

## WEAR METALS

Metal	Engines	Transmissions	Gears	Hydraulics
Iron (Fe)	Cylinder Liners, Rings, Gears, Crankshaft, Camshaft, Valve Train, Oil Pump Gear, Wrist Pins	Gears, Disks, Housing, Bearings, Brake Bands, Shaft	Gears, Bearings, Shaft, Housing	Rods, Cylinders, Gears
Chrome (Cr)	Rings, Liners, Exhaust Valves, Shaft Plating, Stainless Steel Alloy	Roller Bearings	Roller Bearings	Shaft
Aluminum (Al)	Pistons, Thrust Bearings, Turbo Bearings, Main Bearings (Caterpillar)	Pumps, Thrust Washers	Pumps, Thrust Washers	Bearings, Thrust Plates
Nickel (Ni)	Valve Plating, Steel Alloy from Crankshaft, Camshaft, Gears from Heavy Bunker Type Diesel Fuels	Steel Alloy from Roller Bearings and Shaft	Steel Alloy from Roller Bearings and Shaft	
Copper (Cu)	Lube Coolers, Main and Rod Bearings, Turbo Bearings, Lube Additive	Bushings, Clutch Plates, (Auto/Powershift), Lube Coolers	Bushings, Thrust Plates	Bushings, Thrust Plates, Lube Coolers
Lead (Pb)	Main and Rod Bearings, Bushings, Lead Solder	Bushings (Bronze Alloy), Lube Additive Supplement	Bushings (Bronze Alloy), Grease Contamination	Bushings (Bronze Alloy)
Tin (Sn)	Piston Flashing, Bearing Overlay, Bronze Alloy, Babbit Metal along with Copper and Lead	Bearing Cage Metal	Bearing Cage Metal, Lube Additive	
Cadmium (Cd)	N/A	N/A	N/A	N/A
Silver (Ag)	Wrist Pin Bushings, (EMS's) Silver Solder (from Lube Collers)	Torrington Needs Bearings (Allison)	N/A	Silver Solder (from Lube Coolers)
Titanium (Ti)	Gas Turbine Bearings/Hub/Bladers, Paint (white lead)	N/A	N/A	N/A
Vanadium (V)	From Heavy Bunker Type Diesel Fuels	N/A	N/A	N/A