



Secoroc Rock Drilling Tools

DRILLING ADDITIVES

Environmentally safe drilling
products that combines
technology and environment





CLAY CONTROL AND ANTI-SWELLING

CLAYSTAB LIQUID

Atlas Copco Claystab is a liquid anionic polymer viscosifier with high molecular weight providing rapid viscosity without the problems associated with mixing, as is the case with most powdered polymers.

Application

Atlas Copco Claystab can be used in diamond drilling or well drilling:

- Produces rapid viscosity.
- Very cost effective – low concentration required.
- Reduces rod chatter and torque — increases core recovery.
- Inhibits water.

Recommended treatment for water well drilling

Add 1,0–1,5 l/m³ for complete water well drilling fluid.

Recommended treatment for diamond core drilling

Add 0,75–1,25 l/m³ water for complete drilling fluid. Add 0,5–0,75 l/m³ to stop rod vibration and reduce torque.

Advantages

The polymer can be easily and economically broken down for the development of water wells after setting screens.

- Controls sticky clays and inhibits water sensitive, swelling formations.
- Promotes effective settling of drilling solids in surface pits.
- Cost effective and economical to transport.

Several factors will dictate the most appropriate concentration rate. Please contact your nearest Atlas Copco representative for optimum results.



Atlas Copco Claystab Liquid.

FLUID LOSS CONTROL AGENT

SUPERMIX POWDER

Atlas Copco Supermix Powder is a new generation highly dispersive high quality polyanionic cellulose polymer used for viscosity and water loss control in most water based drilling fluid systems. Supermix Powder will not fisheye and has been designed to disperse rapidly into any make up water even under the poorest conditions. The mixing efficiencies of Supermix Powder reduces wastage and promotes lower mud costs and total hole costs.

Application

Atlas Copco Supermix Powder forms a protective colloid which inhibits the hydration of water sensitive formations; it has applications in most drilling mediums and has the ability to improve core recovery in diamond drilling, can be added to enhance a bentonite base system and is compatible with most polymers and lubricants. Addition rates can be adjusted to suit specific applications, hardness must not exceed 400 mg/l of calcium.

Recommended treatment

| Application | kg/1000 l |
|--|-----------|
| To reduce torque and improve core recovery | 1,0–3,0 |
| To provide encapsulation and stabilise clays and shales | 2,0–5,0 |
| To improve filter cake | 1,5–2,5 |
| To improve the properties of a bentonite base drilling fluid | 0,5–2,5 |

Atlas Copco Supermix Powder can be slowly introduced into mechanical agitation, through water discharge or through a mud hopper.

Advantages

- Very economical, 100 percent active.
- Eliminates wastage, “no fish eyes”.
- Easily mixed into low shear environments.
- Effective in fresh, hard and saline environments.
- Promotes thin slick robust filter cake.
- Controls fluid loss without significantly increasing fluid viscosity.
- Supports hole stability in reactive clays and shales.
- Compatible with all water based drilling fluid systems polymers and lubricants.

- Supplements the properties of a bentonite base drilling fluid.
- Improves core recovery and penetration rates.
- Reduces friction and frequency of differential sticking.
- Non-polluting and environmentally friendly.

Physical properties

- Appearance: White free flowing powder.
- pH (0,2 % solution): 8,5–9,5.

Several factors will dictate the most appropriate concentration rate.

Please contact your nearest Atlas Copco representative for optimum results.



Atlas Copco Supermix Powder.



FLUID LOSS CONTROL AGENT

SUPERMIX LIQUID

Atlas Copco Supermix Liquid is a high quality polyanionic cellulose polymer suspended in a non-toxic ultra clean mineral oil. Atlas Copco Supermix Liquid is an extremely effective viscosifier and filtration control agent for use in fresh, saline and hard water. The product is an effective borehole stabiliser, providing lubricating qualities to the mud system.

