

EDXRF ANALYSIS OF OILS, FUELS AND OTHER FLUIDS, ON BOARD MARINE VESSELS.

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The analysis of liquids using xrf has been a long established technique for land based laboratory equipment. Typically a sample is analyzed in a liquid cup, either in an air or helium environment. For any analytical system to be effective on board an ocean going vessel, it needs some adaptations which help it work in the potentially harsh marine environment. A further challenge is the analytical requirement of measuring low concentrations (ppm) of light elements such as Al, Si and P in the presence of high concentrations (%) of S which would be extremely difficult to do with a traditional xrf system. To overcome the analytical and environmental challenges we have developed a xrf system which is NEMA-4 rated and uses a novel sample presentation system and sample excitation techniques. These developments allow the system to measure low levels of Al and Si (< 20ppm) in the presence of high concentrations of S (1-6%), while at the same time not compromising on the performance for other elements of interest.