

# Potential Source of Spectrometry Metals

Wear Metals  
 Contaminants & Additives

Revised Oct. 3, 2008

Aluminum (Al)	Antimony (Sb)	Barium (Ba)	Beryllium (Be)	Boron (B)	Cadmium (Cd)
<p>Wear Metals:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Bearings</li> <li><input type="checkbox"/> Blocks</li> <li><input type="checkbox"/> Blowers</li> <li><input type="checkbox"/> Bushings</li> <li><input type="checkbox"/> Clutches</li> <li><input type="checkbox"/> Cylinders</li> <li><input type="checkbox"/> Housings</li> <li><input type="checkbox"/> Pistons</li> <li><input type="checkbox"/> Pump Bushings</li> <li><input type="checkbox"/> Motor Housing</li> <li><input type="checkbox"/> Rotors</li> <li><input type="checkbox"/> Thrust Bearings</li> <li><input type="checkbox"/> Thrust Washers</li> </ul> <p> <input checked="" type="checkbox"/> Abrasives:           <ul style="list-style-type: none"> <li><input type="checkbox"/> Alumina</li> <li><input type="checkbox"/> Bauxite</li> <li><input type="checkbox"/> Catalyst</li> <li><input type="checkbox"/> Coal</li> <li><input type="checkbox"/> Fly Ash</li> <li><input type="checkbox"/> Foundry Dust</li> <li><input type="checkbox"/> Granite</li> </ul> </p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Alloy Steel</li> <li><input checked="" type="checkbox"/> Ceramic Products</li> <li><input checked="" type="checkbox"/> Paint</li> </ul>	<p>Wear Metals:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Alloy Steel</li> <li><input checked="" type="checkbox"/> Ceramic Products</li> <li><input checked="" type="checkbox"/> Paint</li> </ul>	<p>Wear Metals:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Fuel Additive</li> <li><input checked="" type="checkbox"/> Grease Thickener</li> <li><input checked="" type="checkbox"/> Oil Additive: Detergent</li> </ul>	<p>Wear Metals:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Alloy Steel</li> </ul>	<p>Wear Metals:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Coolant Inhibitor</li> <li><input checked="" type="checkbox"/> Oil Additive           <ul style="list-style-type: none"> <li><input type="checkbox"/> Anti Wear</li> <li><input type="checkbox"/> Detergent</li> <li><input type="checkbox"/> Extreme Pressure</li> </ul> </li> <li><input checked="" type="checkbox"/> Oil Drum Cleaning</li> <li><input checked="" type="checkbox"/> Water Treatment</li> </ul>	<p>Wear Metals:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Journal Bearings</li> <li><input type="checkbox"/> Plating</li> </ul>
Calcium (Ca)	Chromium (Cr)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Magnesium (Mg)
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Cement Dust</li> <li><input checked="" type="checkbox"/> Fuller's Earth</li> <li><input checked="" type="checkbox"/> Grease Thickener</li> <li><input checked="" type="checkbox"/> Gypsum</li> <li><input checked="" type="checkbox"/> Hard Water</li> <li><input checked="" type="checkbox"/> Lignite</li> <li><input checked="" type="checkbox"/> Limestone</li> <li><input checked="" type="checkbox"/> Mining Dust</li> <li><input checked="" type="checkbox"/> Oil Additive: Detergent, Rust Inhibitor</li> <li><input checked="" type="checkbox"/> Road Dust</li> <li><input checked="" type="checkbox"/> Rubber</li> <li><input checked="" type="checkbox"/> Salt Water</li> <li><input checked="" type="checkbox"/> Slag</li> </ul>	<p>Wear Metals:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Exhaust Valves</li> <li><input type="checkbox"/> Liners</li> <li><input type="checkbox"/> Low Alloy Steel</li> <li><input type="checkbox"/> Oil Coolers</li> <li><input type="checkbox"/> Rings</li> <li><input type="checkbox"/> Rods</li> <li><input type="checkbox"/> Roller/Taper Bearings</li> <li><input type="checkbox"/> Stainless Steel</li> </ul> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Water Treatment</li> <li><input checked="" type="checkbox"/> Other Chemicals</li> <li><input checked="" type="checkbox"/> Paint</li> </ul>	<p>Wear Metals:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Oil Pumps</li> <li><input type="checkbox"/> Babbitt Bearings (underlay)</li> <li><input type="checkbox"/> Bearing Cage</li> <li><input type="checkbox"/> Brass</li> <li><input type="checkbox"/> Bronze</li> <li><input type="checkbox"/> Cam Bushings</li> <li><input type="checkbox"/> Clutches</li> <li><input type="checkbox"/> Governor</li> <li><input type="checkbox"/> Guides</li> <li><input type="checkbox"/> Oil Cooler</li> </ul> <ul style="list-style-type: none"> <li><input type="checkbox"/> Pump Pistons &amp; Thrust Plates</li> <li><input type="checkbox"/> Steering Discs</li> <li><input type="checkbox"/> Valve Train Bushings</li> <li><input type="checkbox"/> Wear Plates</li> <li><input type="checkbox"/> Wrist Pin Bushings</li> </ul> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Oil Additive           <ul style="list-style-type: none"> <li><input type="checkbox"/> Anti Wear</li> </ul> </li> <li><input checked="" type="checkbox"/> Paint</li> </ul>	<p>Wear Metals:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Bearings</li> <li><input type="checkbox"/> Blocks</li> <li><input type="checkbox"/> Brake Bands</li> <li><input type="checkbox"/> Camshaft</li> <li><input type="checkbox"/> Cast Iron</li> <li><input type="checkbox"/> Crankshafts</li> <li><input type="checkbox"/> Cylinders</li> <li><input type="checkbox"/> Discs</li> <li><input type="checkbox"/> Gears</li> <li><input type="checkbox"/> Housing</li> </ul> <ul