Application

Atlas Copco Supermix Liquid can be used in any type of water-based drilling fluid and is tolerant to fresh, hard and saturated salt water environments. Atlas Copco Supermix Liquid can also be added to Bentonite to complement its properties, used as a simple single polymer system and is compatible with all other products. Atlas Copco Supermix Liquid is an excellent viscosifier, controls fluid loss and helps produce a thin flexible filter cake. When used correctly, Atlas Copco Supermix Liquid can inhibit the reactive nature of hydro-sensitive clays and shales, it will also improve core recovery and reduce friction drag in most drilling applications.

Recommended treatment

Concentrations will vary depending on the level and type of losses but will typically range between 6–12 lb/barrel (17–34 kg/m³).

| Application | l/m ³ |
|--|------------------|
| To improve properties of a bentonite mud | 2,5–5,0 |
| To reduce torques and improve core recovery | 5,0–12,5 |
| To improve fluid loss inhibition and encapsulation | 5,0–15,0 |
| When used in salt systems | 7,5–17,5 |

Atlas Copco Supermix Liquid should be slowly introduced into mechanical agitation, through a water discharge jet or through a mud hopper.

Advantages

- Very cost effective.
- Reduces wastage.
- Can be used as a single sack system.
- Easily mixed under low shear.
- Improves hole stability.
- Inhibits water sensitive formations.
- Lowers filtration rates.
- Reduces rod vibration and imparts lubricating qualities.
- Improves penetration rates.
- Effective in fresh, hard and saline waters.
- Compatible with most water-based products.

Physical properties

- Appearance: White viscous slurry.
- pH (1 % solution): 6,5–8,5.
- Specific gravity (water = 1): 0,9–1,0.

Several factors will dictate the most appropriate concentration rate. Please contact your nearest Atlas Copco representative for optimum results.



Atlas Copco Supermix Liquid.

FRICION REDUCER AND CUTTING OIL

SUPERDRILL LIQUID

Atlas Copco Superdrill Liquid is a distinctive, next generation, high performance extreme pressure lubricant utilising sophisticated technologies to improve the lubricating qualities of a drilling fluid through advanced adhesion and filming characteristics.

Description

Superdrill is a high performance torque reducer formulated in an aqueous solution specially designed to provide friction reduction through enhanced lubricating characteristics of most water-based drilling fluid systems.

Superdrill is based on environmentally acceptable, safe and proven technology and has proven to be highly effective in reducing rotational torque in a variety of applications including diamond coring, deep directional drilling, vertical and horizontal wells.

Superdrill offers additional benefits like improved production and reduced wear of cutting surfaces, down-hole equipment and wet-ends. It also helps prevent corrosion.

Application

Atlas Copco Superdrill Liquid is highly concentrated, mixes easily and instantaneously and is not generally affected by adverse water quality such as high salt, high pH and extremely high levels calcium and magnesium.

Superdrill deposits a protective film over metal surfaces, which, in turn, reduces frictional drag in extreme pressure environments including both metal to metal and metal to formation friction points. When used correctly Superdrill reduces the co-efficient of friction by reducing the thickness of the filter cake and is effective where there is a high risk of differential sticking, such as in highly deviated sections and sections with high differential pressure.

Superdrill will not cause any appreciable adverse changes in mud properties and is proven to improve drilling productivity through benefits like improved cutting action at the bit face and reamer and through to



Atlas Copco Superdrill Liquid.

the protection of the down-hole equipment. Dosage rates can be increased to improve drilling efficiencies in extremely hard abrasive formations, in deep direction holes or when shale and clays are encountered.

Superdrill utilises a biodegradable vegetable oil base and therefore has minimal impact on the environment, aquatic systems and wildlife, and can be used safely in all drilling operations and environmentally sensitive locations.

Superdrill can be added directly into the rod line or slowly and consistently via a venturi mixer or through high speed agitation. Superdrill is normally added to a system at 0,25–0,5 percent by volume, increased to 0,5–1,0 percent by volume in extremely hard, abrasive or highly deviated deep directional holes.

