



TECHNICAL DATA LITHO-BAC™ FOR THE CONTROL OF SCALE

General Description

Litho-Bac™ is a proprietary combination of natural, facultative anaerobic biologicals and biochemicals used in oil well operations to inhibit scale formation. Litho-Bac™ has some corrosion inhibition properties. Scale formation is inhibited through metabolic by-products of Litho-Bac™, including alcohols, ketones, organic acids, and biosurfactants. Litho-Bac™ also has a limited ability to disperse, dissolve, and prevent paraffin deposition.

Application of Litho-Bac™ protects the formation face, as well as downhole and surface equipment from scale deposition by sequestering and chelating major cations, such as calcium, magnesium, and barium. Some by-products of metabolism, the ketones and organic acids, are chelating agents that can inhibit the scale crystallization process. This is accomplished by bonding with the cation and preventing it from bonding with the anion to form an insoluble scale. This is similar to the process by which chemical inhibitors work. Litho-Bac™ further protects equipment with biosurfactants that remove previously deposited solids, which cause under deposit corrosion.

Product Specifications

Color	greenish brown
pH	6.5-8
Weight per Gallon	8.51 lbs
Specific Gravity	1.02
Freeze Point	32°F
Viscosity	1.30 cps - 60°F
Odor	mild

Application

Litho-Bac™ comes as a ready-to-use liquid formulation and can be introduced to the well by batch or squeeze treatments. Batch treatments usually involve the product being applied to the annulus and flushed with clean lease or fresh water. For optimum performance, it is recommended that the well be shut in for one to three days after treatment; however, this is not mandatory.

Treatment begins with an inoculation to establish the bacterial population of the well system. Thereafter, at predetermined intervals, maintenance doses of Litho-Bac™ can be added to maintain the colony of bacteria.

Squeeze treatment applications are a function of fluid production, porosity, perforation interval, and desired depth of penetration. The well is shut in for three to seven days.

Handling and Safety

Litho-Bac™ meets EPA requirements for release into the environment. Special clothing or equipment is not required for handling Litho-Bac™. Routine sanitary hygiene practices should be observed.

Shipping

Litho-Bac™ is shipped in two sizes: in 5-gallon containers (45 lbs), and in 55-gallon containers (495 lbs), F.O.B. Round Rock, Texas.

Services

Micro-Bac International, Inc.® offers technical support and services to optimize production through the use of our products.