



Technical Data Sheet (TDS)

Oil Based Mud (OBM)

High-Performance Drilling Fluid for Challenging Well Conditions

Product Name: Oil Based Mud (OBM)

Product Category: Drilling Fluid System

Manufacturer/Supplier: Basekim

Product Type: Invert Emulsion Drilling Fluid

Application: Oil & Gas Drilling Operations

1. Product Description

Oil Based Mud (OBM) is a high-performance drilling fluid system designed for demanding drilling environments. The system utilizes oil as the continuous phase and water or brine as the dispersed internal phase, forming a stable water-in-oil invert emulsion. This structure minimizes shale hydration, improves wellbore stability, enhances lubricity, and delivers superior performance in high-temperature and complex drilling conditions.

OBM is commonly used in deep wells, extended-reach drilling, horizontal drilling, reactive shale formations, and high-pressure/high-temperature (HPHT) applications.

2. Typical Applications

- Onshore and offshore drilling operations
- Reactive shale formations
- High-temperature wells
- Horizontal and directional drilling
- Extended-reach wells
- Deep well drilling
- Salt formations
- Contaminated drilling environments
- HPHT wells
- Coring operations and reservoir drilling



3. Key Benefits

Property	Benefit
Wellbore Stability	Prevents shale swelling and sloughing
Lubricity	Reduces torque and drag
Thermal Stability	Effective in high-temperature wells
Reduced Stuck Pipe Risk	Minimizes clay hydration
Faster ROP	Increases drilling efficiency
Fluid Loss Control	Produces thin, low-permeability filter cake
Corrosion Protection	Reduces corrosion of drilling equipment
Formation Protection	Minimizes formation damage
Operational Efficiency	Reduces non-productive time (NPT)

4. Typical Composition

Component	Function
Base Oil (Diesel, Mineral, Synthetic)	Continuous phase
Brine (CaCl ₂ Solution)	Internal phase and shale inhibition
Primary Emulsifier	Emulsion stability
Secondary Emulsifier	Enhanced emulsion strength
Wetting Agent	Oil-wetting of solids
Organophilic Clay	Viscosity and suspension
Lime (Ca(OH) ₂)	Alkalinity control
Fluid Loss Additives	Filtration control
Barite (BaSO ₄)	Density control
Rheology Modifiers	Flow property adjustment



5. Typical Physical Properties

Property	Typical Range
Appearance	Brown to Black Fluid
Odor	Mild Hydrocarbon
Continuous Phase	Oil
Internal Phase	Water / Brine
Oil-Water Ratio	70:30 to 95:5
Density (Mud Weight)	8.5 – 20.0 ppg (1.02 – 2.40 SG)
Electrical Stability	> 400 Volts
Plastic Viscosity	As per drilling program
Yield Point	Adjustable
API Fluid Loss	Low
pH (Water Phase)	9.0 – 12.0
Flash Point	Depends on base oil

Values may vary depending on formulation and customer requirements.

6. Performance Characteristics

Thermal Stability

Suitable for elevated downhole temperatures encountered in deep and HPHT wells.

Shale Inhibition

Prevents water-sensitive shale formations from swelling and disintegrating.

Lubrication

Provides excellent lubricity for directional and horizontal drilling operations.

Emulsion Stability

Maintains stable rheological properties under severe drilling conditions.



Pressure Control

Supports accurate density adjustment for well control requirements.

7. Recommended Operating Parameters

Parameter	Recommended Range
Oil/Water Ratio	70/30 – 95/5
Electrical Stability	≥ 400 V
Mud Weight	Project Specific
Alkalinity	Maintain per mud program
Chloride Concentration	As required
Solids Content	Controlled by solids management

8. Packaging

Available in:

- Complete OBM Premix Systems
- Emulsifier Packages
- Wetting Agent Packages
- Organophilic Clay
- Lime
- Barite
- Calcium Chloride
- Synthetic Base Oil Systems

Packaging options:

- Bulk Tankers
- Drums
- IBC Totes
- Bags

9. Storage and Handling

- Store in a cool, dry, and well-ventilated area.



- Keep containers tightly closed.
- Protect from direct sunlight and ignition sources.
- Avoid contamination with water unless specified in formulation.
- Follow site-specific handling procedures and SDS requirements.

10. Health, Safety & Environment

Safety Precautions

- Use appropriate PPE during handling.
- Avoid prolonged skin contact.
- Prevent inhalation of vapors and aerosols.
- Wash exposed skin thoroughly after handling.
- Follow local safety regulations and Safety Data Sheets (SDS).

Environmental Considerations

- Dispose of drilling waste according to local regulations.
- Use approved waste treatment methods.
- Synthetic base oils may be preferred in environmentally sensitive areas.
- Prevent uncontrolled release to soil or water systems.

11. Quality Assurance

Each batch can be supplied with:

- Certificate of Analysis (COA)
- Safety Data Sheet (SDS)
- Quality Control Documentation
- Regulatory Compliance Documents

12. Technical Advantages Over Water-Based Mud (WBM)

Feature	OBM	WBM
Shale Stability	Excellent	Moderate
Lubricity	Excellent	Fair
High Temperature Performance	Excellent	Moderate



Feature	OBM	WBM
Corrosion Protection	Excellent	Moderate
Rate of Penetration	Higher	Lower
Formation Damage	Lower	Higher
Environmental Impact	Requires stricter controls	Generally lower

Product Statement

Oil Based Mud (OBM) is a premium drilling fluid technology designed to deliver superior wellbore stability, exceptional lubricity, reliable pressure control, and enhanced drilling efficiency in challenging drilling environments. The system is particularly suited for shale formations, directional wells, extended-reach drilling, and high-temperature operations where conventional water-based mud systems may not provide adequate performance.

The values presented are typical and should not be considered product specifications. Actual performance depends on formulation design, operating conditions, and drilling program requirements.