



Environmentally Friendly Lubricant

ICC-Green Lube is a kind of biodegradable and environment friendly lubricant. It is widely used in water based drilling fluid. It forms hydrophobic membrane on the surface of metal, rock and clay, then transform the solid-solid friction between drilling tools and well wall into membrane-membrane one. In this way, it reduces the friction and steering resistance for drilling tools. Finally it improves the lubricity of drilling fluid.

ICC provides innovative, highly effective alternative to traditional lubricants .
A composition based on herbal products and their derivatives.

ICC-Green Lube is a **new innovative** and an **environmentally friendly lubricant** that reduce the friction between drilling tools and well wall.

ICC-Green Lube is composed of largely renewable contents and is nearly 100% biodegradable. When used in drilling fluid, **ICC-Green Lube** can readily reduce the drag, leading to faster drilling. **ICC-Green Lube** is dispersible in water and brines and has a strong emulsion stability, enabling persistent performance that is equal or greater than the current market benchmarks.

BIODEGRADABLE DRILL LUBRICANT

ICC-Biodegradable Drill Lubricant, commonly known as **ICC-Green Lube** Lubricant, is a biodegradable, emulsifiable drilling fluid that utilizes a readily renewable bio-base. **ICC-Biodegradable Drill Lubricant** is specifically formulated for use as a down hole flushing fluid and lubricant for drilling operations using bits. **ICC-Biodegradable Drill Lubricant** is typically pumped down hole through the bit. Its constant flow keeps the bore hole and bit free of drilling debris, reducing bit wear and breakage. Specifically formulated for drilling operations using bits.

**Typical Physical Properties**

| | |
|---------------------|----------------------------|
| Physical Appearance | Light brown viscose liquid |
| Solubility in water | Mixes easily with water |
| Flash Point, °C | > 240 °C |
| Freezing Point, °C | < -40 °C |
| Chlorine, wt% | Nil |
| Sulfur, Total, wt% | Nil |
| pH (5% Solution) | 7-8 |

Application Information

ICC-Green Lube solution is used for treatment of water-based drilling fluids for the purpose of reduction of a down hole frictional force, prevention of sticking in case of drilling of a vertical, directional wells. It has stuffing resistant effect.

ICC-Green Lube solution is used in drilling operations using bits.

ICC-Green Lube solution is used as asphalt release agent for truck beds.

ICC-Green Lube is ideal for sensitive surroundings such as forests, reservoirs, parklands and waterways. Our bio lubricant ranges of biodegradable lubricants provide an environmentally friendly alternative to other petrochemical products.

ICC-Green Lube solution is used in freshwater, seawater and saturation salt water based drilling fluid.

In recent years the demand for a safer, cleaner environment has led to the development of modern biodegradable lubricants that still give more than comparable performances to their mineral counterparts.

Due to careful design and formulation, they compromise on the full requirements of a quality lubricant and continue to meet the high demands of today's modern machinery.



ICC-Green Lube “For a safer, cleaner environment”

At **ICC**, we focus on the industrial side of the market (drilling fluids, metalworking fluids , Textile Antistatic Agent, etc.)

More and more people are switching to **ICC** from petroleum based lubricants. You know it’s the right choice ...

Features

- It is composed of natural, environmentally friendly raw materials.
- Stable at temperatures above 300 °C and pH values up to 14.
- Effective in fresh and mineralized drilling fluids. It does not deteriorate rheology, filtration and other properties of the drilling fluid.
- Compatible with all chemical agents used for treatment of drilling fluids.
- Excellent asphalt release properties, Promotes full load release when used as an asphalt bed release agent.
- Excellent Oxidative, Thermal and Chemical Stability.
- Excellent Load Carrying and Anti-Wear Protection.
- Very good natural lubricity.
- Low volatility characteristics.
- Very good hydrolytic stability.
- Very low foaming tendencies.
- Very good low temperature properties.
- High natural viscosity index.
- Very Good Adhesive Properties.
- Reliability in wet conditions.
- Protection in Wet Environments.



Benefits

- Superior corrosion protection, Prevents rust and corrosion of tanks, injection pump, valve areas, air passages and lubricated parts.
- Biodegradable, Environmentally safe. Water soluble, Economical bore and bit flush. Adds stability to blast hole walls. Improves dust suppression.
- Long fluid lifetime.
- Reduced maintenance costs.
- Space out oil changes thanks to an excellent resistance to oxidation, better protect your installations and the environment.
- Provides very good lubrication at both high and low temperatures.
- Protects the metal surfaces from corrosion especially during high moisture conditions.
- Provides a tenacious lubricant film under all operating conditions in order to protect the system from wear.
- Provides a tenacious film that clings to lubricated parts .
- Resist being washed away by trace water that may be present in the compressed air.
- Emulsification of water and increased oil absorption on the working surfaces.
- Effective lubrication in the presence of water.
- Increased protection of critical parts from rust and corrosion in the presence of water.
- Longer tool and drill life.
- Lower operating temperature.
- Less equipment downtime.
- Reduced maintenance costs.
- Prolonged equipment life.
- Reduced component wear.
- Keeps metal surfaces from galling and welding.
- Withstands heavy shock loads.
- Minimization of frictional heat.



Packaging and Storage

ICC-Green Lube should be stored in ventilated, cool, dry and clean shelters. No fire .

Recommended materials to store, handling and distribution **ICC-Green Lube** are galvanized steel stainless steel, and polymeric (plastic) materials.

ICC-Green Lube can be packed into 200 Kg/plastic drum or 1000 Kg/IBC drum. Or based on customers 'request and be careful. Pack and preserve the product in a sealed, cool and dry condition, and avoid contacting strong oxidants. Transportation: Non-dangerous goods

Shelf Life

ICC-Green Lube has shelf life of at least one years from the data of manufacture when stored in the original sealed containers in a cool and dry place.

Health Effects

Eye Contact: Wash affected eyes for at least 15 minutes under running water with eyelids held open. Seek medical attention.

Skin Contact: wash the area affected thoroughly with water. If irritation develops, seek medical attention.

Ingestion: Rinse mouth and then drink plenty of water. Do not induce vomiting. Immediate medical attention required.