

PREVENTOL A8 TECHNICAL FUNGICIDE

N-107

FOR USE IN THE MANUFACTURE OF FUNGICIDES IN AQUEOUS AND SOLVENT SYSTEMS TO PROTECT WOOD COMPOSITE PRODUCTS, WOOD PRODUCTS INTENDED FOR ABOVE GROUND AND IN-GROUND CONTACT, PLASTICS, COATINGS AND PAINT SYSTEMS FOR IN-FILM PRESERVATION, GLUES AND ADHESIVES, AND METALWORKING/CUTTING FLUIDS AGAINST BIODETERIORATION

ACTIVE INGREDIENT: TEBUCONAZOLE, α -[2-(4-Chlorophenyl)ethyl]- α -(1,1-dimethylethyl)-1H-1,2,4-triazole-1-ethanol.....97%
INERT INGREDIENTS:.....3%
100%

WARNING! KEEP OUT OF THE REACH OF CHILDREN

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

May be fatal if inhaled. Harmful if swallowed. Causes eye irritation. Do not breathe dust and avoid contact with eyes or clothing. Wear a mask or pesticide respirator jointly approved by the Mine Safety and Health Administration and the National Institute for Occupational Safety and Health. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

Container Disposal: Do not use container in connection with food, feed, or drinking water. Completely empty container into the processing equipment. Then dispose of empty container in a sanitary landfill or by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

Handle and open container in a manner as to prevent spillage. If the container is leaking or material spilled for any reason or cause, carefully sweep the material into a pile. Refer to Precautionary Statements on label for hazards associated with the handling of this material. Do not walk through spilled material. Dispose of

FIRST AID

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Call a Poison Control Center or doctor for treatment advice.

If swallowed: Call a Poison Control Center or doctor for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told by Poison Control Center or Doctor. Do not give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN: No specific antidote is available. Treat symptomatically.

The Bayer Corporation Pittsburgh Emergency Response Telephone Number is 412/923-1800
IN CASE OF EMERGENCY, CALL: CHEMTREC 800-424-9300
INTERNATIONAL 703-527-3887

NOTE TO USER: For worker protection during mixing, loading and during application, wear a hat, long sleeve shirt, and long legged trousers or overalls. In addition, during mixing and loading, wear rubber or neoprene gloves. Protective clothing should be laundered separately following application.

DIRECTIONS FOR USE: It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

FOR DETAILED DIRECTION FOR USE, PLEASE REFER TO BAYER CORPORATION TECHNICAL INFORMATION SHEET NUMBER N-107. Read entire direction before using Preventol A8 Technical Fungicide.

Formulators are responsible for obtaining their own EPA Registration No. and developing the data required to support their registrations. Preventol A8 Technical Fungicide is intended for formulation of the following uses:

Millwork: Window frames, wood doors, doorframes, etc.
Wood Stains (Preservative Incorporation): Wood siding, lumber, plywood, particleboard, wood decks, wood furniture, (outdoor).
In-Ground Contact Uses: Wood products for in-ground uses (pillings, telephone poles, wood building materials, etc.).
Sapstain Control: Fresh-cut lumber.
Industrial Preservative Uses: Plastics, coatings and paint systems, glues and adhesives, metalworking fluids.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to estuarine invertebrates. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to the discharge. Do not discharge effluent containing this product into sewer systems without previously notifying the sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

Pesticide Storage: Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

RESTRICTIONS: Do not package Preventol A8 in metal containers.

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Handle and open container in a manner as to prevent spillage. If the container is leaking or material spilled for any reason or cause, carefully sweep the material into a pile. Refer to Precautionary Statements on label for hazards associated with the handling of this material. Do not walk through spilled material. Dispose of pesticide as directed above. In spill or leak incidents, keep unauthorized people away. You may contact the Bayer Corporation Pittsburgh Emergency Response Team for decontamination procedures any other assistance that may be necessary. The Bayer Corporation Pittsburgh Emergency Response Telephone Number is 412/923-1800, or contact CHEMTREC at 800/424-9300.

