



Effective: 02/07/01
Supersedes: 08/00/94

P - 0[®] PRESERVATIVE

Description

P-0 Preservative is effective against a wide variety of mold fungi and bacteria for the preservation of glues and adhesives, polymer emulsions (coatings, PVA systems and rubber), thickeners (starch, cellulose, guar, etc.), paper, textiles, dyes, temporary sapstain control for fresh cut lumber, concrete additives/masonry, metalworking fluids, air filter oils, starches, clay slurries, slurries, printing inks, graphite, and hard surface treatment products (polishes, waxes and ceramic glazes). The following guidance is given as an approximation for each use pattern, but field-testing is recommended to achieve optimum effectiveness.

Recommended Uses and Applications

Glues and Adhesives

P-0 Preservative can be dissolved in suitable solvent systems such as ethanol or 1,2-propanediol, or an alkaline homogeneous concentrate can be prepared and added to the substrate for the effective preservation of glues and adhesives. P-0 Preservative can be directly mixed until homogeneous into to dry glues before they are concentrated.

Recommended Dosages:

Albumin-Containing Glues	0.20 - 0.40%
Bone Glues	0.10 - 0.15%
Casein-Containing Adhesives	0.20 - 0.40%
Cellulose-Based Adhesives	0.10 - 0.30%
Dextrin-Based Adhesives	0.10 - 0.30%
Fish Glues	0.15 - 0.40%
Gelatin-Based Glues.....	0.15 - 0.30%
Leather Glues	0.15 - 0.40%
Plant Glues	0.10 - 0.25%
Polymer Dispersion-Based Adhesives	0.10 - 0.30%
Skin Glues	0.15 - 0.40%
Starch-Based Glues (Liquid).....	0.10 - 0.25%
Starch-Based Glues (Solid)	0.15 - 1.00%

Stains and Paints

P-0 Preservative is generally incorporated directly into pigments and fillers, but it can also be first dissolved in a suitable solvent or added directly to the pre-heated binder systems. For best results, the preservative should be homogeneously incorporated into the stain or paint. Discoloration may occur, and should be evaluated.

Recommended Dosages:

Alkyd Resin-Based Systems	0.25 - 0.50%
Casein-Systems	0.20 - 0.40%
Latex-Based Systems	0.15 - 0.25%
Oil-Containing Systems	0.25 - 0.50%
Synthetic Resin Dispersions.....	0.10 - 0.25%

Leather

P-0 Preservative may be dissolved in five times the amount of alcohol and then stirred into pickle solutions. In the case of chrome leather, an effective protection against mold attack may be obtained without additional labor by stirring P-0 Preservative together with soda into the basifying solution, since P-0 Preservative dissolves freely in the alkaline solution. The oil-soluble P-0 Preservative can also be dissolved in the fat liquor and applied in the drum simultaneously. Finished vegetable-tanned leathers and chrome leathers may also be protected against mold attack by a treatment on both sides of the material with a 0.2 - 0.4% solution of P-0 Preservative.

Recommended Dosages:

Chrome leather (calculated on pelt weight).....	0.10 - 0.25%
Leather pasting adhesives.....	0.05 - 0.10%
Leather pigment finishes	0.20 - 0.40%
Pickle solutions and pickled hides.....	0.15 - 0.25%

Textiles

P-0 Preservative should be dissolved in suitable solvents such as ethanol, 1,2- propanediol, mineral spirits, or paraffins or can be converted to a water dilutable alkaline concentrate and applied directly to the textile normally by dipping or spraying. The preservative is affixed to the fiber with a suitable acid like acetic acid. For the preservation of auxiliaries, P-0 Preservative is diluted in solvents as mentioned above or is homogeneously distributed with the aid of alkaline solutions or emulsion concentrates. Print thickeners are preserved by adding P-0 Preservative directly to the emulsion or homogeneously metered directly into the dried product. Milling may be necessary in order to obtain consistent particulate sizes.

