



December 2006

AROX EP offers the following features and benefits:

- ◆ Meets demands of oil-lubricated pneumatic tools through effective extreme- pressure characteristics
- ◆ Prevents cracking and eventual rupture of hardened steel parts
- ◆ Protect against corrosion caused by moisture and corrosive material-laden air
- ◆ Atomize and disperse reliably even under cold weather conditions
- ◆ Meet specifications of pneumatic equipment manufacturers

#### *Primary Applications*

AROX EP oils are designed for use in all air-line lubricated pneumatic tools such as rock drills, jack hammers, stopers, drifters, wagon drills, chippers, tampers, riveters, impact tools and pavement breakers. AROX EP rock drill oils are compounded with friction and wear reducing additives that also have emulsifying properties and inhibit metal surfaces against corrosion. All grades contain extreme pressure additives giving extra protection when needed. AROX EP is available in four grades, enabling the operator to select the optimum viscosity and pour point, to ensure effective oil feed, lubricating film formation and sealing characteristics under the adverse conditions found in rock drilling.

AROX EP 22 is a low viscosity oil for cold temperature and winter applications.

AROX EP 100 is the most popular grade used in underground mining operations, and is used extensively for a wide range of conditions and equipment.

AROX EP 150 meets the requirements of warmer, ambient operations and some "long-hole" and "jumbo" drills.

AROX EP 220 is an extra-heavy viscosity oil, which may be required for very high ambient temperature conditions and some "jumbo" drills, particularly those that do not use water to remove rock cuttings.

## Performance Features

### Wear Protection

While the ultimate wear test for all lubricants is in actual field service, a number of wear tests are useful in predicting anticipated performance in rock drill applications and service.

### Emulsibility

Condensed moisture in the compressed mine air and from water used to remove cuttings from the drill holes, places a burden on pneumatic tool lubricants as water tends to wash the lubricant off the metal surfaces. AROX EP oils contain emulsifying agents, which cause the lubricant to combine with water, thus preventing the water from wetting the metal surfaces or displacing the lubricant. As a measure of their emulsibility AROX EP oils are subjected to two tests to measure this performance characteristic.

### Steam Emulsion Number

AROX EP oils have steam emulsion numbers of 1200+ (0) the highest possible emulsibility rating provided by this test. In this test we also indicate that at the conclusion of the test, no water has separated out and a total emulsion is formed.

### Start-up Lubrication

During the initial few seconds following rock drill start-up, the moving parts are at best in boundary lubrication conditions with a good chance for metal to metal contact. AROX EP oils are fortified with additives, both to retain the lubricant during this critical period and to displace moisture or "wet-out" on the metal surfaces of these moving parts during this critical period.

### Exhaust Oil Mist/Oil Consumption

In underground drilling operations, even a perfectly adjusted automatic oiler will cause oil mist to be exhausted to the atmosphere, leading to health concerns and increased rock drill oil consumption. AROX EP rock drill oils have been fortified by the addition of a tackiness additive, which will minimize both exhaust oil mist and oil consumption.

### Operating Range

AROX EP rock drill oils are formulated for maximum performance under the great variety of drilling and climatic conditions. These oils meet the requirements of major rock drill manufacturers. The recommended ambient temperature operating ranges are as follows:

AROX EP 22	:	below 5°C
AROX EP 100	:	-5°C to 25°C
AROX EP 150	:	-5°C to 25°C
AROX EP 220	:	above 25°C

### Precautions

AROX EP oils are manufactured from high quality petroleum base stocks, carefully blended with selected soaps and additives. As with all of our products, good personal hygiene and careful handling should always be practiced. Avoid prolonged contact to skin, splashing into the eyes, ingestion or vapour inhalation. High-pressure injection of any grease under the skin can cause serious delayed soft tissue damage and should be treated immediately by a physician. To avoid injection injuries, inspect greasing equipment regularly for worn hoses and fittings. Keep fingers away from the nozzle and ensure the nozzle is firmly in place before discharging the grease. Please refer to the Material Safety Data Sheet for further information.

Note: This product is not controlled under Canadian WHMIS legislation

## Typical Properties

	Kinematic Viscosity cSt		Steam Emulsion Number	Pour Point	Flash Point	Demulsibility	Timken OK Load kg	FALEX Failure Load, kg	FALEX Wear mg
	40°C	100°C		°C	°C				
AROX EP 22	22	4.2	1200+	-30	165	0-0-80	20	1400	16
AROX EP 100	100	11.9	1200+	-6	206	0-0-80	16	1400	16
AROX EP 150	150	14.4	1200+	-3	210	0-0-80	18	1600	23
AROX EP 220	220	18.9	1200+	-12	216	0-0-80	18	1600	23

The values shown above are representative of current production. Some are controlled by manufacturing and performance specifications while others are not. All may vary within modest ranges.