Checking Cleaning Efficiency of Metal Parts using an InfraCal TOG/TPH Analyzer

For applications involving gas regulators, space shuttle components, weaponry parts or oxygen sensors, it is critical that metal parts must be free of hydrocarbon contamination before use. Prior to its ban due to ozone layer depletion, Freon was the most commonly-used solvent for metal parts cleaning. The metal part was soaked in a known volume of Freon, then the solvent was tested for its hydrocarbon content. Since Freon is an infrared transparent solvent and does not contain hydrocarbons, it can be placed directly into a 10mm quartz cuvette cell and inserted into an InfraCal Cuvette Holder Analyzer, Model CVH. The resulting absorbance at 3.4 µm correlates directly to the amount of hydrocarbon present in the sample. This made for a quick and easy analysis. It should be noted that the Model CVH is only usable with infrared transparent solvents.

Replacement solvents for Freon have been developed and are currently in use, although many of them such as Hexane and Vertrel MCA, contain hydrocarbons. Their hydrocarbon content interferes with the infrared measurement using a 10mm quartz cuvette cell and analysis by traditional transmission infrared techniques. Many labs have been forced to switch to a gravimetric method which is cumbersome and time consuming. Wilks Enterprise has developed the InfraCal IR Platform Analyzer, Model HATR-T2, which permits the use of solvents that contain hydrocarbons. The sample is placed on the analyzer's horizontal ATR crystal and the heat from the infrared source quickly evaporates off the solvent in 3-5 minutes. The residual hydrocarbon film left on the crystal is measured by internal reflection techniques. This method is as quick and simple as the transmission method.

If and when new solvents that are hydrocarbon free become available, the InfraCal Analyzer, Model HATR-T2, can be easily converted to a Model CVH and visa versa. All InfraCal Analyzers are designed and engineered to be rugged, easy-to-use portable instruments. They function well in field or plant environments, as well as in laboratories.

Ordering Information

405-1009	**InfraCal IR Platform Analyzer, Model HATR-T2.** Complete with HATR-T Sample Stage with Cubic Zirconia Trough Plate, Dust Cover, Power Supply and Instruction Manual.
405-0003	**InfraCal 10 mm Cuvette Holder Analyzer, Model CVH.** Complete with CVH Sample Stage for 10mm Quartz Cuvettes, Dust Cover, Power Supply and Instruction Manual. (Does not include 10 mm quartz cuvette cells.)
403-0012	**Set of 4 Matched 10 mm Quartz Cuvette Cells** with Teflon Stopper for use with Model CVH.

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