

LACTROL® versus Chlorine Dioxide: Make the right choice for Today and Tomorrow.

Choosing the Best Tools for Infection Control.

There are many things to consider in choosing the best tools for infection management in ethanol plants. Ethanol producers require a means to control infection outbreaks, from early detection and containment to determining the best solution for the problem. Choosing the best tools for infection control involves careful thought and consideration of several important risks and implications.

	LACTROL	Chlorine Dioxide
Infection Control	<ul style="list-style-type: none"> Decades of proven efficacy. LACTROL antimicrobial is typically dosed at 0.5-1.0 ppm and selectively kills Gram +ve infecting bacteria. Yeast health is unaffected by any dosing level of LACTROL antimicrobial. 	<ul style="list-style-type: none"> An unproven technology in ethanol production. Effective in killing bacteria when properly dosed. Creation of chlorine dioxide in a fermenter via sodium chlorite is not well understood. Overdosing will kill or impair yeast health, resulting in lower ethanol yield.
Fuel Quality	<ul style="list-style-type: none"> No negative impact to fuel quality. 	<ul style="list-style-type: none"> Chlorine dioxide decomposes to chlorides and oxygen. Potential for higher chloride levels in denatured ethanol.
Regulatory & Safety	<ul style="list-style-type: none"> FDA letter of “regulatory discretion” and CFIA approval for use in ethanol plants and DDGs can be used in animal feeds. Virginiamycin (VM), the active ingredient in LACTROL, has been studied extensively for animal, human and environmental risks and found to be safe. Low toxicity; however, repeated exposure can cause an allergic reaction over time. 	<ul style="list-style-type: none"> Chlorine dioxide is an acutely hazardous and unstable gas and is highly explosive at 10-15% concentrations. Sodium chlorate/chlorite are explosion and fire hazards. Chlorites are considered to be aquatically toxic and the EPA has established a 1 ppm limit in water.
Equipment Safety	<ul style="list-style-type: none"> LACTROL antimicrobial is safe for construction materials used in ethanol plants. No known corrosion issues when dosing with LACTROL. 	<ul style="list-style-type: none"> Chlorine dioxide is an oxidizing agent and its corrosion potential on various metals is well documented and understood. Independent laboratory studies on corn mash treated with chlorine dioxide demonstrated pitting attack and corrosion rates on 304 and 316 SS. SS surfaces that experience high temperatures and/or parts that are welded and not stress relieved (most components in ethanol plants) are more vulnerable to corrosion attack.
How is it made?	<ul style="list-style-type: none"> Virginiamycin (VM), the active ingredient in LACTROL, is a natural fermentation by-product. LACTROL contains no chemically modified materials. LACTROL is manufactured by Phibro Animal Health Corporation and is supplied in easy to use, pre-measured packaging. 	<ul style="list-style-type: none"> Produced with either a generator or a 5% sodium chlorite solution added to a fermenter. When produced on site using sodium chlorate, hydrogen peroxide is also needed.



A Division of Phibro Animal Health Corporation, 65 Challenger Road, Third Floor, Ridgefield Park, NJ 07660
www.lactrol.com • 1-800-223-0434 • 201-329-7300 • Fax 201-329-7034

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