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MATERIAL SAFETY DATA SHEET (MSDS)

OIL BASED MUD (OBM)

Product Name: Oil Based Mud (OBM)
Product Type: Invert Emulsion Drilling Fluid
Recommended Use: Oil and gas drilling operations
Revision Date: June 2026
Document Type: Material Safety Data Sheet (MSDS) / Safety Data Sheet (SDS)

Important Notice: Oil-Based Mud systems vary significantly depending on the base oil (diesel, mineral oil, low-toxicity mineral oil, or synthetic fluid), emulsifiers, wetting agents, brine content, and weighting materials. This MSDS is a generic industrial template and should be verified against the actual formulation before regulatory use.

SECTION 1: IDENTIFICATION

Product Identifier

Product Name: Oil Based Mud (OBM)

Recommended Use

Drilling fluid system for oil and gas well drilling operations.

Supplier Information

Manufacturer/Supplier: Basekim

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SECTION 2: HAZARD IDENTIFICATION

GHS Classification

Depending on formulation, OBM may be classified as:

- Flammable Liquid Category 3
- Aspiration Hazard Category 1
- Skin Irritation Category 2
- Eye Irritation Category 2A
- Specific Target Organ Toxicity (Single Exposure) Category 3
- Aquatic Chronic Toxicity Category 2

Signal Word

DANGER

Hazard Statements

- H226: Flammable liquid and vapor.
- H304: May be fatal if swallowed and enters airways.
- H315: Causes skin irritation.
- H319: Causes serious eye irritation.
- H336: May cause drowsiness or dizziness.
- H411: Toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention

- Keep away from heat, sparks, open flames, and hot surfaces.
- Avoid breathing mist, vapor, or spray.
- Wear protective gloves and eye protection.
- Use only outdoors or in well-ventilated areas.

Response

- IF SWALLOWED: Immediately call a poison center or physician.
- Do NOT induce vomiting.
- IF ON SKIN: Wash thoroughly with soap and water.
- IF IN EYES: Rinse cautiously with water for several minutes.

Storage

- Store in a well-ventilated area.
- Keep container tightly closed.
- Store away from oxidizing agents.

Disposal

- Dispose of contents and containers according to local regulations.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS Number	Concentration (%)
Base Oil (Mineral Oil/Diesel/Synthetic Fluid)	Proprietary	50 – 85
Calcium Chloride Brine	10043-52-4	5 – 25
Organophilic Clay	Proprietary	1 – 10
Emulsifiers	Proprietary	1 – 10
Wetting Agents	Proprietary	0.5 – 5
Lime (Calcium Hydroxide)	1305-62-0	0.5 – 5
Barite (Barium Sulfate)	7727-43-7	5 – 60
Fluid Loss Additives	Proprietary	0.5 – 5

Note: Exact composition may vary by drilling program requirements.

SECTION 4: FIRST AID MEASURES

Inhalation

- Move affected person to fresh air.
- Keep at rest in a comfortable position.
- Seek medical attention if symptoms persist.

Skin Contact

- Remove contaminated clothing.
- Wash skin thoroughly with soap and water.

- Obtain medical advice if irritation develops.

Eye Contact

- Flush eyes immediately with water for at least 15 minutes.
- Remove contact lenses if present.
- Seek medical attention.

Ingestion

- Do NOT induce vomiting.
- Rinse mouth with water.
- Immediately seek medical attention.

Most Important Symptoms

- Skin irritation
- Eye irritation
- Headache
- Dizziness
- Respiratory discomfort

SECTION 5: FIRE FIGHTING MEASURES

Suitable Extinguishing Media

- Alcohol-resistant foam
- Dry chemical powder
- Carbon dioxide (CO_2)
- Water fog

Unsuitable Media

- Direct water jet

Specific Hazards

Combustion may generate:

- Carbon monoxide (CO)

- Carbon dioxide (CO_2)
- Sulfur oxides
- Nitrogen oxides
- Toxic smoke

Protective Equipment

Firefighters should wear:

- Self-contained breathing apparatus (SCBA)
- Full protective clothing

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions

- Eliminate ignition sources.
- Use appropriate PPE.
- Avoid breathing vapors.

Environmental Precautions

- Prevent entry into drains and waterways.
- Notify authorities if environmental contamination occurs.

