**Aktivox®**

**Odor Control**

**Introduction**
Aktivox® is a proprietary, powerful, non-chlorinating oxidant that effectively controls odors and corrosion associated with wastewater collection and treatment. Aktivox® reacts virtually instantaneously with sulfides, and other odorous compounds, making it an ideal deodorizer for both solids pressing operations, wastewater pump stations, ponds, and lagoons. As an added benefit, Aktivox® provides residual odor control that lasts for hours after addition. (Figure C)

**Application Description**
Sulfides are produced by both biological and chemical action. They are produced biologically by anaerobic bacteria and chemically by many industries including the chemical, petroleum, paper, and textile industries.

Many systems provide an environment that can promote the growth of a healthy biological community. Hydrogen sulfide formation in wastewater systems occurs primarily in the gelatinous slime layer (biofilm) that accumulates on pipe walls and in the sludge blankets of clarifiers and other solids processing units. The rate of sulfide production is dependent upon the concentrations of sulfate ions, organic matter, and dissolved oxygen, as well as other factors such as pH, temperature, retention-time, stream velocity, and surface area.

Hydrogen sulfide is naturally converted to sulfuric acid, which is corrosive towards steel and concrete, therefore its control results in increased life and lower maintenance cost for facilities and piping. In addition, worker safety is of concern as hydrogen sulfide is extremely toxic at levels above 500 ppm, which can be reached in confined spaces.

**Treatment Alternatives**
Sulfide can be removed from a system by precipitation with iron or by oxidization. Various oxidizers including chlorine, hydrogen peroxide, and potassium permanganate are commonly used for oxidation of sulfide. Different treatment strategies are required depending on the application. Aktivox® is preferred where alternative oxidants are not effective such as when rapid destruction of sulfide is important (Figure B), or the formation of halogenated byproducts prevents treatment with chlorine.

Aktivox® reacts preferentially with hydrogen sulfide to form elemental sulfur (Figure A). Aktivox® will form soluble sulfate if applied in excess.

**Further Information:**
OxyChem Technical Service Department
6200 S. Ridge Rd.
Wichita, KS 67215
(800) 733-1165 ext. 1
OxyChem_Tech_Service@oxy.com
Figure A: Chemical Reaction

\[ 2\text{H}_2\text{S} + \text{Aktivox}\® \rightarrow 2\text{S}^0 + 2\text{H}_2\text{O} + \text{NaCl} \]

Neutral pH

Hydrogen Sulfide

Elemental Sulfur

Water

Sodium Chloride

Figure B: Speed of Reaction

Chlorine/Hypochlorite
Potassium Permanganate
Aktivox®
Iron Salts
Hydrogen Peroxide
Nitrates

Figure C: Duration of Control

Chlorine/Hypochlorite
Potassium Permanganate
Hydrogen Peroxide
Iron Salts
Nitrates
Aktivox®

Important: The information presented herein, while not guaranteed, was prepared by technical personnel and is true and accurate to the best of our knowledge. NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, OR WARRANTY OR GUARANTY OF ANY OTHER KIND, EXPRESS OR IMPLIED, IS MADE REGARDING PERFORMANCE, SAFETY, SUITABILITY, STABILITY OR OTHERWISE. This information is not intended to be all-inclusive as to the manner and conditions of use, handling, storage, disposal, and other factors that may involve other or additional legal, environmental, safety or performance considerations, and Occidental Chemical Corporation assumes no liability whatsoever for the use of or reliance upon this information. While our technical personnel will be happy to respond to questions, safe handling and use of the product remains the responsibility of the customer. No suggestions for use are intended as, and nothing herein shall be construed as, a recommendation to infringe any existing patents or to violate any Federal, State, local or foreign laws.