## Lubrizol's ENVIROHIB™ Acid Corrosion Inhibitors are an Eco-Friendly Solution for Acid Spearhead Washing and Acidizing Well Stimulation Applications.

## **Optimized Acidizing Solutions**

Lubrizol's ENVIROHIB<sup>TM</sup> series features acid corrosion inhibitors proven to inhibit corrosion on various metal types and in varying acid concentrations and well temperatures. Our product offering provides a safe handling solution with formulations that are more environmentally friendly than traditional corrosion inhibitors.

- > Non-flammable
- > Do not contain BTEX, Nonylphenol, DMF, arsenic or acetylenic alcohol

With our extensive laboratory capabilities, Lubrizol provides optimized acid corrosion solutions to support customer applications.

Product	Features and Benefits	Dosage
NEW ENVIROHIB™ 3-in-1	<ul> <li>Thiourea polymer based corrosion inhibitor.</li> <li>Multi-functional corrosion inhibitor, iron control agent, non-emulsifier and anti-sludging agent.</li> <li>Effective up to 300°F (149°C) without an intensifier.</li> </ul>	Acid spearheads. 0.25-10 gal/1000 gallons acid
ENVIROHIB™ 600	<ul> <li>Quinoline quat, blended with synergistic surfactants and acetylenic alcohol replacement.</li> <li>Performs well in HCl and HCl-HF acid conditions up to 300°F (149°C).</li> <li>Requires low dosage rates of intensifier in high acid concentrations.</li> </ul>	Acidizing & acid spearheads. 0.25-20 gal/1000 gallons acid
ENVIROHIB™ 2001	<ul> <li>Thiourea polymer based corrosion inhibitor.</li> <li>Performs well in both organic and inorganic acid conditions.</li> <li>Highly effective in 7.5% HCl.</li> <li>Does not have import restrictions into Canada.</li> </ul>	Acidizing & acid spearheads. 0.5-20 gal/1000 gallons
ENVIROHIB™ HT	<ul> <li>Thiourea polymer based corrosion inhibitor.</li> <li>High temperature corrosion inhibitor for well temperatures greater than 250°F (121°C).</li> <li>Does not require an intensifier in well temperatures up to 275°F (135°F).</li> </ul>	Acidizing & acid spearheads. 4-20 gal/1000 gallons



## **Acidizing Products**

In addition to acid corrosion inhibitors Lubrizol offers complementary acidizing additives.

Our products include:

- > Emulsfiers
- > Anti-Sludging Agents
- > Iron Control Agents
- > Non-Emulsifier Surfactants
- > Hydrogen Sulfide Control

Product	Features and Benefits	Dosage
AI 600	Quinoline quat, blended with synergistic surfactants and acetylenic alcohol replacement.     Effective in low and higher temperature applications.	Acid corrosion inhibitor. 0.25-20 gal/1000 gallons acid
AE-8	<ul> <li>Polyolefin amide alkeneamine acid emulsifier.</li> <li>Used to prepare high acid internal phase emulsions with xylene, diesel and mineral oil to retard the rate of reaction for deeper penetration of live acid into the formation.</li> </ul>	Acid emulsifier. 2-10 gal/1000 gallons of total emulsified fluid
AS-10	<ul> <li>Anionic, surfactant based anti-sludge additive.</li> <li>Prevents asphalt sludge and emulsions when treating with HCl acid.</li> <li>Promotes rapid return of the treating fluid to the wellbore on flowback.</li> </ul>	Anti-sludging agent. 1-5 gal/1000 gallons acid
ICA 400	<ul> <li>Organic liquid salt solution iron control agent.</li> <li>Prevents the precipitation of iron by sequestering both ferric and ferrous iron into a soluble and stable colloidal suspension.</li> </ul>	Iron control agent. 0.5-10 gal/1000 gallons acid
NE 40	<ul> <li>Nonionic non-emulsifier surfactant.</li> <li>Prevents the formation of emulsions within a broad range of crude oils and condensates.</li> <li>For use in cost effective treatments where a low freeze point is not required. Freeze point is 23°F (-5°C).</li> </ul>	Non-emulsifier. 0.5-1 gal/1000 gallons acid
SULFA-CLEAR™ 8640	<ul> <li>Aqueous, cyclic tertiary amine polymer sulfide scavenger for acidizing applications.</li> <li>5% scavenges 0.104 lbs/gallon pure H<sub>2</sub>S in 15% HCl.</li> <li>9% scavenges 0.0567 lbs/gallon pure H<sub>2</sub>S in 28% HCl.</li> </ul>	H <sub>2</sub> S scavenger. 50-90 gal/1000 gallons acid



The Lubrizol Corporation www.lubrizol.com

