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## TRACE METALS IN FLUIDS

<b>Metallic Element</b>		<b>Possible sources</b>
Aluminium	Al	Desiccants and purification media such as Selexsorb and activated alumina, pistons, bearings, dirt, casting sand, pumps and some grease thickeners.
Antimony	Sb	Some babbitt bearings and additives like antimony dialkyldithiocarbamate.
Boron	B	Dispersants, buffers and cleaners.
Calcium	Ca	Fullers earth, detergents in motor oils or cleaners, and cement dust.
Chromium	Cr	Present at 5-8 ppm as an artefact of ICP spectroscopy with phosphate esters. From metal plating, rings, bearings, coolants, gears or wear, weld splatter or grinding dust from stainless steel.
Copper	Cu	Coolers, bearings, bushings, thrust bearings or thrust washers. Also bronze components if these were used in valves or the like.
Iron - steel	Fe	Wear or corrosion of pump or valves or filter parts or bodies. Can include servo-valve spools and bodies. Also fuller's earth. Piping and reservoirs are stainless steel so these are less likely as a source.
Lead	Pb	Babbitted and bronze bearings, thrust washers, older greases, paints and gasoline, and lead based solder.
Lithium	Li	Thickener used in some greases.
Magnesium	Mg	Component of fuller's earth and or some motor oil detergent additives.
Nickel	Ni	Gear plating, stainless steel parts or coatings and some pastes.
Phosphorous	P	A basic component of phosphate esters and some additives like ZDDP.
Silicon	Si	Dirt, sand or fly ash, antifoam additives, silicon bronze bearing, pump silicon carbide mechanical seals, desiccants or silicone elastomers or sealants (i.e. RTV).
Sodium	Na	Component of some purification media such as molecular sieves, Selexsorb and activated alumina. Also, salt water, coolant additive, soda soap grease, road salt or sweat and fibreglass.
Tin	Sn	Babbitted bearings, solder, coolers or corrosion protective coatings.
Zinc	Zn	Plating on parts i.e. filter endcaps, oil or grease additive (ZDDP), bearings, brass, neoprene seals, white (ZnO) greases and some paints. Also can be an artefact of ICP detection of phosphorous.

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