



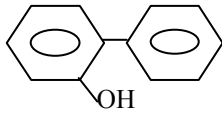
VERICHEM

TECHNICAL DATA SHEETS

VERIGUARD PLUS

EPA Registration No. 67869-44

DESCRIPTION	VeriGuard Plus is a patented (U.S. Patent Pending) active solution of 30% Dodecylguanidine Hydrochloride (DGH) in Dipropylene Glycol/Propylene Glycol. DGH is a non-oxidizing, liquid, nitrogen-based biocide for use in aqueous industrial systems as a broad spectrum preservative, effective in controlling bacteria, yeast and fungi. The product also contains OPP, which improves pH and temperature stability. The formulation is a synergistic blend of actives that imparts superior microbiological performance.
-------------	---

STRUCTURE / FORMULA	Chemical Name: DODECYLGUANIDINE HYDROCHLORIDE Molecular Formula: C ₁₃ H ₂₀ N ₃ Cl Molecular Weight: 253.5 $\begin{array}{c} \text{NH} \\ \\ [\text{CH}_3 - (\text{CH}_2)_{11} - \text{NH} - \text{C} - \text{NH}_2] \cdot \text{HCl} \end{array}$ CAS#: DGH: 13590-97-1	ORTHO PHENYLPHENOL C ₁₂ H ₁₀ OH 170  OPP: 90-43-7
------------------------	---	--

BENEFITS	APPLICATION BENEFITS <ul style="list-style-type: none">▪ Synergistic blend of DGH and OPP▪ Broad spectrum effectiveness against bacteria, yeast and fungi▪ Stable over a broad pH range▪ Stable at temperatures ≤ 65^o C▪ Cost effective against bacteria, yeast and fungi▪ Does not release formaldehyde▪ Effective at low concentrations▪ Compatible with many antimicrobials▪ Easy handling liquid formulation▪ Extremely effective for controlling sulfate reducing bacteria▪ Non-corrosive to metallurgy at use concentrations▪ Non-oxidizing: will not be consumed by reducing substances in water
----------	--

APPLICATION DATA	To inhibit the growth of microorganisms in aqueous systems, dosage ranges from 25 to 1,000 ppm are suggested. Exact levels will depend on the components, storage time, temperature, microorganism, and should be determined through laboratory testing.
---------------------	--

TYPICAL PROPERTIES	APPEARANCE AND ODOR: Clear to hazy yellow liquid with glycol odor BOILING POINT: 226 ^o F / 108 ^o C MELTING POINT: Not Applicable VAPOR PRESSURE: Not Applicable SPECIFIC GRAVITY 25^o C: 1.035 g/ml VAPOR DENSITY: Not Applicable PERCENT VOLATILE (BY WEIGHT): 65% pH: Apprx. 4.5 (1% w/w) SATURATION IN AIR (PERCENT BY VOLUME): Not Applicable EVAPORATION RATE: Similar to water SOLUBILITY IN WATER: Complete
-----------------------	---

STORAGE AND DISPOSAL	<p>VeriGuard Plus is stable. All chemicals should be stored in a manner to protect them from extremes of heat or cold, and are best if used within six months from the time of receipt. In laboratory studies the product has been found to be chemically stable under the following conditions:</p> <p>2 years at 25°C 14 days at 50°C 14 days at 4°C 3 freeze thaw cycles from -10 to 22°C</p> <p>In long-term storage, a slight precipitate sometimes forms. Studies have proven this is not the active ingredient, and performance is unaffected.</p> <p>Do not contaminate water, food or feed by storage or disposal. Keep away from heat and open flame. Keep container closed.</p> <p>Biocide 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 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.</p>
----------------------	--

REGISTRATIONS AND APPROVALS	<p>VeriGuard Plus has a pending registration with the U. S. Environmental Protection Agency (EPA Reg. No. 67869-44) as an end-use product for the control of algae, bacteria, fungi, and mollusks in a wide range of commercial and industrial processes and material preservations.</p> <p>FDA approval under 21 CFR (Refer to the Code for applicable limitations).</p> <table data-bbox="358 751 673 871"> <tr> <td>DGH</td> <td>OPP</td> </tr> <tr> <td>176.170</td> <td>175.150</td> </tr> <tr> <td>176.180</td> <td></td> </tr> <tr> <td>176.300</td> <td></td> </tr> </table> <p>DGH has German BGVV under Recommendation Number 14/36.</p> <table data-bbox="358 909 1047 997"> <tr> <td>HMIS Rating: *</td> <td>Health</td> <td>=</td> <td>3</td> </tr> <tr> <td></td> <td>Flammability</td> <td>=</td> <td>1</td> </tr> <tr> <td></td> <td>Reactivity</td> <td>=</td> <td>0</td> </tr> </table> <p>Personal Protective Equipment = X (to be specified by user depending on use conditions).</p> <p>* Hazard Rating Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe</p>	DGH	OPP	176.170	175.150	176.180		176.300		HMIS Rating: *	Health	=	3		Flammability	=	1		Reactivity	=	0
DGH	OPP																				
176.170	175.150																				
176.180																					
176.300																					
HMIS Rating: *	Health	=	3																		
	Flammability	=	1																		
	Reactivity	=	0																		

SAFETY	<p>EYE PROTECTION REQUIREMENTS: Chemical splash goggles and face shield or shielded safety glasses.</p> <p>SKIN PROTECTION REQUIREMENTS: Chemical resistant gloves and protective clothing worn over long-sleeved shirt and long pants and socks. Remove and wash clothing before reuse. Launder clothing separately from household articles. Replace gloves frequently. Any clothing which has been drenched or heavily contaminated and used gloves must be disposed of in accordance with state and local regulations.</p> <p>VENTILATION REQUIREMENTS: Use local exhaust ventilation where dust or vapor may be generated.</p> <p>RESPIRATOR REQUIREMENTS: For irritating vapors, use a NIOSH approved respirator in accordance with OSHA regulations. Use a respirator with an organic vapor removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approved number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH) approved number prefix TC-14G), or a NIOSH approved respirator with an organic vapor (OV) cartridge or a canister with any N,R,P, or HE prefilter.</p>
--------	---

PACKAGING	<p>5 Gallon Pail: 40 lb (D) 55 Gallon Drum: 450 lb (P) 275 Gallon Tote: 2300 lb (V)</p>
-----------	---



For more information call: 1 800 778-5462 • FAX 1 412 331-7884
Or write VERICHEM, 3499 Grand Avenue, Pittsburgh, Pennsylvania 15225

C H E M I C A L S O L U T I O N S F O R M I C R O B I O L O G I C A L P R O B L E M S