

**LUBE**

# TECHNI-GRAM



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## THE EVOLUTION OF MULTI-PURPOSE GREASES

In the early days of the grease manufacturing industry, limited knowledge and technology resulted in the formulation of various greases each of which could be used in a small number of applications. Thus, for passenger cars, one would have to purchase separate products for the many different grease applications such as cup, chassis, wheel bearing, water pump, universal joint, hinge and latch, and other applications.

Of course, with the early motor car, speeds were low, and so were operating temperatures. Calcium soap grease or aluminum soap grease, in different consistencies and made with different oils, could lubricate just about all parts of the vehicle. As roads and vehicles improved and more powerful engines became available, vehicles operated at higher speeds and loads. When applying brakes, wheel bearings rose in temperature above the capability of these products. For wheel bearings, sodium soap greases became the lubricants of choice. Sodium soap greases were also preferred as universal joint greases, because temperatures were high.

Problems arose due to the fact that sodium soap greases would wash out of chassis fittings. Thus calcium or aluminum soap greases or specially formulated soda soap greases were used in these parts.

Other problems also arose. In cases of severe water exposure, the water-soluble sodium greases would wash out of the wheel bearings. This happened in severe driving rainstorms when vehicles traversed flooded roads, etc. Thus, when more “multi-purpose” greases...both heat-and water-resistant...became available, they gradually displaced earlier products.

Industrial equipment went through the same evolutionary stages and was lubricated with similar products. Sodium or sodium-calcium soap greases lubricated electric motors; calcium (and some aluminum) soap greases were used for most general lubrication.

### **Increasing Versatility**

As more thickeners became available, better greases could be formulated for individual applications. This led to a proliferation of products. Simplification by use of multi-purpose greases cut the number of products, but did not eliminate the need for a variety of specialties. Some greases are used at high temperatures, others at low temperatures, and still others under a wide range of temperatures. Some are used under wet conditions, and some face difficult pumping conditions...long distances, narrow lines, and/or low temperatures. Loads may also be heavy. Sometimes contaminants needed to be flushed out, which required frequent relubrication.



*... to keep it running*

As grease manufacturers continued formulating greases for special-purpose or multi-service applications, they had to consider a wide range of operating conditions, suitable thickeners, acceptable fluids, beneficial additives, and appropriate performance tests. The conclusion of the lubricants industry, and the official position of the National Lubricating Grease Institute (NLGI) is that there is no such thing as a theoretically best grease...or, no one grease can satisfy every application need ...but there may be a best product for a particular application.

We at SWEPCO have always been in agreement with NLGI on this subject...that is precisely why our grease line up to this point has been made up of “niche” greases which are basically targeted for extraordinary performance in specific application areas. The next best thing to an ALL purpose grease is the concept of a multi-purpose or multi-service grease. But, until now, formulation of this type required serious performance compromises in one area or another.

### **ENTER SWEPCO 121 TRI-PLEX UNIVERSAL GREASE**

SWEPCO 121 Tri-Plex Universal Grease represents a significant advancement in grease formulation which involves new chemistry and new manufacturing processes. This new technology is a major improvement of the conventional aluminum complex category of greases...an improvement we call “**Tri-Plex**” chemistry. By creating bonds with all three of the available attachment points of the aluminum soap molecule (rather than just two as is the nature of conventional aluminum complexes) a much tighter molecular bond is formed in the grease. This affects a great many performance parameters in a very positive way. Special polymer modification techniques...and SWEPCO’s **SPX Technology™** ...further enhance performance.

The new formulation and manufacturing technology incorporated in SWEPCO 121 breaks through the barrier of previous performance compromises in one area or another and produces a grease that can be used without performance compromises in an extraordinarily wide range of applications. As a practical matter, SWEPCO 121 will provide excellent, long life service in all but the most extreme conditions of heat, extreme pressure or contamination. This makes it a “universal” grease and provides a greater opportunity for consolidation of grease inventories for our customers. SWEPCO 121 can be used in all types of bearings, greased gearing, chassis lubrication, king pins, u-joints, disc brake calipers, trailer wheel bearings, couplings, fifth wheels, general manufacturing use up to 375°F. continuous and 450°F. intermediate, as well as centralized lubrications systems. And, low temperature applications down to -30°F. are no problem for SWEPCO 121 Tri-Plex Grease.