style="list-style-type: none"> <li><input type="checkbox"/> Hydraulic Pump           <ul style="list-style-type: none"> <li><input type="checkbox"/> Vanes</li> <li><input type="checkbox"/> Gears</li> <li><input type="checkbox"/> Pistons</li> </ul> </li> <li><input type="checkbox"/> Liners</li> <li><input type="checkbox"/> Oil Pump</li> <li><input type="checkbox"/> PTO</li> <li><input type="checkbox"/> Rings</li> <li><input type="checkbox"/> Screws</li> <li><input type="checkbox"/> Shafts</li> </ul>	<p>Wear Metals:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Babbitt</li> <li><input type="checkbox"/> Journal Bearing Overlay</li> <li><input type="checkbox"/> Bronze alloy</li> <li><input type="checkbox"/> Solder</li> </ul> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Gasoline Additive</li> <li><input checked="" type="checkbox"/> Paint</li> <li><input checked="" type="checkbox"/> Road Dust           <ul style="list-style-type: none"> <li><input type="checkbox"/> Balancing Weights</li> </ul> </li> </ul>	<p>Wear Metals:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Turbine Metallurgy</li> <li><input checked="" type="checkbox"/> Hard Water</li> <li><input checked="" type="checkbox"/> Oil Additive: Detergent</li> <li><input checked="" type="checkbox"/> Road Dust</li> <li><input checked="" type="checkbox"/> Seawater</li> <li><input checked="" type="checkbox"/> Fuller's Earth</li> </ul>
Molybdenum (Mo)	Nickel (Ni)	Phosphorous (P)	Potassium (K)	Silicon (Si)	Silver (Ag)
<p>Wear Metals:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Alloy Steel</li> <li><input type="checkbox"/> Rings</li> </ul> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Oil Additive: Extreme Pressure</li> </ul>	<p>Wear Metals:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Hardened Steels</li> <li><input type="checkbox"/> Stainless Steels</li> <li><input type="checkbox"/> Plating</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Oil Additive,           <ul style="list-style-type: none"> <li><input type="checkbox"/> Anti Wear</li> <li><input type="checkbox"/> Extreme Pressure</li> </ul> </li> <li><input checked="" type="checkbox"/> Cleaning Detergent</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Coolant Inhibitor</li> <li><input checked="" type="checkbox"/> Fly Ash</li> <li><input checked="" type="checkbox"/> Fuel Element</li> <li><input checked="" type="checkbox"/> Granite</li> <li><input checked="" type="checkbox"/> Paper Mill Dust</li> <li><input checked="" type="checkbox"/> Road Dust</li> </ul>	<p>Wear Metals:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Alloy Steel</li> </ul> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Asbestos</li> <li><input checked="" type="checkbox"/> Cement Dust</li> <li><input checked="" type="checkbox"/> Fly Ash</li> <li><input checked="" type="checkbox"/> Coolant Additive</li> <li><input checked="" type="checkbox"/> Glass</li> <li><input checked="" type="checkbox"/> Granite</li> <li><input checked="" type="checkbox"/> Grease</li> <li><input checked="" type="checkbox"/> Limestone</li> <li><input checked="" type="checkbox"/> Oil Additive Antifoam</li> <li><input checked="" type="checkbox"/> Road Dust</li> </ul> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Synthetic Lubricant</li> <li><input checked="" type="checkbox"/> Slag</li> <li><input checked="" type="checkbox"/> Sealant</li> </ul>	<p>Wear Metals:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Bearing Overlay</li> <li><input type="checkbox"/> Needle Bearings</li> <li><input type="checkbox"/> Oil Coolers (Solder)</li> <li><input type="checkbox"/> Wrist Pin Bushings (EMD Engines)</li> </ul>
Sodium (Na)	Tin (Sn)	Titanium (Ti)	Vanadium (V)	Zinc (Zn)	<p><b>If you have any questions about this chart, call of one our locations below:</b></p> <p>9321 - 48 Street Edmonton, AB T6B 2R4 Phone: (780) 462-2400 Fax: (780) 462-2420 Toll Free: 1-877-962-2400</p> <p>95 Copernicus Blvd. Brantford, Ontario N3P 1N4 Phone: (519) 720-9700 Fax: (519) 720-9705</p>
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Activated Alumina</li> <li><input checked="" type="checkbox"/> Coolant Inhibitor</li> <li><input checked="" type="checkbox"/> Dirt</li> <li><input checked="" type="checkbox"/> Fly Ash</li> <li><input checked="" type="checkbox"/> Grease</li> <li><input checked="" type="checkbox"/> Oil Additives</li> <li><input checked="" type="checkbox"/> Paper Mill Dust</li> <li><input checked="" type="checkbox"/> Road Salt</li> </ul>	<p>Wear Metals:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Bearing Cage</li> <li><input type="checkbox"/> Babbitt</li> <li><input type="checkbox"/> Bearing Flashing</li> <li><input type="checkbox"/> Piston Overlay</li> <li><input type="checkbox"/> Solder</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Gas Turbine Bearings</li> <li><input type="checkbox"/> Turbine Blades</li> </ul> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Paint</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Turbine Blades</li> <li><input type="checkbox"/> Valves</li> </ul> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Bunker Oil</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Brass</li> <li><input type="checkbox"/> Plating</li> </ul> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Cathodic Protection</li> <li><input checked="" type="checkbox"/> Galvanizing</li> <li><input checked="" type="checkbox"/> Grease</li> <li><input checked="" type="checkbox"/> Oil Additive, Antiwear</li> </ul>	