

## FA-ST Contamination Elements

Element	Source of Contamination
Aluminum (Al)	Bearings - Bushes - Blocks - Pistons - Blowers - Pumps - Clutches - Washers - Ingested Dirt
Barium (Ba)	Detergent/Dispersant Additive
Boron (B)	Coolant Additive - EP Additive
Cadmium (Cd)	Coatings on Metals
Calcium (Ca)	Detergent/Dispersant Additive - Salt Water - Road Salt
Chromium (Cr)	Bearings - Rings - Rollers - Liners - Exhaust Valves - Seals - Shafts - Coolant Treatment
Copper (Cu)	Bearings - Bushes - Washers - Pumps - Gears - Antiwear Additive
Iron (Fe)	Blocks - Bearings - Cylinders - Pumps - Liners - Gears - Pistons - Rings - Discs - Shafts - Valves - Screws
Lead (Pb)	Bearings - Additives
Magnesium (Mg)	Hard Water - Detergent/Dispersant Additive
Manganese (Mn)	Detergent Additive
Molybdenum (Mo)	Rings - Friction Modifier - Antiwear Additive
Nickel (Ni)	Bearings - Valves - Shafts
Phosphorus (P)	Antiwear Additive
Silicon (Si)	Seals - Gaskets - Ingested Dirt - Coolant Additive - Antifoaming Additive
Silver (Ag)	Bearings - Bushings - Solder
Sodium (Na)	Coolant Additive - Road Salt - Detergent Additive
Tin (Sn)	Bearings - Bushings - Pistons
Titanium (Ti)	Turbine Blades - Compressor Discs - Bearing Hubs
Vanadium (V)	Valves - Coating on Metals
Zinc (Zn)	Antiwear/Inhibitor Additive