

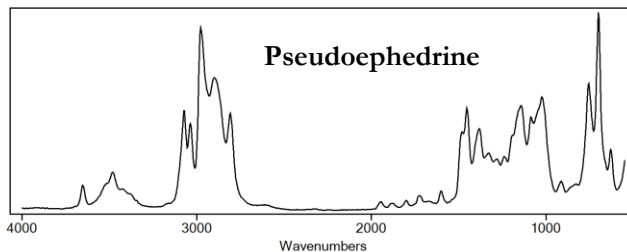
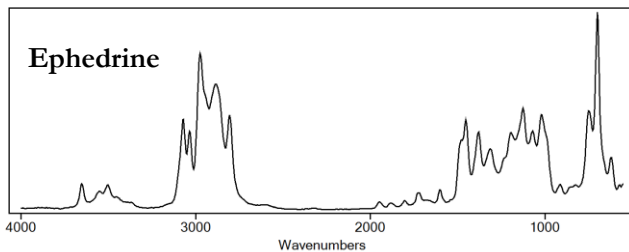
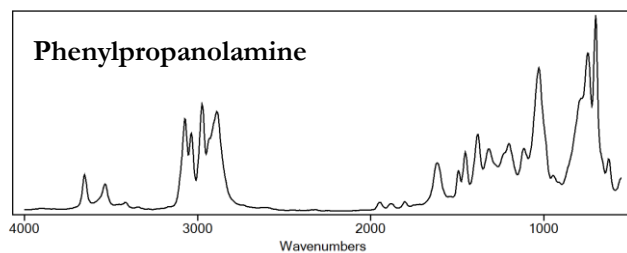
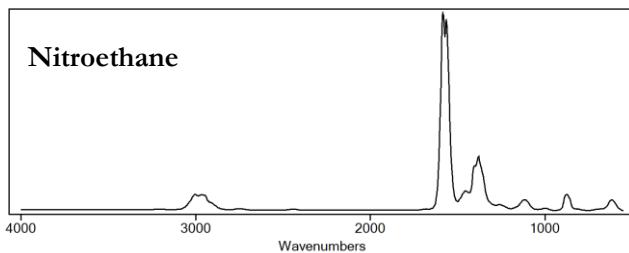
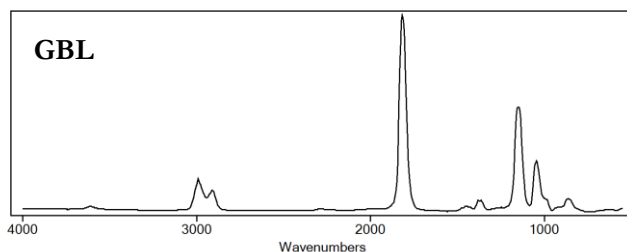
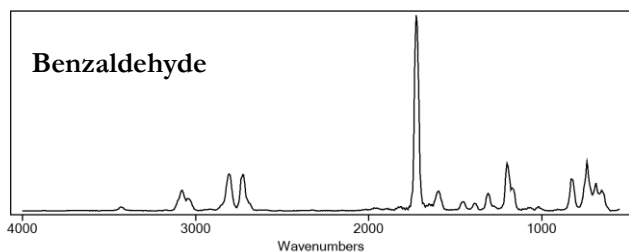
## IRD 3 Application Note