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EPA ESTABLISHMENT NUMBER 3125-MO-1

ACCEPTED
EPA REG. NO.: 39967-10
NET CONTENTS: _____
SEP - 5 2001
Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide, registered under EPA Reg. No. 39967-10

39967-10

9/5/2001

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U.S. PRODUCT INFORMATION

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Product Information

Preventol A8

TECHNICAL FUNGICIDE

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FOR USE IN THE MANUFACTURE OF FUNGICIDES IN AQUEOUS AND SOLVENT SYSTEMS TO PROTECT WOOD COMPOSITE PRODUCTS INTENDED FOR ABOVE GROUND AND IN-GROUND CONTACT, PLASTICS, COATINGS AND PAINT SYSTEMS FOR IN-FILM PRESERVATION, GLUES AND ADHESIVES AND METALWORKING/CUTTING FLUIDS AGAINST BIODETERIORATION

Bayer Product Code/Technical Information Sheet No. N-107

EPA Registration Number 39967-10

CAS Number [107534-96-3]

Chemical and Physical Data

| | | |
|---|--|----------------|
| Common Name: | Tebuconazole | |
| Chemical Name: | α -[2-(4-Chlorophenyl)ethyl]- α -(1,1-dimethylethyl)-1H-1,2,4-triazole-1-ethanol | |
| Minimum Purity: | min. 93% | |
| Nominal Concentration: | 97% | |
| Density (20°C): | 1.25 | |
| Bulk Density: | approx. 400 kg/m ³ | |
| Vapor Pressure (60°C): | approx. 6 x 10 ⁻⁶ hPa (pure active ingredient) | |
| Melting Point: | approx. 103°C | |
| Flash Point: | > 185°C | |
| Ignition Temperature: | approx. 468°C | |
| Solubility of Active Ingredient in % by Weight (20°C): | water | approx. 32 ppm |
| | ethyl glycol | approx. 27.0% |
| | propylene glycol monomethyl ether | approx. 25.5% |
| | dipropylene glycol monomethyl ether | approx. 21.5% |
| | Solvesso 100 | approx. 2.9% |
| | Kristalloel 60 | approx. 0.3% |
| | white spirit* | approx. 0.3% |
| | *(aromatic content 30% - calculated as xylene) | |

Stability

Preventol A8 is resistant to hydrolysis in acidic up to strong alkaline formulations. Reaction in water: neutral.

Storage

If correctly stored and kept in original sealed container, the shelf life of Preventol A8 is 1 year.

Applications

Preventol A8 has a broad spectrum of activity and is particularly effective against wood-rotting Basidiomycetes strains. Preventol A8 is practically unleachable, light-stable, heat-stable and non-volatile and therefore suitable for long-term protection. It is suitable for use in solvent-based and aqueous wood preservatives. The active ingredient

is compatible with the binders, pigments, dryers and auxiliaries normally used in wood preservatives as well as with a variety of blue stain fungicides and with insecticides such as Cyfluthrin or permethrin.

Preventol A8 is also suitable, due to the above described properties, for preservatives intended to protect plastics, coatings and paint systems, glues and adhesives, and metalworking fluids against infestation by fungal organisms.

Spectrum of Activity

Preventol A8 has a broad spectrum of activity against wood-rotting fungi. Toxic values are determined in accordance with the relevant internationally recognized standards. The values obtained from samples which have been aged artificially - for example evaporative aging as specified in EN 73 or leaching as specified in EN 84 - are not substantially higher than the levels recorded in samples which have not been aged.

