungitrol 920 fungicide in industrial applications.

Packaging Information

Product	Physical Form	Pkg Type	Net Wgt	Pkg Type	Net Wgt	Pkg Type	Net Wgt
Fungitrol 920	Liquid	Drum	204.12 kg	IBC	907.2 kg	Pail	18.14 kg

Product Safety Information

For health and safety data and handling, storage and disposal procedures, please refer to the Safety Data Sheet (SDS) and product label.

Regulatory Approvals

The active ingredient in Fungitrol™ 920 fungicide has been on the market for approximately 20 years and has received international recognition and approvals for various applications. 3-iodo-2-propynyl butylcarbamate (IPBC) is TSCA, EINECS, DSL, KECI and MITI listed. IPBC is on the official RAL List in Germany.

Regulatory requirements governing the use, registration, and approval of industrial biocides around the world are continually changing and evolving.

All statements, information and data presented herein are believed to be accurate and reliable, but are not to be taken as a guarantee, an express warranty, or an implied warranty of merchantability or fitness for a particular purpose, or representation, express or implied, for which Ashland Inc. and its subsidiaries or affiliates assume legal responsibility. It is the customer's responsibility to ensure that its use of industrial biocidal products is in accordance with all applicable laws and regulations. In addition, customers are strongly advised to confirm that the industrial biocide they are purchasing has all necessary regulatory approvals for the intended use and the country where the product is going to be used.

To learn more, visit ashland.com

EMAIL: specialtiessolutions@ashland.com

CHINA Tel: +86 212402 4888 DUBAI Tel: +9714 3818512 INDIA Tel: +91 22 61484646
MEXICO Tel: +52 55 52 76 6121 SINGAPORE Tel: +65 6775 5366
SWITZERLAND Tel: +4152 560 55 00

ASHLAND.