LIQUID EARTH SUPPORT

A NEW CONCEPT IN LUBRICATION

PUSHLUBE®

Ideal lubricant for microtunneling and impact mole operations.

INFORMATION SHEET

Composition	Modified Acrylamide/SodiumAcrylate copolymer formulation.
Physical properties	Very thick white cream. Slight odor. pH = 7 Specific gravity : 1.0
Proportioning	Ready to use product.
Toxicity	None.
Degradability	97% Biodegradable
Impurities	None.
Packaging	PUSHLUBE® 30: 55 steel drum or 275 gal. Tote.
Storage and Handling	Store in clean dry area: very slippery product. Store above freezing temperature.
Spillage	Avoid spillage. Use dry sand or sawdust to contain spills and absorb product. Dispose in waste container.
Disposal	Mud viscosity may be broken with strong oxydizers such as chlorine or a mild acid preferably in dry form.
Precautions	Product extremely slippery.
Fire	Use Carbon Dioxide (CO_2) foam extinguishers.

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PUSHLUBE® APPLICATIONS

Microtunneling

PUSHLUBE® is a low rigidity viscous fluid which can be pumped over extensive lengths with a positive displacement pump. **PUSHLUBE®** will not penetrate in soil formations and will keep the overcut annulus open at all times. By maintaining the lubricating compound at a proper pressure **PUSHLUBE®** is incompressible.

The lubrication supply line is the annulus itself; this provides for a much larger cross section than any supply line. This also enables to feed the annulus by pumping at a much lower pressure. Since there is practically no loss, the volume pumped is about the same as the volume of the annulus created ; the quantity of **PUSHLUBE®** required is a fraction of that of conventional slurries and the pumping rate is very slow.

As an example: For a 40" O.D. 8 Ft long pipe pushed in 20 minutes and an overcut of .5 inches on the radius creating an annulus of 30 gallons would require a pumping rate of only 1.5 gpm. for the duration of the push.

PUSHLUBE® is pumped into the annulus by entering a special chamber on the outside of the ring seal at the launching pit. The **PUSHLUBE®** supply is at the top of the pit from a tank discharging by gravity into the pump.

PUSHLUBE® coats the pipe to the extent that by adhesion the pipe becomes an active part of the lubrication transport. A pressure sensor located on pipe No.2 indicates the constant presence of **PUSHLUBE®** around the tail and its reaction to the action of the lubrication pump.

By supplying a ready to use product required in small quantity, the **PUSHLUBE®** solution eliminates at least one man from the traditional crew.

Pipe Ramming/Pipe Bursting

Significant gains in rate of progress can be achieved when coating a pipe with **PUSHLUBE® 30** and pulling or pushing the pipe with a ramming tool.

The same ramming tool will have a greater capability either in length or in diameter compared to running dry or using conventional lubricants.

PUSHLUBE® 30 is a ready to use compound that can be applied to the pipe in many ways to be best adapted to the work at hand : hand or brush application is the simplest method and should be limited to small diameter pipes or short pushes. Larger diameters justify the use of a grease box which is penetrated by the pipe through two rubber seals. **The pipe actually pulls out its coating of PUSHLUBE® 30** and the attendant's only role is to replenish the grease box . For easy handling, **PUSHLUBE® 30** is delivered in 55 gallon drums.

PUSHLUBE® 30 will improve performance in all kind of soils and particularly in sticky soils.
PUSHLUBE® 30 will also reduce friction in all pushed steel pipe horizontal boring operations.

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