Recommended Dosages:

Auxiliaries (Sizing Agents, Finishing Agents, Awnings and Tarpaulins	0.50 - 5.0%
Carpets	0.50 - 2.0%
Cotton Production	0.50 - 1.5%
Felts.....	0.50 - 2.5%
Fire Hoses	1.00 - 3.0%
Geotextiles	0.50 - 5.0%
Jute, Sisal	0.50 - 2.5%
Shower Curtains.....	0.50 - 2.0%
Spinning Preparations, Wetting Agents).....	0.05 - 0.25%
Upholstery.....	0.50 - 2.0%
Wool Production	0.50 - 1.5%

Temporary Sapstain Control for Fresh Cut Lumber and Other Lumber

P-0 Preservative is converted to alkaline liquid and water dilutable formulations by adding sodium hydroxide or other bases or by preparing emulsion concentrates of P-0 Preservative. Auxiliaries may also be added. For the temporary protection of freshly sawn lumber against staining and molding, P-0 Preservative solutions as prepared above are applied to the freshly sawn lumber by either dipping or spraying.

Recommended Dosages:

Construction Woods.....	1.0 - 4.0%
Fresh Cut Lumber	1.0 - 4.0%
Fruit and Vegetable Containers.....	1.0 - 3.0%
Pallets.....	1.0 - 3.0%

Dyes, Pigments and Filler Suspensions

P-0 Preservative should be evenly mixed with dispersing agents for processes where the temperature does not exceed 100°C. For all other processes, P-0 Preservative is metered directly into the material to be preserved during the cooling step after the temperature falls below 50°C and homogeneously distributed by stirring.

Recommended Dosages:

Calcium Carbonate Slurries	0.05 - 0.20%
Carbon Black Pigment Slurries	0.05 - 0.20%
Clay Slurries.....	0.05 - 0.20%
Iron Oxide Pigment Slurries.....	0.05 - 0.20%
Kaolin Slurries	0.05 - 0.20%
Organic Dyes and Pigment Slurries	0.05 - 0.20%
Other Filler Suspensions	0.05 - 0.30%
Starch Slurries	0.05 - 0.30%
Titanium Dioxide Pigment Slurries.....	0.05 - 0.20%

Polymer Dispersions and Emulsions

P-0 Preservative is added immediately after the preparation of the polymer dispersion or emulsion during the cooling process. Losses of active ingredient caused by elevated temperatures should be avoided. For homogeneous distribution, P-0 Preservative should be dissolved in suitable solvents such as ethanol, 1,2-propanediol, water dilutable alkaline solutions then added to emulsion concentrates or polymer dispersions.

Recommended Dosages (Polymer Dispersions and Emulsions):

Acrylic-Systems	0.05 - 0.30%
Other Polymer Dispersions	0.05 - 0.30%
Polyester-Based Systems	0.05 - 0.30%
Polyurethane-Based Systems	0.05 - 0.30%
Polyvinyl acetate (PVA) Systems	0.05 - 0.30%
Styrene Butadiene Systems	0.05 - 0.30%
VinyU Acrylic-Based Systems.....	0.05 - 0.30%

Lubricolants and Mineral Oil Based Products

P-0 Preservative is dissolved in the necessary amount of mineral oil, auxiliary (for example dispersing agent), solvents such as Ethanol, Glycols or water dilutable alkaline concentrates, and added to form a homogeneous mixture in the substrates (metalworking fluids, etc..) by stirring.

Recommended Dosages:

Mineral Oil-Based Products

Boring and Cutting Oils	0.05 - 0.20%
Cooling Fluids - Concentrate	1.00 - 5.0%
Ready for Use.....	0.05 - 0.25%
Fuel Oils.....	0.02 - 0.15%
Hydraulic Oils	0.05 - 0.25%

Non-Mineral Oil-Based Products

Cooling Fluids.....	0.05 - 0.30%
Cutting Oils.....	0.05 - 0.30%

Other Applications

Recommended Dosages:

Biopolymers (e.g. Xanthan)	0.05 - 0.20%
Caulking Materials	0.10 - 0.50%
Ceramic Glazes	0.10 - 0.50%
Chemical Cleaning Solutions	0.02 - 0.15%
Cleaning Solutions	0.05 - 0.40%
Concrete and Masonry Additives.....	0.10 - 0.30%
Concrete	0.10 - 0.50%
Fire Extinguishing Medium	0.10 - 0.30%
Paper Auxiliaries.....	0.05 - 0.30%
Paper Slurries	0.07 - 0.10%
Photographic Gelatins	0.05 - 0.25%
Plasters	0.10 - 0.50%
Polishes	0.05 - 0.20%
Rubber Systems.....	0.20 - 1.00%
Tints	0.05 - 0.20%
Wax Emulsions	0.05 - 0.40%

Activity

Minimum inhibition concentrations of O-Phenylphenol, determined on special nutrient media.

