



# Lubrizol Drilling Fluid Additives

## Application Guide

Product Name	Chemical Type	Key Function	Primary Application
<b>Lubricants and Dispersants</b>			
LUBRIZOL® 2260	Zinc dialkyldithiophosphate (ZDDP)	Lubricant enhancer/booster.	Especially effective in silicate and other water-based systems. Used to reduce torque and drag. Used to increase ROP, especially in horizontal and directional wells. Typically added to the primary lubricant at 5-20%. Lubricant blend is then added to the drilling fluid at 1-5%.
LUBRIZOL® 2632B	Polyolefin amide alkeneamine	Dispersant/wetting agent.	A succinimide-type agent for use in oil-based systems when stable water-in-oil emulsions are needed. Typical treat rate is 5 - 15 pounds per barrel.
LUBRIZOL® 2634	Polyolefin amide alkeneamine	Environmentally friendly dispersant/wetting agent.	Viscosity reducer for oil-based high solids drilling muds. Increases the solids carrying capacity of the mud while maintaining rheological properties. Typical treat rate is 0.25 - 2 pounds per barrel.
LUBRIZOL® 5340G	Sulfurized olefin	Extreme pressure agent/lubricant	For use in oil-based systems. Synergistic with synthetic ester lubricity agents and extreme pressure chemistries including overbased sulfonates and phosphate esters. Can also be formulated for use in brine systems. Typical treat rate is 3 - 5%.
ClayGuard™ E	Blend of amine salts	Provides both temporary and permanent clay control protection.	Typical concentration range is 1 - 4 gal/1000 gallons.
<b>Corrosion Inhibitors</b>			
ALPHA 2090	Cocoamine diquatary ammonium chloride	Used to formulate corrosion preventives; can also be used as a water-injection-system surfactant, water clarifier, and anti-foulant.	Oil well drilling, completion, production, and water flood systems.
ALPHA 2296	Potassium salt of an alkyl phosphate ester	Corrosion preventative that controls general and pitting corrosion for oxygen, hydrogen sulfide and carbon dioxide.	For use in water-based drilling systems. Optimal treatment will vary depending on the application. Typical treat rate is 500-2,000 ppm.
<b>Foamers</b>			
CWF 211	Alcohol ether sulfate blend	All purpose air foam drilling surfactant.	Foams in fresh water, saturated brines and in the presence of oil contamination. Typical concentration range is 1 gal per 1000 gallons.
CWF 311	Alcohol ether sulfate blend	Foam fracturing - in nitrogen generated foam to provide sand transport and fluid loss control. Air foam drilling - as an aid in removing water and drill cuttings from the wellbore. Effective temperature range up to 350°F (177°C).	Foams in fresh or hard water, saturated brines and in the presence of oil contamination. Typical concentration range is 1 gal per 1000 gallons.
CWF 511	Alcohol ether sulfate blend	Used in underbalanced drilling applications to generate a foam drilling fluid that tolerates salt to 12% and a small amount of oil contamination.	Highly effective fresh water foaming agent. Typical concentration range is 1 gal per 1000 gallons.
<b>Emulsifiers</b>			
ALPHA 6017	Alkanolamide	Invert emulsifier/EP lubricant/oil-soluble dispersant and solubilizer.	For use in oil-based systems. Optimal treatment will vary depending on the application. Typical concentrations of 1-3% in the oil phase, based on total emulsion.
ALPHA 6332	Alkanolamide and fatty acid blend	Secondary emulsifier in invert emulsion drilling fluid systems. Can be used as a primary emulsifier.	For use in diesel, low toxic oils and synthetic-based fluids. Optimal treatment will vary depending on the application. Typical concentration range is 2 - 10 pounds per barrel.