Toxic values (kg/m³) determined in accordance with EN 113

| Test institute BAM ¹ 1990, scots pine sapwood | | | Test institute BRE ² 1990/1993, scots pine sapwood | | |
|--|--------------------|---------------------------------|---|---------------------------------|------------------------|
| Test fungus | unaged | after evaporative aging (EN 73) | unaged | after evaporative aging (EN 73) | after leaching (EN 84) |
| Coniophora puteana | 0.030 - 0.050 | 0.070 - 0.110 | * - 0.052 ³ | * - 0.053 ³ | * - 0.054 ³ |
| Gloeophyllum trabeum | 0.012 - 0.030 | 0.045 | * - 0.051 ³ | * - 0.050 ³ | * 0.051 ³ |
| Poria placenta | 0.120 - 0.180 | 0.280 - 0.440 | 0.012 - 0.153 | 0.150 - 0.310 | 0.099 - 0.152 |
| Coriolus versicolor | test not conducted | test not conducted | 0.151 - 0.299 | 0.155 - 0.306 | 0.101 - 0.150 |
| 1 BAM = Federal Office for Material Research and Testing, Berlin, Germany | | | | | |
| 2 BRE = Building Research Establishment Timber Division, Biodegradation Section, Garston, UK | | | | | |
| 3 no failing concentration determined | | | | | |

Soil block test AWPA E10-91 carried out by test institute MSFPL⁶

| Test fungus | Wood species | Weathering | Toxic values (kg/m ³) |
|---|----------------|------------|-----------------------------------|
| Coriolus versicolor | Sweetgum | without | < 0.540 ⁷ |
| | | with | < 0.546 ⁷ |
| Irpex lacteus | Sweetgum | without | 0.018 - 0.019 |
| | | with | 0.019 - 0.021 |
| Gloeophyllum trabeum | Ponderosa pine | without | 0.018 - 0.0193 |
| | | with | 0.026 - 0.030 |
| Poria Placenta | Ponderosa pine | without | 0.117 - 0.123 |
| | | with | 0.138 - 0.144 |
| 6 MSFPL = Mississippi State Forest Products Laboratory, Mississippi State, USA | | | |
| 7 no weight loss even at lowest retention of tebuconazole used; no toxic value calculated | | | |

Soil block test ASTM D 1413 carried out by test institute MTU⁸

| Retention of tebuconazole (kg/m ³ wood) | 0.12 | 0.24 | 0.48 | 0.96 |
|---|--------------------------------|------|------|------|
| Test fungus | weight loss of the test blocks | | | |
| Coriolus versicolor (birch) | > 50 | > 50 | 13.9 | 0.9 |
| Gloeophyllum trabeum ⁹ (southern pine) | 0.2 | -1.6 | -0.2 | -1 |
| 8 MTU = Michigan Technological University, Institute of Wood Research, Houghton, USA | | | | |
| 9 no weight loss even at lowest retention of tebuconazole used; no toxic value calculated | | | | |

In addition, the product was tested for fungicidal effectiveness in accordance with the German quality and test regulations (*Güte und Prüfbestimmungen*) for the award of the RAL-quality mark for wood preservatives (*RAL-GZ-830*).

The results show that 0.6% or more Preventol A8 in solvent-based and water-based wood preserving primers and stains applied in quantities of 210 ml/m² is sufficient to protect the wood against decay. Products formulated for wood protection must be registered in accordance with EPA requirements.

INFORMATION ABOUT SAFETY AND HANDLING AND ON ECOLOGICAL AND TOXICOLOGICAL BEHAVIOR IS GIVEN IN OUR MATERIAL SAFETY DATA SHEET AND IN OUR SUMMARY OF TOXICITY AND ECOTOXICITY.

SUGGESTED USES

Formulators are responsible for obtaining their own EPA Registration No. and developing the data required to support their registrations. Preventol A8 Technical Fungicide is intended for formulation of the following uses:

Wood-based Composite Products

GENERAL: Preventol A8 is recommended for the formulation of preservatives intended for use in wood-based composite products, such as waferboard, fiberboard, particleboard, plywood and oriented-strand board to prevent the growth of mildew, blue stain and wood destroying fungi on the composite product. These composites are used in the following applications: millwork, including door and window frames; exterior siding; construction lumber, and exterior wood. Composite wood treated with Preventol A8 does not change in appearance and may be painted when dry.

