PHYSAN 20®

COMMERCIAL GREENHOUSE & NURSERY PATHOGEN CONTROL PROTOCOL

> In commercial horticulture, profitability is dictated by two factors: input costs and crop shrink. While generic surface disinfectants are often viewed as a commodity expense, smart operators look at the raw chemistry analytics. **Physan 20®** delivers a multi-action, highly concentrated biocide formulation specifically engineered to protect commercial facilities from devastating plant pathogens without forcing unnecessary worker downtime.

THE PURE ECONOMICS: STOP SHIPPING WATER

Many competitive horticultural disinfectants are marketed as specialized tools but are formulated at a lower 7.5% active ingredient concentration. This means commercial distributors and growers are spending vital capital shipping, storing, and handling 92.5% inert ingredients—predominantly water.

Physan 20® features a full **20.0% active quaternary ammonium concentrate**. Because it is 2.66 times more concentrated than 7.5% formulas, you use less than half the liquid volume to achieve the exact same pathogen-killing parts-per-million (PPM) concentration in your lines, instantly slashing freight expenses, saving warehouse footprint, and optimizing labor efficiency.

MASTER COMMERCIAL APPLICATION RATES

APPLICATION TARGET	PHYSAN 20® RATE	DILUTION RATIO	PATHOGENS / TARGET ACTION
Hard Surface Disinfection & Work Tools	1 Tablespoon (0.5 fl. oz.) per gallon of water	1 : 256 (775 PPM)	Benches, flats, concrete floors, glazing, glazing clips, potting tables, and plastic pots. Dip/spray tools between plants to prevent cross-contamination.
Evaporative Coolers	1 Teaspoon per 15 gallons of water	1 : 11,500 (~17 PPM)	Controls algae, slime-forming fungi, and bacterial odors on cooler pads.
Foliar / Ornamental Spray	2 Teaspoons per gallon of water	1 : 384 (515 PPM)	Direct crop application for active control of Powdery Mildew, Black Spot, Botrytis, and Downy Mildew. Safe on sensitive ornamentals.
Continuous Chemigation & Water Lines	0.13 to 0.45 fl. oz. per 100 gallons of water	Custom Injector (2 to 7 PPM)	Injected into main lines to dissolve irrigation biofilm, prevent algae accumulation, and mitigate water-borne Pythium and Phytophthora.
Algae Control (Walkways & Glass)	1 Tablespoon (0.5 fl. oz.) per gallon of water	1 : 256 (775 PPM)	Removes hazardous slip-and-fall algae hazards on walkways and restores light transmission on dirty greenhouse glass.

THE 2-STEP FACILITY SANITATION SOP

Disinfectants are rapidly neutralized by organic debris like soil, peat moss, and plant sap. To maximize the chemical potential of Physan 20®, instruct your teams to execute a simple, two-step structural reset between crops:

STEP 1: PHYSICAL CLEAN & ORGANIC STRIP

Power-wash or sweep benches and floors to remove loose soil and organic media. Use a heavy-duty industrial cleaner or detergent to strip stubborn biofilms and organic buildup from surfaces. Rinse thoroughly with clean water.

STEP 2: NO-RINSE PHYSAN 20® APPLICATION

Apply Physan 20® at the 1:256 rate (1 Tbsp/gal) using a low-pressure sprayer until hard, inanimate surfaces are thoroughly wet. Allow 10 minutes of wet contact time for complete pathogen sanitation. Do not rinse. Let the surfaces air-dry to leave a residual protective barrier.

DEMYSTIFYING THE RESTRICTED ENTRY INTERVAL (REI)

Regulatory compliance can easily choke operational efficiency if labels are misunderstood. While concentrated QACs carry the mandatory DANGER signal word on the stock jug due to raw eye corrosivity, the Worker Protection Standard (WPS) rules are entirely dependent on how and where the product is applied at use-dilution.

0-HOUR REI APPLICATIONS

WPS rules only govern pesticides applied directly to agricultural plants. Disinfecting empty benches, equipment, tools, concrete floors, and walkways falls outside agricultural use criteria, meaning workers can return to the space immediately upon drying. Continuous sub-irrigation dosing (2-7 PPM) similarly qualifies for uninterrupted labor access.

12-HOUR FOLIAR OVERHEAD SCOPE

When applied via heavy overhead boom sprayers or automated crop misters directly onto live foliage at curative rates, it creates a temporary exposure hazard. Always coordinate overhead spray schedules with shift breaks or weekends to safely manage your 12-hour foliar entry window while maintaining complete control.

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