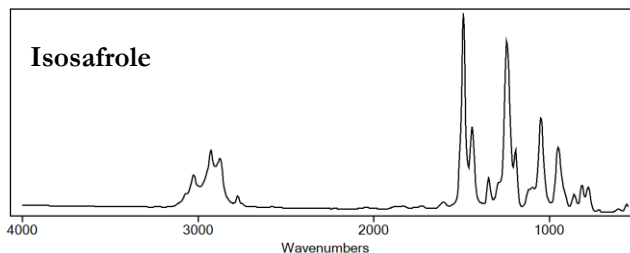
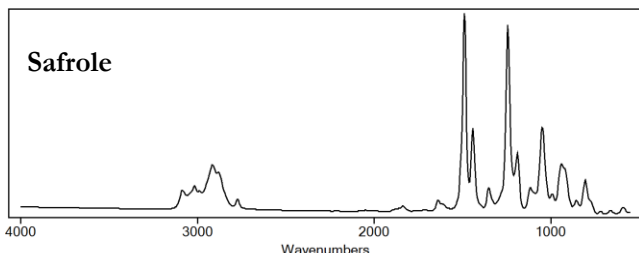
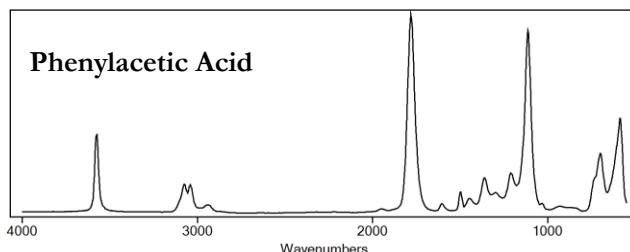
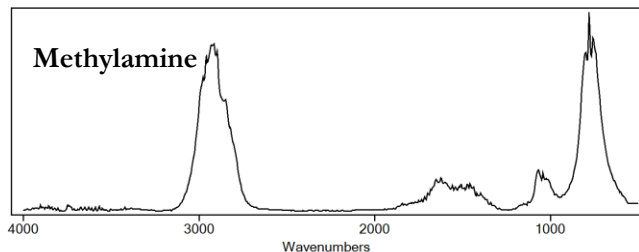
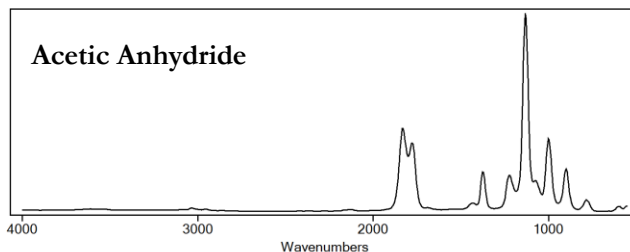
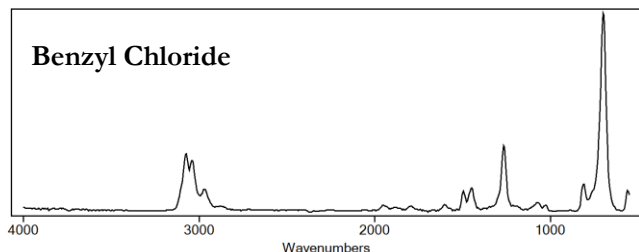
### Precursors

### Introduction

Many chemicals used in the manufacturing of pharmaceuticals, consumer goods, plastics and flavors are being used in the illicit manufacturing of drugs. Since most of these chemicals have a wide range of legitimate uses, their trade is often difficult to restrict. One example presented in this application note, acetic anhydride, has many legitimate uses in a wide range of industries but is also an important ingredient in heroin and methaqualone. Possibly the most notorious precursor chemicals are ephedrine and pseudoephedrine. Both are powerful decongestants and are used in many available medicines but they can also be used in the illegal production of methamphetamine. Since these chemicals cannot be banned outright many international regulatory committees aim to strike a balance between the control for illicit drug manufacturing and legitimate uses.

All of the spectra contained in this application note are known to be common drug precursors.





## Product Overview

The IRD 3 is designed from the chromatographer's point-of-view and is the only analytical infrared instrument that seamlessly combines the separating power of the Gas Chromatography with the molecular identification of FTIR.

- Dedicated FTIR for use with GC
- Low maintenance and easy to use
- Small footprint
- Software interfaces with GC control software
- Seamless integration with MS

The IRD 3 is the perfect tool for the chromatographer looking to obtain more information about unknown samples. Using a heater light pipe flow cell, the sample is kept in a vapor state while interacting with IR. This allows the molecules to freely rotate in a low energy environment. Keeping the molecular geometry in tack during analysis provides unique and highly reproducible spectra.