ALL OF THE ABOVE USES ARE NON-SOIL CONTACT NON-FUMIGATION TREATMENTS

Wood Products Intended for In-Ground and Out of Ground Contact

GENERAL: Preventol A8 is recommended for the formulation of preservatives for use in wood intended for above-ground and/or in-ground contact, such as Ponderosa pine, Scots pine, Southern yellow pine, beech, oak, birch, and other wood species susceptible to decay by rotting fungi. Such uses include railway sleepers, fence posts, poles, horticultural posts, etc.

Preventol A8 may be applied to wood through a wood preservative formulation based on: water and/or organic solvents, emulsifiers, fixating agents like wax, additional active ingredients (to protect against fungi and/or insects, including termites), dyestuffs, pigments and penetration improvers.

The method of incorporation of Preventol A8 will depend on the specific preservative formulation, specific treating process and wood species to be treated. Formulations for application by dip, double vacuum or pressure treatment methods are possible.

ALL OF THE ABOVE USES ARE NON-FUMIGATION TREATMENTS

Plastics Preservation

GENERAL: Preventol A8 is recommended for the formulation of preservatives intended for use in PVC, polyurethane, and other polymers used for the production of shower curtains, tarpaulins, sun umbrellas and other plastics products.

Coatings and Paint Systems

GENERAL: Preventol A8 can be used for the formulation of preservatives intended for the preservation of coating films. The exact concentration of Preventol A8 will vary with the composition of the coating to be protected and with the risk of infestation. To reach optimum effectiveness, preliminary testing with the ranges provided below is recommended to determine the most appropriate amount of Preventol A8 to be used.

Recommended concentration of Preventol A8 Preservative in emulsion paints for exterior use:

- 1.0 - 2.0% (calculated on total solid content)

To achieve the maximum level of protection, Preventol A8 can be combined with other mildewcides such as, 3-iodo-2-propinylbutyl carbamate [IPBC], or N-octylisothiazolinone.

Recommended concentration for a combination of Preventol A8 Preservative and 3-iodo-2-propinylbutyl carbamate [IPBC] (2:1) in emulsion paints for exterior use:

- 0.3 - 0.8% of the combination (calculated on total solid content)

Recommended concentration for a combination of Preventol A8 Preservative and N-octylisothiazolinone (2:1) in emulsion paints for exterior use:

- 0.3 - 0.8% of the combination (calculated on total solid content)

Glues and Adhesives

GENERAL: Preventol A8 can be used for the formulation of preservatives intended for use in glues and adhesive formulations to prevent infestation by a wide variety of fungal organisms. With the use of Preventol A8, it is possible to protect both the post-application, wet stage and the dry film of such products against fungal attack. A long-lasting effect is secured, as Preventol A8 is practically non-volatile and insoluble in water.

Recommended use include, but are not limited to the following:

- casein containing adhesives, such as that used for labeling and books;
- starch-based glues typically used in wallpaper;
- dextrin adhesives;
- synthetic polymer-based adhesives, such as acrylic, styrene butadiene, and polyvinyl alcohol ; and
- animal glues, such as bone, skin and gelatin-based glues.

Recommended levels are 0.75 - 2.0% active ingredient based on the total weight of product to be protected

Note: Adhesives formulated for food packaging applications may require approval by the Food and Drug Administration.

Metalworking/Cutting Fluids

Preventol A8 can be used for the formulation of preservatives intended for use in metalworking/cutting fluids to prevent infestation by fungal organisms. Preventol A8 formulations will prevent fungal growth in aqueous-based metalworking, cutting cooling and lubricating fluids. Preventol A8 formulations prevent growth of mold-fungi. If supplementary protection against bacterial growth is required, Bayer Corporation recommends combination with a suitable bactericide.

Recommended Concentrations based on amount of Preventol A8 in formulation:

Metalworking fluids - Mineral Oil Based

Metalworking fluids (concentrates): 2.0 - 4.0%
4.0%
Metalworking fluids (ready to use): 0.1 - 0.2%
0.2%

Metalworking fluids - Non-Mineral Oil Based

Metalworking fluids (concentrates): 2.0 -
Metalworking fluids (ready to use): 0.1 -

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