



DURAPHOS® 178

An excellent anti-wear / extreme pressure additive for e-driveline and metalworking fluids

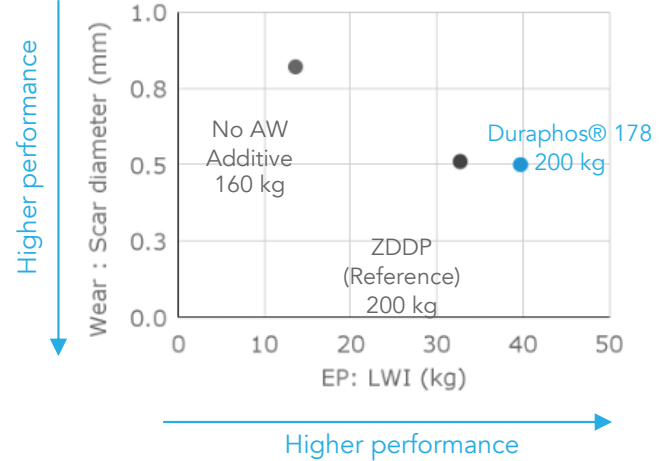
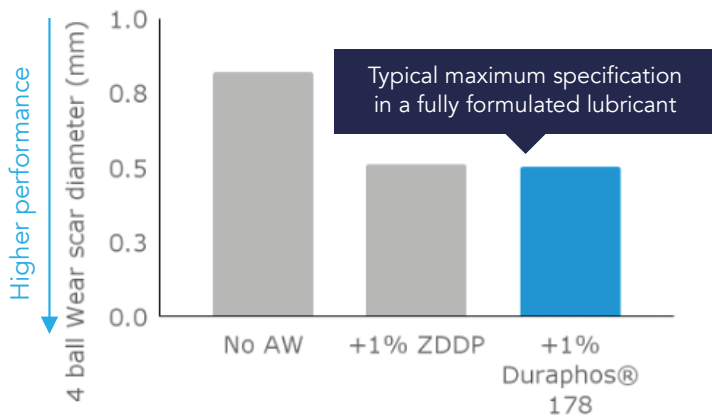
Features and Benefits

- Metal-free and Sulfur-free
- High copper corrosion protection
- Outstanding anti-wear performance with extreme pressure capability

The vehicle electrification process brings technical challenges to the automotive lubricant industry, which leads to a technology shift that requires fluids with enhanced efficiency, metal-free and sulfur-free and compatible with Copper. ZDDP-based products are very popular and are still used in engine oil, however, in transmission and gear oils it has been progressively replaced by other technologies and is unlikely to be used in EVs due to their inherent limitations.

Metal-free, Sulfur-free uncompromising Anti-wear performance with Extreme pressure benefits

DURAPHOS® 178 presents equivalent anti-wear performance to ZDDP, with same level of performance in fully formulated gear oils and electric vehicle fluids, while being ashless. Another advantage of DURAPHOS® 178 is its extreme pressure capability, with better performance than ZDDP, providing a medium extreme pressure performance. It also presents friction behavior fitting with driveline system requirements.



Testing Conditions	4 ball wear test - ASTM D4172	4 ball EP - ASTM D2783
	1200 rpm - 60 min - 75° C - 40 kg 1% wt AW in Group II: KV100° C = 9 cSt	1760 rpm - 35° C - 10 s/load; % wt AW in Group II: KV100° C = 9 cSt

Copper corrosion protection benefits

DURAPHOS® 178 is a multifunctional AW/EP solution providing excellent anticorrosion performance, including copper corrosion.

2e
Fully formulated Driveline oil



1b
Fully formulated Driveline oil + 1% Duraphos® 178

Testing Conditions
ASTM D130 : 3h @ 121° C, fully formulated driveline oil

Learn more about our specialty additives for lubricants and metalworking fluids by visiting our new [online hub](#) and download our brochure. [Contact us](#) for more information or a sample.



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