

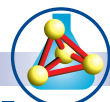
LUBRICANT PERFORMANCE ADDITIVES

Additive Technologies for
Electrical Vehicle Applications

Our specialized
additives for the
EV industry are
designed to keep
you moving.



Lubricant Performance Additives



Italmatch Chemicals

THE DIFFERENCE IS CHEMISTRY.™



We produce custom components designed to formulate highly engineered lubricants.

We can provide components, partial performance packages and complete packages to meet individual requirements. By starting with key additive components and applying our innovative formulation expertise we can supply products to give our customers a competitive edge.

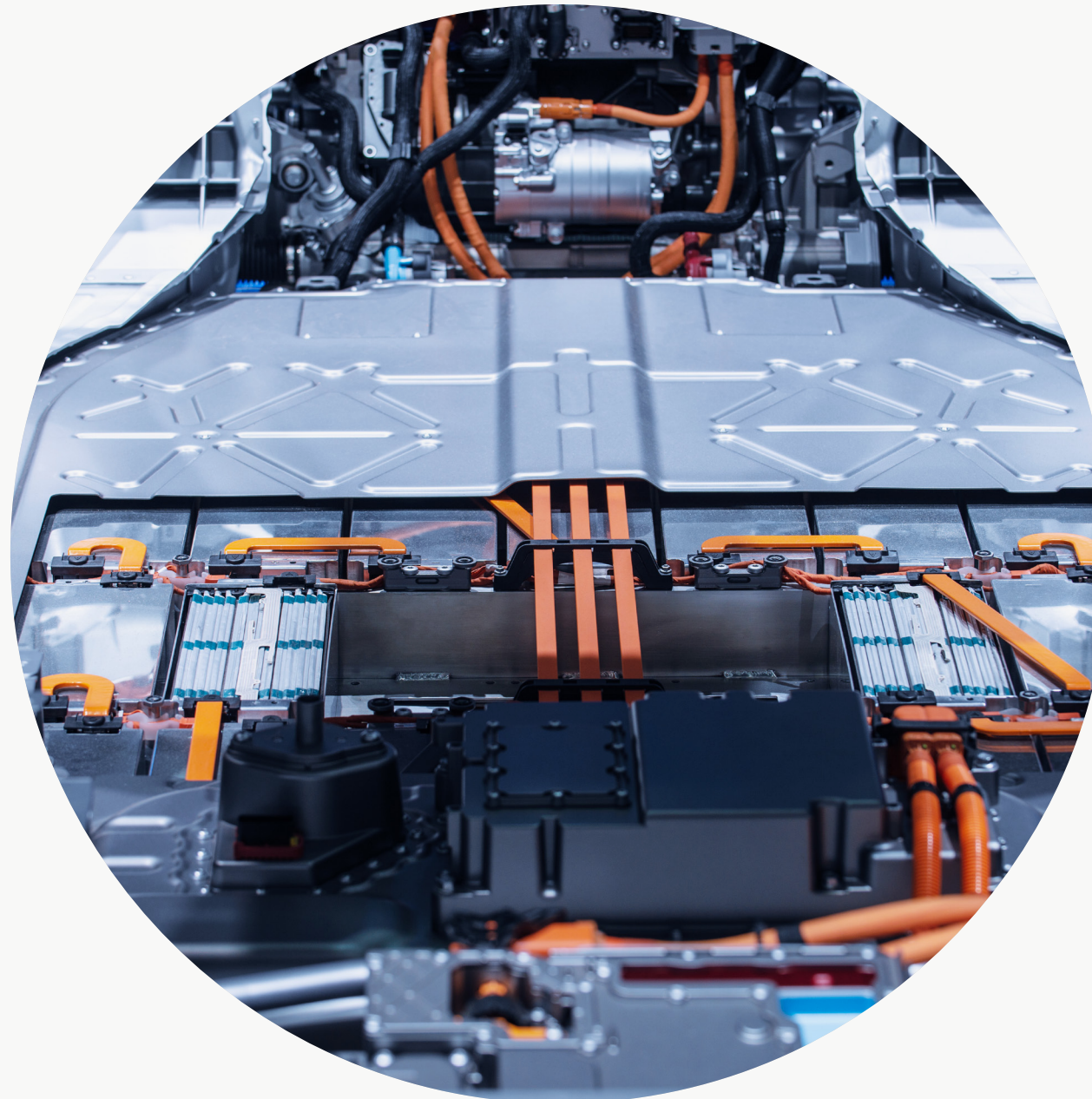
HOW TO BUILD A BETTER EV FLUID

ANTI-WEAR COMPONENTS

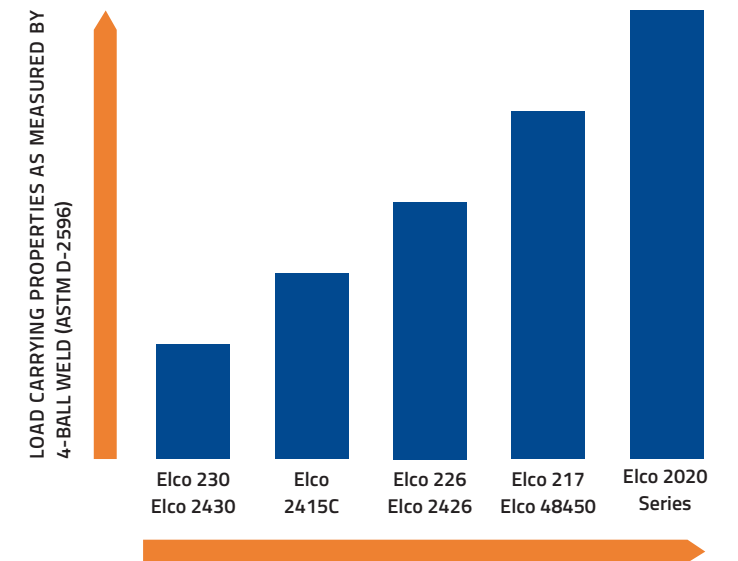
Elco 103	Li, LiX improves oxidation stability, copper corrosion and dropping point
Elco 102	Long chain ZDDP for improved oxidation stability
Elco 160 D	Highly effective ashless AW additive

APPLICATION SPECIFIC

Rust Inhibitors	Dapraphos E301, Dapraphos E303
Copper Corrosion Inhibitor	Elco 461, Elco 468
Antioxidant	Elco 8900
Sulfur Free	Dapraphos E670, Elco 3
Grease Additives	Elco 8715, Elco 48344, Elco 48575



ELCO EP ADDITIVES DRIVE INCREASING PERFORMANCE



KETJENLUBE™ PERFORMANCE ESTERS

- Enhances friction characteristics
- Improves film strength
- Delivers excellent thermal stability
- Improves thermal conductivity
- Elastomeric compatibility

KL 135
 KL 240
 KL 2300
 KL 2700
 KL 230/KL 240

Future Perspectives



Image: Sophie Jonas at Unsplash

