

APPLICATION NOTE 011

Infrared Spectra of Phenylethylamines Obtained by GC-IR

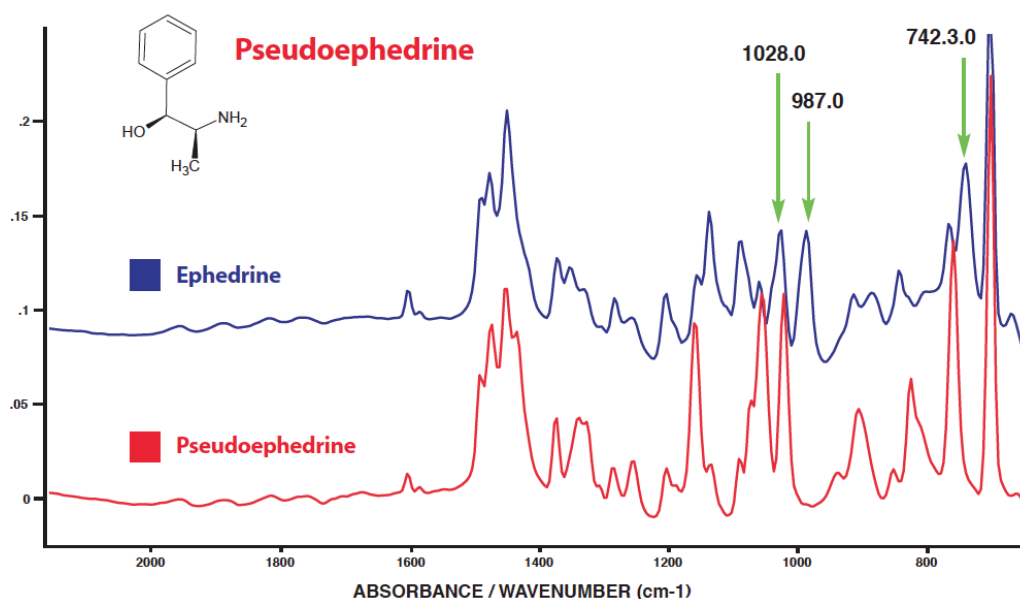
The spectra of the following closely related compounds are shown:

- Ephedrine vs.Pseudoephedrine **Figure 1**
- Amphetamine vs.Methamphetamine **Figure 2**
- MDA vs.MDMA **Figure 3**

Phenylethylamines are commonly used components in illicit drug manufacturing. Clandestine drug labs have created the need for unequivocal identification of these compounds from complex mixtures.

The DiscovIR system attaches to any GC and gives high quality infrared spectra of all the individual sample components in a mixture in real time. The **DiscovIR** system adapts to existing workflows and accommodates most chromatographic methods.

The most difficult structural feature to determine is the stereochemistry of a molecule. Ephedrine is a sympathomimetic alkaloid used as a muscle relaxant, central nervous system stimulant and cardiac muscle stimulant. (1R, 2S)-Ephedrine is available by prescription. Pseudoephedrine is a diastereomer of ephedrine and is used as a nasal decongestant. Pseudoephedrine is available over the counter with the (1S, 2S) stereochemistry. **Figure 1** shows clear differences in the fingerprint region of the two diastereomers ephedrine and pseudoephedrine. Ephedrine and pseudoephedrine were identified as the number one hits in their respective solid phase Infrared library searches.



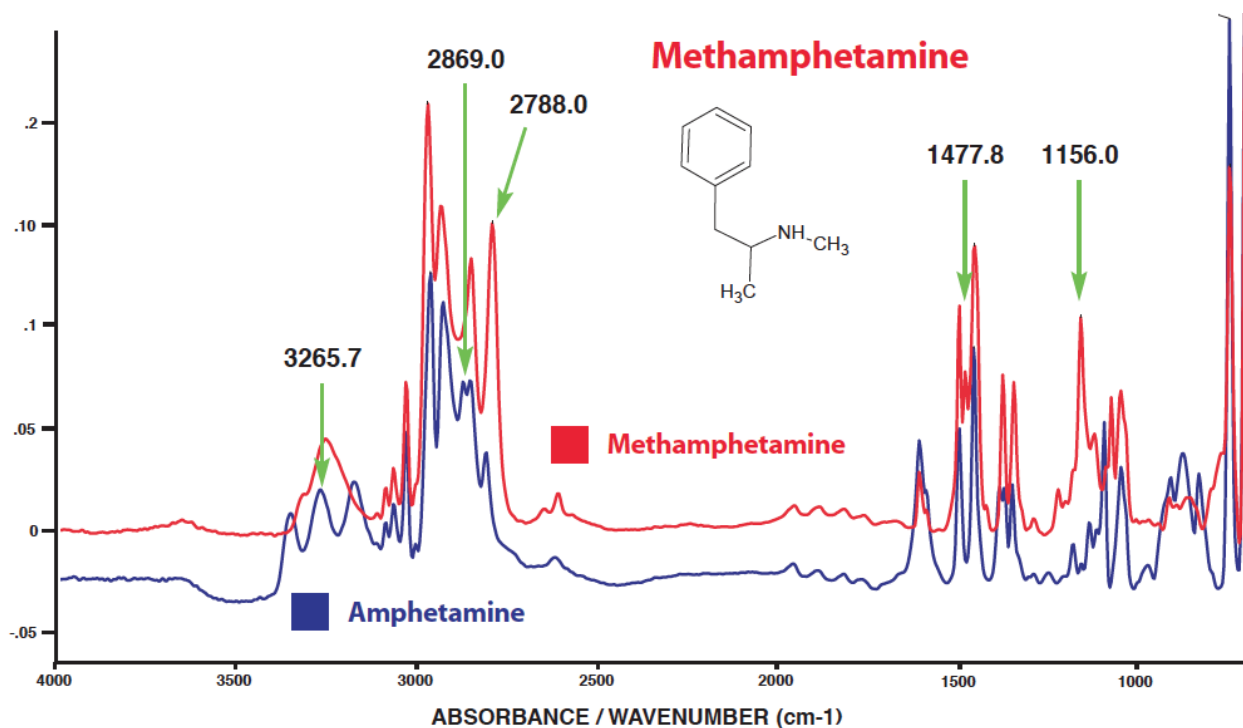


Figure 2 and Figure 3 compare the full scan spectra of closely related phenylethylamines.

