



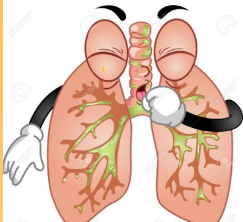
Health and Safety Advantages using Liquid Shield rock drill oil Polar Fog Control Technology

Liquid Shield Polar rock drill oils / air tool lubricant
Powerful, economical protection for miners and equipment



Oil Fog is harmful to workers exposed to it.

It causes stress on the lungs; it often causes miners to **cough, and can even lead to serious lung injury.** It also creates **slip hazards**, as oil fog settles on everything in the vicinity, making surfaces slippery, creating **fall hazards**. Additionally, miners' coveralls and skin become coated with an oily slick, causing discomfort, and potentially resulting in **contact dermatitis**.

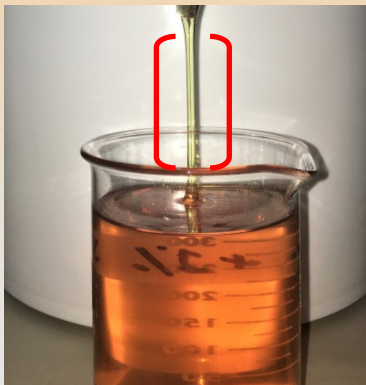


Contact dermatitis

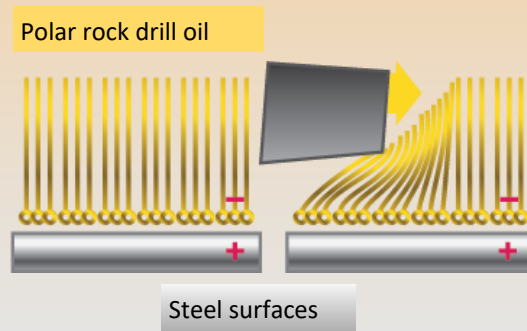
Liquid Shield Polar Fog Control rock drill oils reduce worker exposure to harmful oil fog via two mechanisms:

Internal cohesion of the lubricant, as demonstrated by the illustration on the left below:

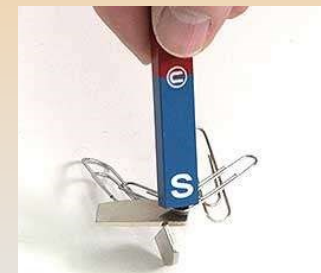
Note that the lubricant has virtually retained its thickness down the pour indicating the powerful tendency of the lubricant to cling to itself. This cohesive property enables the lubricant to resist blow out by high velocity compressed air.



Cohesiveness restricts oil fog



Steel surfaces



Polar rock drill oil is attracted to steel, like steel is attracted to a magnet.

Polar adhesion

Liquid Shield Polar Fog Control rock drill oils are negatively charged. Steel is positively charged (see illustration above). These opposite poles attract the rock drill oil to the equipment like steel is drawn to a magnet. This polar attraction causes the lube to spread uniformly across tool surfaces, protecting the tool from wear, and inhibiting the oil from separating from the tool and becoming airborne. The polar protection package has a much higher resistance to thermal and mechanical breakdown compared to conventional rock drill lubricants, which typically results in significant decreases in tool wear rates. **Liquid Shield Polar rock drill oils provide a significant improvement in mine air quality and tool wear protection.**

Liquid Shield Polar Fog Control Rock Drill Oils

High Performance at Affordable Prices



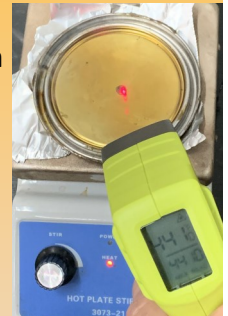
In addition to the health benefits of Liquid Shield rock drill oils, there are important performance benefits :

Wear reduction:

Liquid Shield rock drill oils mitigate the formation of harmful carbon deposits which occur when rock drill oils burn on to tool parts, especially around the piston. This typically occurs after pauses after hard drilling. During drilling, cold compressed air circulating past the internal workings of the tool keep it cool. However, once the tool has stopped, heat that has built up within the body of tool parts migrates to the part surfaces, and bakes on oil residue, which carbonizes at temperatures around 199°C (390°F). Mineral oils begin to decompose (coke) at temperatures in excess of 350°F, and lubrication is compromised. (See photo at right)

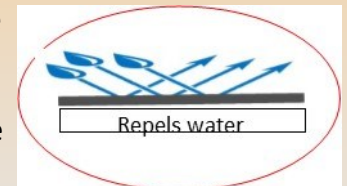


Liquid Shield polar rock drill oil formulas provide a barrier against the deposition of carbon on parts surfaces, minimizing carbon deposits, thus reducing wear. Our polar additives turn into a soft grease once subjected to high heat. This soft grease has good lubricating properties. The Liquid Shield rock drill oil on the right was exposed to temperatures over 435°F for 20 minutes, and retained its excellent lubricating properties.



Resistance to freeze up at the muffler:

Liquid Shield rock drill oils reject water, protecting against corrosion and limiting the formation of ice on tool parts that are coated in our polar rock drill oils. Tool freeze up causes delays in production in all cases. Freeze up in mechanical raises can be very costly in terms of lost production time, and are particularly vulnerable to freeze up. Piston air motors have close tolerances, and benefit greatly from the increased wear protection provided by Liquid Shield polar rock drill oils, as well as protection from water.



Available in 3 standard packaging sizes:

4 X 4 litre jugs

2 X 8 litre jugs

20 litre pails



Non regulated WHMIS / TDG

Also available on request:
205 Litre drums / 1000 litre totes



Made in Canada

Our pricing is very affordable, protecting Health and Safety without compromising operating budgets. Call us today to arrange a product trial.

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