



# TECHNICAL DATA

## PARA-BAC™, PARA-BAC X™ PARA-BAC XX™, & PARA-BAC S™ For The Control of Paraffin & Scale

### General Description

Para-Bac is a proprietary combination of natural, facultative anaerobic biologicals and biochemicals used in oil well operations to control paraffin chains of length C16 and above while also controlling scale formation and deposition. Para-Bac can disperse, dissolve, and prevent paraffin deposition through its metabolic by-products, including alcohols, ketones, organic acids, and biosurfactants. These same metabolic by-products also act to inhibit scale formation. Para-Bac products are targeted to, but not limited to, solubilizing different length paraffin chains, described as follows:

Product	PB	PBX	PBXX	PBS
Chain	C16-22	C16-40	C40-58	C45-60+

These products are often used in combination for optimum performance.

Application of Para-Bac can result in cleansing of the formation face, production string, flow line, production vessels, and tanks. Para-Bac also increases the oil's ability to dissolve paraffin while decreasing its cloud point/pour point. Reservoir permeability in the wellbore region is also improved due to paraffin and scale removal as well as biosurfactant production.

### Product Specifications

Color	light pink to tan
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 organic

### Application

Para-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 Para-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

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

### Shipping

Para-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.

### Service

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