ORC TECHNICAL BULLETIN #2.3.5

Oxygen Release Compound, ORC®

Uses in Odor Control

ORC can be used to inhibit and neutralize odors associated with chemically reduced environments. For example, hydrogen sulfide (H_2S) is generated by microorganisms that thrive in anaerobic, reducing conditions. Other reduced forms of sulfur, such as mercaptan, as well as reduced forms of nitrogen are also sources of noxious odors.

The redox potential is a measure of the state of reduction of oxidation in the system; highly reduced environments as those described have a low redox potential. ***Incorporation of ORC into the impacted environment raises the redox potential to levels that are inhibitory to the organisms that generate the odorous compounds.*** Also, there is potential for the direct neutralization of hydrogen sulfide by a reaction with the ORC.

A study conducted IT Corporation, which was presented at the Annual Meeting of the American Chemical Society in 1992, showed that ORC could be used to reduce sulfide odors in large open lagoon areas in the San Francisco Bay region. In this study, the sulfide content was reduced from 7000 ppm to 1400 ppm with the use of an ORC suspension of only 1.4 g/L.

In another study by Schrader and Associates, sulfides were significantly reduced with the application of .4% wt./wt. to sewage treatment sludge, at the municipal facility in Mt. View, CA. ORC had an advantage over higher pH treatments, by limiting ammonia release and carbonate precipitation.

One possible application of Regenesis' ORC filter socks is in preventative maintenance for sewer lines. When hung in the line, the ORC filter socks can inhibit the corrosion in regions of the pipe which are exposed to acidic gases generated by sulfides.

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