## OS

**Oxygen Scavenger**

### Product Description
OS oxygen scavenger is an ammonium bisulfite solution used to remove entrained oxygen from drilling and completion fluids. It functions as a corrosion inhibitor by removing oxygen from the drilling or completion fluid while circulating.

### Typical Physical Properties
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical appearance</td>
<td>Yellow liquid</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1.3 - 1.4</td>
</tr>
<tr>
<td>pH (1% Solution)</td>
<td>4.5 - 5.5</td>
</tr>
</tbody>
</table>

### Application
OS oxygen scavenger is suitable for use in freshwater and monovalent brines. Use in divalent brines is not recommended due to formation of insoluble calcium sulphite / zinc sulphite. OS also acts as a polymer extender ensuring the efficacy of polymers in high temperature.

### Advantages
- Reduces corrosion risk by eliminating dissolved oxygen and extends life of downhole equipments
- Extends the maximum application temperature range of commonly used fluid-loss-control and viscosifying polymers by up to 20°F (11.1°C)
- Is a fast-acting, concentrated product that functions at low levels

### Limitations
- OS is sensitive to calcium content in the fluid. Hardness must be kept below 2,000 mg/L
- OS plus oxygen gives ammonium sulphate plus sulphuric acid. The pH falls as a result of the reaction and must be maintained by the addition of caustic soda within the range of 9.0 to 9.5. If the pH is above 10, ammonia gas may be released from the drilling fluid. Avoid very high pH levels. OS should not be added to containers with caustic soda. This will release ammonia gas and can cause an explosion
- OS is incompatible with glutaraldehyde-base biocides

### Recommended Treatment
OS is injected at a rate of between 1 and 2.5 gal (3.8 and 9.5 L) per hour at the pump suction that permits injection into the downhole fluid with minimal atmospheric contact. This is important because the ammonium bisulfite would be rapidly spent by atmospheric contact. The desired excess sulfite content is 100-300 mg/L at the flow line. This level assures that there is sufficient sulfite in the drilling fluid to remove oxygen to the desired low level.

### Toxicity and Handling
Handle as an industrial chemical, wearing protective equipment and observing the precautions described in the Material Safety Data Sheet (MSDS).

### Packaging and Storage
OS-P is packaged in 5-gal (18.9-L) cans and 55-gal (208-L) drums.
Store in dry location away from sources of heat or ignition.

---

Important Note: These suggestions and data are based on information we believe to be reliable. They are offered in good faith, but without guarantee, as conditions and method of use of our product are beyond our control. We recommend that the prospective user determine the suitability of our material and suggestions before adopting them on a commercial scale.