

OP Port contains highly active “reactive lignins” with 7 to 9 carbon and oxygen open bonding sites per molecule. The complexed lignin reactive surface structure is estimated at 900,000 square meters per kilogram and an enormous negative cation exchange capacity of 1500 to 3000 moles per kilogram. These active sites function as a macromolecular sponge, adsorbing and binding (capturing) potentially odorous and harmful compounds such as Hydrogen Sulfide and Ammonia.

Lignin has also been shown in the laboratory to have an impressive effect in suppressing bacterial growth. In an experimental study, (Nelson et al.) Analyzed the effect of lignin on the growth of bacteria after incubation of 0,2,4,8 and 24 hours in vitro and obtained the following results:



	Hours of Incubation				
	0	2	4	8	24
Lignin					
S. aureus	1.0×10^3	8.0×10^2	0	0	0
E. coli	2.3×10^3	5.0×10^1	0	0	0
Klebsiella	3.4×10^2	3.7×10^2	2.0×10^3	0	0
Pseudomonas	3.6×10^2	3.8×10^2	0	0	0
Without Fiber					
S. aureus	$9.0 \times 10^{+2}$	4.4×10^3	6.6×10^4	1.7×10^8	1.3×10^9
E. coli	1.7×10^3	2.3×10^4	9.0×10^5	3.3×10^9	3.3×10^9
Klebsiella	1.2×10^3	7.3×10^3	1.6×10^6	1.4×10^8	7.1×10^8
Pseudomonas	8.5×10^2	2.0×10^3	2.9×10^4	9.0×10^8	2.2×10^9

This is a green product. Certified Organic by the USDA and created under the EPA's "Designed for the environment" program. Unlike many of our competitors products, which are based on enzymes or formaldehyde, our product gets rid of odors, breaks down solids AND improves the performance of any wastewater plant the effluent is then sent to.

Works better than anything else. Originally designed over two decades ago for use in wastewater treatment plants and sewage systems, this powerful product encapsulates all the Hydrogen Sulfide, Ammonias and other odor causing substances, eliminating all odors.

Easier to use than any other product. You pour in 1.25 gallons of **OP Port** per 500 gallons of vault capacity after each time the vault is pumped out. The vault can then fill to the very top without any odor issue whatsoever. You NEVER have to add additional product.

Less expensive to use than any other product. Our per gallon price is competitive with our competition, but over time you will use so much less of this product that you will experience significant savings over our competition.

Flexible for other uses. Besides vault toilets, it can be used in pit and composting toilets, RV dump stations and wastewater lift stations. Diluted 1:7 with water in a backpack sprayer it can be used to solve any biological odor issue including dumpsters, organic spills, and animal decomposition odors.

Proven in the field. **OP Port** has been used extensively at a large number of National Park Service locations as well as by the Forest Service and the Bureau of Land Management.

