

# History for the FTIR SOP

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0	4/1/01	Original Issue	D.C. Sincerbeaux

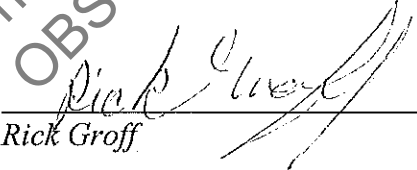
## Approval

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# Fourier Transform Infrared Spectrometer Standard Operating Procedure

## 1.0.0 Background

The Fourier Transform Infrared Spectrometer (FTIR) is an analytical instrument that is used to identify compounds based on their infrared absorption properties. The advantages of using FTIR are that it can differentiate stereo isomers and it is fast. A sample can be analyzed in less than five minutes. The main disadvantage is that in order to produce a high quality result; a sample with a purity of approximately 90% is needed.

## 2.0.0 Scope

This SOP will describe the routine maintenance and calibration standards necessary to perform quality analysis using a FTIR.

## 3.0.0 Equipment and Reagents

- 3.1.0 A FTIR and corresponding analytical software.
- 3.2.0 IR grade potassium bromide (KBr). Should be kept in a desiccator.
- 3.3.0 Hydraulic or other press for making KBr windows.
- 3.4.0 Any other sample introduction equipment, i.e. Gemini etc.

## 4.0.0 Routine Maintenance

- 4.1.0 Aside from the normal cleaning of the outside of the instrument, including the sample chamber, a thorough cleaning of the interior of the instrument should be done on an annual basis. Vacuum or spray away dust from interior of instrument making sure not to touch any of the mirrors.
- 4.2.0 Background spectra will be collected before any samples are run. Background spectra should be run once every hour when performing batch analysis.
- 4.3.0 Monthly calibration check. Using the manufacture's procedures, a calibration check of the instrument's performance is done using polystyrene film. This procedure will be performed monthly and after any maintenance. All printouts generated are initialed by the analyst and kept in the maintenance logbook. If the calibration does not pass and /or there is any other symptoms of system failure then consult the manufacture. All maintenance is recorded in a logbook.

### 5.0.0 Standard Library Preparation

In order to confirm the presence of an analyte in a sample, the scan of the sample must match that of a known standard. It is not acceptable to confirm on the basis of a match from a commercially produced library (Georgia State etc.).

#### 5.1.0 Production of valid standard library.

A pure sample of a standard is prepared and analyzed using the same procedures that will be used with an unknown. Once a scan has been produced it can then be stored in an internal library. A match made from this library is acceptable to use for confirmation. Libraries should be made up of all available standards including various salt forms and isomers (d & dl etc.). These standard scans can be produced and entered into the library as they are encountered in casework.

#### 5.2.0 Sample preparation methods are covered under the appropriate analytical method SOP's.

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