



X-Ray Fluorescence Spectroscopy (XRF) is a type of spectroscopy analytical technique used for the elemental analysis and evaluation of both liquid samples (i.e. oil, fuel) and solid particulate (i.e. spinner debris, sediment patches, etc.)

XRF does not have a particle size limitation and can be used to measure particles of virtually of any size. Critical large particle detection and assessment can provide early detection of failure, large particle contamination and measurement of abnormal wear.

XRF analysis provides the following advantages:

- Potential for advance warning of failures with large size particulate not presently detected on ICP (Spectrometry/Inductively Coupled Plasma).
- Full range of element concentration (sub ppm level – concentration up to 100%.)
- Can detect particles including contamination and wear metals of virtually any size.
- Qualitative identification of particles on a sediment or ISO filter patch.
- Potential comparison of ICP and XRF results to detect appearance and trend of small versus large particles.
- Quantitative analysis of used oil samples.
- Qualitative / semi-quantitative analysis of filter debris.
- Versatile sample types including liquids (fuels, oils, etc.), solids (spinner debris, grease, sludge), filter media and sediment/ISO filter patches.

Fluid Life has established several major application areas for the XRF instrument which are either fully developed or currently under development. These applications include; Spinner Debris Analysis, Wear Metals in Oil, Sediment Filter Patch, Sulfur Content in Diesel or Oil, and Chlorine & Arsenic in Waste Oil.

Maintenance Solutions

Once a maintenance technician has the testing information to determine if there are wear metals or contaminants within a component a course of action can be taken such as:

- Adjusting or optimizing oil change intervals
- Modifying their maintenance schedule to reduce the chance of failure based on the run time of the specific component resulting in reduced lubrication clearance zones.

