

COMPRESSOR LUBRICANTS

HYPERTECH G3



CALUMET[™]
SPECIALTY PRODUCTS PARTNERS, L.P.

WHAT DO COMPRESSOR LUBRICANTS DO AND HOW?

The role of a lubricant in a polyethylene compressor is critical. These lubricants are designed to promote energy saving low frictional characteristics and good film strength in order to reduce wear on the elements of the compressor. In specialty applications, where compressors are used in applications that are food contact sensitive, the lubricant must also maintain compliance with applicable food and drug regulations for incidental contact.

Calumet HyperTech G3 polyethylene compressor lubricants are formulated with state of the art technology to meet the pressure and lubrication needs of the compressor and the regulatory needs of the process they serve.

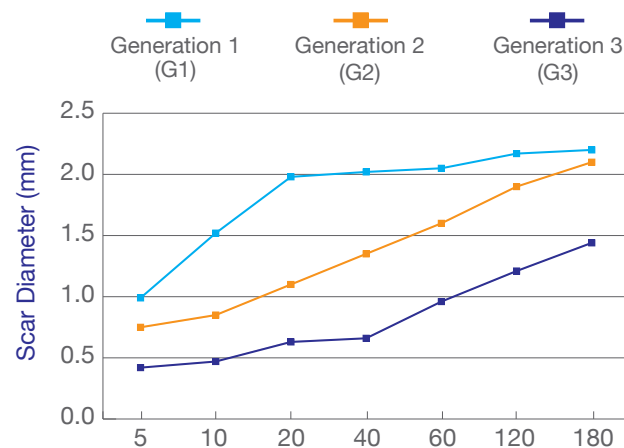
EVOLUTION OF CALUMET COMPRESSOR LUBRICANTS

Early compressor lubricants in specialty applications were typically basic White Mineral Oils used for the purposes of mechanical lubrication. As compressor and industry needs changed, it was necessary for these lubricants to evolve to meet the demands of the increased temperatures and pressures placed upon them.

Additive technology was introduced into these basic white mineral oils in response to these demands and this approach has been steadily progressing with the advancement of compressor and industry demands. The goal for improvement of the oils was a decrease in friction and wear within the compressor.

Figure 1

Evolution of Compressor Lubricants



Two key testing protocols have been established as benchmarks of success in enhancing these performance criteria. The Four Ball Wear Test and the relative Coefficient of Friction are parameters that polyethylene compressor lubricants must manage.

Today, Calumet's HyperTech G3 compressor lubricants represent the latest in performance technology.

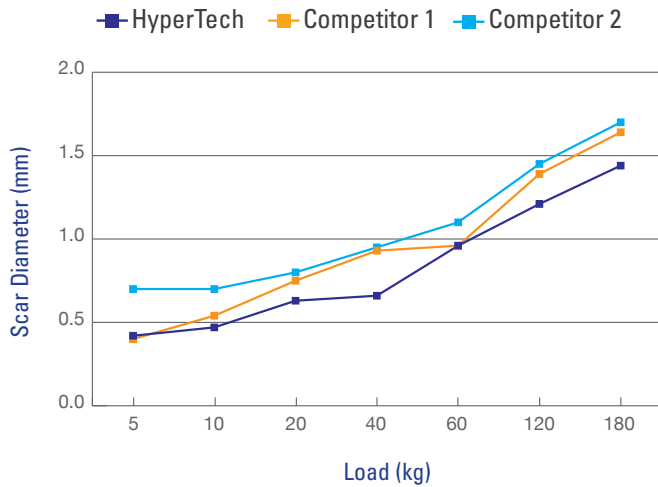
HOW DO THEY PERFORM AND HOW DO THEY COMPARE?

In recent studies performed on HyperTech G3 compressor lubricants, we show a remarkable improvement in wear performance over competing products with a 60% reduction in residual wear metals.

Improvement in wear performance typically results in formulations with lower Coefficient of Friction values. The frictional characteristics of the G2 oils that Calumet had developed were excellent and our goal was to maintain this

Figure 2

Four Ball

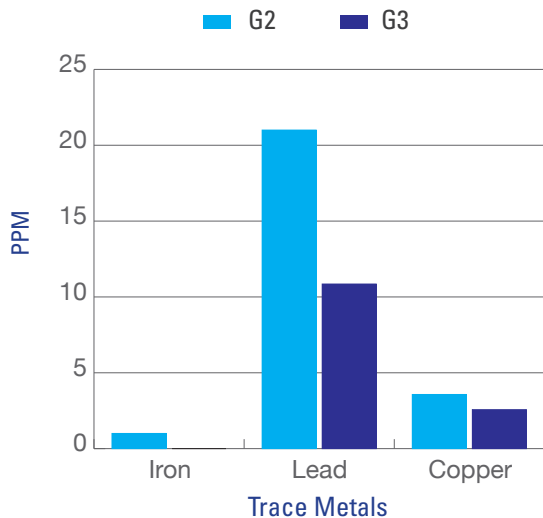


excellence and improve wear protection of the lubricant. HyperTech G3 Oils maintain outstanding frictional performance you have come to expect in today's compressor lubricants. The Four Ball Wear Test performance shown in **Figure 2** above demonstrates the remarkable improvement in wear characteristics of G3 oils over today's competition.

In addition, wear metals analysis provides an indication of the corrosion tendency of a compressor lubricant. HyperTech G3 compressor lubricants demonstrate a 60% reduction in wear metals over our G2 product (see **figure 3**).

Figure 3

Wear Metal Analysis



PRODUCT LINE

Calumet HyperTech 600 G3

(Product Code: PEN8120-00-C)

Calumet HyperTech 1000 G3

(Product Code: PEN8140-00-C)

Calumet HyperTech 1200 G3

(Product Code: PEN8160-00-C)

All HyperTech G3 Compressor lubricants are approved for use in food contact applications. They are NSF H1 Certified, are 21 CFR 178.3570 compliant in addition to being Kosher Certified.

FOR MORE INFORMATION

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