Cleanup Procedures

Small Spills

- Absorb using sand or inert absorbent.
- Collect in approved containers.

Large Spills

- Contain spill with earth or absorbent barriers.
- Recover product using vacuum equipment.
- Dispose according to regulations.

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SECTION 7: HANDLING AND STORAGE

Handling

- Avoid contact with skin and eyes.
- Use adequate ventilation.
- Prevent static discharge.
- Avoid ignition sources.

Storage

Store:

- In tightly sealed containers
- In cool, dry, ventilated areas
- Away from oxidizers
- Away from heat and flames

Recommended Storage Temperature

5°C – 40°C

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits

Substance	Exposure Limit
Mineral Oil Mist	5 mg/m³ TWA
Calcium Hydroxide	5 mg/m³
Barite Dust	10 mg/m³

Engineering Controls

- Mechanical ventilation
- Local exhaust systems
- Closed handling systems where possible

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Personal Protective Equipment

Respiratory Protection

- Organic vapor respirator when required

Hand Protection

- Nitrile gloves
- Neoprene gloves

Eye Protection

- Chemical safety goggles
- Face shield when splashing possible

Body Protection

- Chemical-resistant coveralls
- Safety boots

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Property	Typical Value
Appearance	Brown to black liquid
Physical State	Liquid suspension
Odor	Petroleum/hydrocarbon
pH (Water Phase)	9 – 12
Relative Density	1.02 – 2.40
Solubility in Water	Insoluble
Flash Point	> 60°C (depends on base fluid)
Boiling Point	> 150°C
Viscosity	Variable
Vapor Pressure	Low
Auto-Ignition Temperature	> 220°C

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SECTION 10: STABILITY AND REACTIVITY

Stability

Stable under normal storage and handling conditions.

Conditions to Avoid

- Heat
- Sparks
- Open flames
- Strong oxidizing conditions

Incompatible Materials

- Strong oxidizers
- Strong acids
- Reactive halogens

Hazardous Decomposition Products

- Carbon monoxide
- Carbon dioxide
- Sulfur oxides
- Nitrogen oxides
- Hydrocarbon fumes

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SECTION 11: TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

- Skin contact
- Eye contact
- Inhalation
- Accidental ingestion

Acute Toxicity

Expected low acute toxicity under normal use.

Skin Corrosion/Irritation

May cause moderate irritation.

Eye Damage/Irritation

May cause significant eye irritation.

Respiratory Effects

Mist or vapors may irritate respiratory tract.

Aspiration Hazard

May be fatal if swallowed and enters airways.

Chronic Effects

Prolonged exposure may cause:

- Dermatitis
- Respiratory irritation
- Central nervous system effects from hydrocarbon vapors

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SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

Potentially harmful to aquatic organisms.

Persistence and Degradability

Base oils may degrade slowly in the environment.

Bioaccumulation

Certain hydrocarbon fractions may bioaccumulate.

Mobility

Can spread on water surfaces.

Environmental Precautions

Avoid release to:

- Surface waters
- Groundwater
- Soil

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose according to local, national, and international regulations.

Waste Treatment Methods

- Licensed waste disposal contractor
- Approved drilling waste treatment facility
- Thermal treatment where permitted

Contaminated Packaging

Drain completely before disposal or recycling.

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SECTION 14: TRANSPORT INFORMATION

UN Number

Depends on base fluid composition.

Typical diesel-based systems:

UN 1202 – Diesel Fuel

Proper Shipping Name

Environmentally Hazardous Liquid, N.O.S. (where applicable)

Hazard Class

3 (Flammable Liquid)

Packing Group

III

Marine Pollutant

May be classified as marine pollutant.

Transport Regulations

- ADR
- RID
- IMDG
- IATA
- DOT

Apply according to actual formulation.

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SECTION 15: REGULATORY INFORMATION

Applicable regulations may include:

- OSHA Hazard Communication Standard
- REACH Regulation (EC) No. 1907/2006
- CLP Regulation (EC) No. 1272/2008
- GHS Classification System
- Local environmental regulations

SECTION 16: OTHER INFORMATION

Recommended Uses

Oil and gas drilling fluid system.

Restrictions on Use

Industrial use only.

Training Requirements

Personnel handling the product should be trained in:

- Chemical safety
- Spill response
- Fire prevention
- PPE use

Revision Information

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Prepared By: Technical Services Department