Microorganisms	Minimum Inhibition Concentration mg/liter
Aspergillus flavus Link	85
Aspergillus niger	30
Bacillus punctatus	200
Bacillus subtilis	100
Bacterium vulgare	100
Candida albicans	100
Chaetomium globosum	60
Cladosporium herbarum link and fries	60
Cladosporium sphaerospermum	40
Coniophora cerebella	30
Escherichia coli	200
Lentinus tigrinus.....	100
Leuconostoc mesenterioides	100
Penicillium citrinum.....	35
Penicillium digitatum	35
Penicillium funiculosum QECD F 10	75
Penicillium italicum	85
Polyporus versicolor.....	65
Pseudomonas aeruginosa.....	1500
Pseudomonas fluorescens.....	1500
Pullularia pullulans Fusey	35
Saccharomyces acidifaciens.....	200
Saccharomyces cerevisiae	200
Staphylococcus aureus	100
Torula rubra.....	100
Trichiphyton pedis	22
Trichoderma virile.....	75

Typical Properties

Physical Form	Flakes, colorless to light yellow with slight phonemic odor.
Composition	2-Phenylphenol, active ingredient content 99.9%
Density	1.2 g/cm ³
Bulk Density	0.60 – 0.65
Molecular Weight.....	170
Melting Point.....	56 –58°C
Boiling Point	286°C
Vapor Pressure	0.5 torr at 100°C
Flash Point.....	138°C
Solubility	(in g/100 g solvent at 25°C)
.....	Acetone 660
.....	Benzene 270
.....	Carbon Tetrachloride 105
.....	Ethanol 590
.....	Ether 490
.....	Ethylene Glycol 275
.....	Methanol 800
.....	NaOH, 10% 50
.....	Pine Oil 200
.....	Propylene Glycol 300
.....	Water 0.07
.....	White Spirit 20

Precautions and Handling

Pesticide Storage and Disposal

Pesticide Storage

Keep containers tightly and securely closed. Do not contaminate water, food or feed by storage and disposal. Store below 122°F (50°C). Protect from exposure to light and moisture. The product has a shelf life of at least two years if protected from light and moisture. The flakes agglomerate if the storage temperature is too high. See Verichem Material Safety Data Sheet for additional instructions.

Pesticide Disposal

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, 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.

Container Disposal

Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Health and Safety Information

Appropriate literature has been assembled which provides information pertaining to health and safety concerns that must be observed when handling Verichem products; appropriate industrial hygiene and other safety precautions recommended by their manufacturer should be followed. Before working with any product mentioned in this publication, you must read and become familiar with available information concerning its hazards, proper use and handling. This cannot be overemphasized. Information is available in several forms, such as Material Safety Data Sheets and Product Labels. Consult your Verichem Representative or contact the Product Safety Manager for the Industrial Chemicals Division within Verichem's Product Safety and Regulatory Affairs Department.

Government Approvals

FDA	175.105	(Adhesives) for use as a preservative in the manufacture of complying adhesives
	176.210	(Defoaming agents used in the manufacture of paper and paperboard)
	177-1632	(Poly (phenyleneterphthalamide) resins) for use as a fungicide, not to exceed 0.01 wt % based on the base polymer
	177.2600	(Rubber articles intended for repeated use) for use as an antioxidant and antiozonant, total antioxidants and antiozonants not to exceed 5 wt % of rubber product
	178.1010	(Sanitizing solutions) for use in sanitizing specifically listed in 178.1010

Availability

P-0 Preservative is available in commercial quantities

Standard Packing.....	55 pound Paper Sack
Shipping Weight	55.9 pounds
DOT Shipping Name.....	Not Regulated

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