At the time of writing, electrification technologies are rapidly changing. New gear and transmission technologies are being developed using legacy lubricant and additive technology. However, beyond the usual concerns of extreme pressure, anti-wear, oxidative stability, corrosion protection and lubricity new variables are emerging that are directly attributable to electric vehicles and their unique operating conditions.

A whole new range of issues has been identified as noted in just about every article being published on the topic. You may have seen references to Plug-in Hybrid Electrical Vehicle (PHEV), Electrical Vehicle (EV), MPGe (EPA-measurement for miles per gallon for an electric vehicle), Battery Electrical Vehicles (BEV), and onward.

As our technology vocabulary expands, so does the list of new engineering challenges as these operating systems develop issues. Some of these challenges include copper corrosion in traditional and vapor phases, noise reduction, high torque low speed, micro pitting, scuffing, and thermal transfer management. All these issues offer both challenging new problems and opportunities to differentiate your lubricants.

Italmatch Chemicals is well positioned for the future to help you develop the right lubricants for the right application. The fundamentals of phosphorous and sulfur chemistry combined with polymeric technologies offer tomorrow's solutions today. Our ability to modify current proven technology into designs that address these new issues is exactly what has driven us for the past generation and will continue to do so going forward.

Let us work together for the future.

For more information please scan the QR code to go directly to www.LubePerformanceAdditives.com



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1000 Belt Line Street, Cleveland, OH USA 44109-2800 P: 800-321-0467 or 216-749-2605 www.lubepformanceadditives.com