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LUBRICATING OIL

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This invention relates to methods of lubrication and corrosion inhibition and the compositions therefor. More particularly, it relates to mineral oil lubricants having a corrosion inhibitor placed therein and to methods of lubrication and corrosion prevention by the use of such compositions. In lubricating such articles as guns, it is desirable that the coating of oil protect the surfaces of the metal from corrosion as well as to lubricate the parts. It is also desirable in an oil suitable for household service that corrosion inhibition be an attribute thereof, as frequently the oil is used for lubricating purposes and also for corrosion prevention. It frequently occurs that such oils are placed on the gun or household articles and left for a considerable period of time, and the value of the oil will obviously be increased if it prevents corrosion thereon. Oil is often used for cleaning and slushing tools and it is advantageous to use an oil or medium that will prevent corrosion after the cleaning operation. Other objects and advantages will appear from the more detailed description set forth below, it being understood, however, that such description is given by way of illustration and not by way of limitation, since various changes may be made within it without departing from the scope and spirit of the invention.

It has been found that a poly-alkylated phenol and especially poly-methyl phenols when mixed with mineral oil are efficacious to inhibit corrosion on metal surfaces. The mineral oil that is used may be one of relatively low volatility, as, for example, a light oil of the spindle oil type or light lubricating oils. It is not, however, limited thereto. In the catalytic synthesis of methanol from carbon monoxide and hydrogen, a mixture of poly-alkylated phenols is produced. These are producible by the high pressure catalytic hydrogenation of carbon monoxide and include among other things, 2,6-dimethyl and 2,4,6-trimethyl phenols. It has further been found that the corrosion inhibition of the mineral oil and its adaptability for use is enhanced by the use of a small proportion of what is known as "extreme pressure lubricant." One of the perfected extreme pressure lubricants is that containing a mixture of mono- and di-lorol phosphates. The term "lorol" is intended to include a mixture of primary aliphatic alcohols such as ordinarily obtained by the carboxylic reduction of coconut

and/or palm kernel oils. This mixture ordinarily contains mostly lauryl alcohol together with some octyl, decyl and myristyl alcohols. A typical mixture of this type has a boiling range of 140° C. to 190° C. at about 50 mm. The precise action of the poly-alkylated phenols and the extreme pressure lubricant is not exactly known. However, there is apparently a wetting action on the metal surface produced by the result of the incorporation of the poly-alkylated phenol therein which allows the oil to completely adhere to the metal surface in an impervious manner. The mono- and di-lorol phosphates mixed with the composition may be theorized as increasing the strength of the surface tension or film strength and thereby preventing the breaking of the impervious film on the metal surface. As has been stated, however, the precise action of these is not known.

The invention will be further illustrated but is not intended to be limited by the following example, in which the quantities are given by volume:

	Cubic centimeters
25 Mineral oil-----	100.0
Mono- and di-lorol phosphate mixture----	2.5
Poly-alkylated phenol mixture producible by the high pressure catalytic hydrogen- ation of carbon monoxide-----	.5
30 Oil rosemary-----	.4

The oil rosemary is for the purpose of giving a distinct and pleasant odor to the lubricant.

As many different embodiments of this invention may be made without departing from the scope thereof, it is to be understood that the invention is not limited to the embodiment given except as defined by the appended claims.

What is claimed is:

- 40 1. A lubricant composition having metal surface corrosion inhibiting properties which includes a mineral oil, a mixture of 2:6-dimethyl phenol and 2:4:6-trimethyl phenol, and a mixture of mono- and di-lorol phosphates.
- 45 2. A gun oil comprising essentially a light lubricating oil, a mixture of 2:6-dimethyl phenol and 2:4:6-trimethyl phenol, and a mixture of mono- and di-lorol phosphate, there being about 0.5 part of the methyl phenol mixture and 2.5
- 50 parts of the phosphate mixture for each 100 parts of the lubricating oil.

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