Typical properties

- Appearance: Clear, golden brown to amber liquid.
- Specific gravity (water = 1): 0,9–0,95.
- Solubility: Water miscible.

Advantages

- Rapidly dispersible, highly miscible.
- Compatible with most water based muds.
- Improves penetration (ROP) and depth capacity.
- Enhances the cooling action of the circulating fluid.
- Protects against corrosion.
- Eliminates rod vibration, minimises bit balling.
- Does not contribute to core staining.
- Stable in a range of waters types.
- Effective in a wide range of drilling applications.
- Reduces the potential of differential sticking.
- Improves rod, bit and reamer life.
- Environmentally acceptable and non-hazardous.

Several factors will dictate the most appropriate concentration rate. Please contact your nearest Atlas Copco representative for optimum results.

Recommended usage/dosage rate to a water based drilling fluid

| litres/ 1000 l | % by volume | quart/ 100 gallon |
|-------------------|----------------|----------------------|
| 2,5–1,0 | 0,25–1,0 | 1,0–4,0 |

FOAMING AGENT AND DETERGENT

SUPERFOAM LIQUID

Atlas Copco Superfoam is a biodegradable mixture of anionic surfactants which has been formulated for use in the mineral and water well drilling industries.

Application

Atlas Copco Superfoam may be used in a variety of air drilling operations, ranging from simple air drilling to stiff foam drilling where the foam is extended by the use of polymers such as Claystab Liquid or Supermix Powder.

Recommended treatment – mist drilling

Atlas Copco Superfoam should be mixed with water at 0,25–0,5 percent by volume and injected into the air stream. The rate of injection will depend on hole size, compressor output and water flow rate etc.

Recommended treatment – foam drilling

If water flow rates are high and compressor limits are reached, up to 1,0–2,0 by volume of Atlas Copco Superfoam.

Recommended treatment – air drilling

Atlas Copco Superfoam can be used as an effective dust suppressant, at 0,1–0,2 percent by volume injection water.

Stiff foam drilling

Stiff foam applications include areas of severe lost circulation, large diameter holes and unconsolidated formations. Stiff foam can be prepared by injecting a base slurry of 35–45 seconds per litre viscosity fluid prepared as follows: mix Atlas Copco Superfoam at the ratio 10–15 l/m³ and combine with either of Claystab Liquid 1–2 kg/m³ or Supermix Powder 2–4 kg/m³. When injected into the air stream, this slurry will produce stiff foam of shaving cream consistency.

Advantages

- Environmentally friendly and biodegradable.
- Generates instant high foam quality of exceptional stability.
- Economical, produces stable foam at low concentrations.
- Is compatible with all types of makeup water including brackish, salty and hard water.
- Reduces erosion when drilling poorly consolidated formations.
- Reduces air requirements and allows deeper drilling.
- Reduces the tendency of softer clays to stick together.
- Improves hole cleaning and increase penetration rates.
- Effective in suppressing dust.

Physical properties

- Appearance: Thin liquid, fluorescent yellow.
- pH: 7,5–9,5.



Atlas Copco Superfoam Liquid.

Several factors will dictate the most appropriate concentration rate. Please contact your nearest Atlas Copco representative for optimum results.





TERRACORE RANGE

DRILLING ADDITIVES

| Product name | New product no. | Size | Pack |
|-------------------|-----------------|--------|--------|
| Claystab Liquid | 8393082793 | 20 kg | can |
| Supermix Powder | 8393082792 | 15 kg | pail |
| Supermix Liquid | 8393082791 | 25 kg | can |
| Superdrill Liquid | 8393082790 | 25 kg | can |
| Superfoam Liquid | 8393082794 | 25 kg | can |
| Superfoam Liquid | 8393082934 | 200 kg | barrel |

Sustainable Productivity

We stand by our responsibilities towards our customers,
towards the environment and the people around us.
We make performance stand the test of time.
This is what we call – Sustainable Productivity.

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