



Product Data Sheet

COMPRESSOR OIL

PREMIUM QUALITY LUBRICANTS FOR AIR COMPRESSORS

November 2006

The Esso line of Compressor Oils has been specifically formulated from highly refined paraffinic base oils and "leading edge" technology additives for the lubrication of rotary and reciprocating air compressors. Each grade of Compressor Oil when used within its appropriate recommended application temperature and viscosity range, will offer the following features and benefits:

- ◆ Outstanding cylinder and piston ring lubrication
- ◆ Excellent lubrication of timing gears and bearings in rotary compressors
- ◆ High compressor efficiency by reducing build-up of carbon on discharge valves and inter-coolers
- ◆ Enhanced oil life in circulating systems and crankcases
- ◆ Optimum rust, corrosion and wear protection - all grades are inhibited to help reduce rust, corrosion and wear in compressor systems
- ◆ Excellent water separation aids in draining excess moisture from circulating systems
- ◆ Reduced sight glass staining of compressors equipped with automatic lubricators
- ◆ Excellent air/oil separation when used in flood-lubricated rotary compressors
- ◆ Foam protection - Grades 32 through 220 contain an effective foam inhibitor

Primary Applications

There are seven grades of Esso COMPRESSOR OIL available; 32,46, 68, 122, 220, 264 & 460.

COMPRESSOR OIL 32, 46 and 68 are developed especially for rotary vane and screw compressors.

COMPRESSOR OIL 68, 122 and 220 are effective as "once-through" lubrication of reciprocating compressor cylinders as well as crankcases and some types of rotary compressors.

Note: COMPRESSOR OIL 264 and 460 are available for natural gas compressors (see specific data sheet on those grades). They can also be used for other gases where high viscosity conventional petroleum base oils are specified.

Rotary Compressors

Straight lobe types generally require 122 or ISO 220 grade for high ambient temperatures. ISO 68 can be used for low ambient temperatures. As an alternate lubricant the equivalent grade of TERESSO can be used to reduce number of lubricants.

Screw (helical lobe) compressors

They are mostly of the "flood-lubricated" type and do not utilize timing gears. ISO 32 and 46 is the standard recommended viscosity. In some cases, alternates such as ESSO ATF or a heavy duty 10W-30 engine oil such as ESSOLUBE* XD-3 EXTRA 10W-30 can be used.

For severe service, synthetic Mobil Rarus SHC 1020 series fluids are also recommended.

Manufacturer's recommendations must strictly be followed. "Dry" screw types usually employ timing gears. Follow manufacturers' recommendations for their gear and bearing lubrication. Alternate lubricants are NUTO H or TERESSO of the appropriate viscosity.

Sliding Vane compressors

Usually require an ISO 46 or higher grade when oil is injected or flooded. Sparse or "once-through" lubricated types require a heavier grade such as ISO 68 or the 122 viscosity. Alternate lubricants are NUTO H or TERESSO as required.

For severe service, synthetic Mobil Rarus SHC 1020 series fluids are also recommended.

NOTE: Caution should be exercised when using heavy duty engine oils as flood lubricants in humid conditions. Emulsions may be formed which could interfere with lubrication and form deposits on air oil separators. Follow manufacturers' instructions at all times and drain oil as specified

Reciprocating Compressors

COMPRESSOR OILS 68, 122 or 220 are generally recommended for cylinder lubrication in crosshead type reciprocating units. Appropriate grades can also be used as crankcase lubricant. (See Precautions)

For severe service reciprocating cylinder lubrication, Compressor Oil N 100 and the appropriate grades of the Mobil Rarus 800 series are recommended. (see specific data sheet for these products)

Portable reciprocating air compressors are often lubricated with the oil recommended for the engines that power them.

Other Types

Vacuum pumps require an oil with low vapour pressure and low foaming tendency. ESSO COMPRESSOR OIL or TERESSO oil meeting the manufacturers' viscosity requirements is recommended.

Centrifugal compressors

They only require bearing lubrication. Choose the correct grade of COMPRESSOR OIL or TERESSO. Specific gas exposures could require the use specific products eg. Teresso N for ammonia. For thermally stressed applications, Teresso GTC or Mobil synthetics should be considered. Consult with your ESSO representative.

COMPRESSOR OILS 32 through 220 have given excellent performance in a variety of compressors including:

- Ingersoll-Rand
- Gardner-Denver
- Sullair
- Compair Hydrovane
- Atlas Copco

Precautions

Care must be exercised in selecting an oil for use in compressors. The COMPRESSOR OILS covered by this ESSO Product Data Sheet were designed for air or natural gas service in rotary and reciprocating compressors. Manufacturers' recommendations should always be observed.

Petroleum oils are not recommended for compressors supplying breathing air. Non-lubricated -- often referred to as "oil-less" -- compressors are preferable for this application.

Compression of gases other than air -- Many gases require special lubrication procedures. As an example, no petroleum oils should be used for cylinder lubrication in the compression of oxygen. For gases other than air or natural gas consult your ESSO representative.

The ESSO line of COMPRESSOR OILS is manufactured from quality petroleum base stocks, blended with selected additives. As with all petroleum products, good personal hygiene and careful handling should always be practiced. Avoid prolonged contact with the skin, splashing into the eyes, ingestion, or vapour inhalation. Please refer to the ESSO Material Safety Data Sheet for further information.

Typical Properties

Grade	32	46	68	122	220
Kinematic Viscosity, cSt @ 40 °C	32	46	68	122	220
cSt @ 100 °C	5.6	7.1	9.1	12.3	18.4
Pour Point °C	-27	-24	-21	-15	-12
Flash Point °C	220	236	240	230	245
Density @ 15 °C	0.854	0.857	0.868	0.882	0.889
Colour ASTM	0.5	0.5	1.0	2.0	2.5
Phosphorous, wt. %	0.012	0,012	0.012	0.012	0.012

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.