

## IR - Sadtler Pollutants (Vapor Phase) - Wiley

Spectra - 905

### Description

This infrared database of 905 vapor phase spectra provides a convenient spectral reference for industry, research, and all others who are engaged in analyzing, monitoring, controlling, or studying environmental, physiological, or occupational pollutants and toxic substances. Spectra are representative of those one would obtain using GC/FT-IR analysis where the spectra are measured above ambient temperature in a heated optical cell.

### Additional Information

Each compound is listed by its Chemical Abstracts name together with frequently used common names. The chemical structure, molecular formula, molecular weight, and CAS Registry number is provided for all compounds. Pertinent physical and instrumental data, including cell temperature, is also included.

### Technique

All spectra were measured in our laboratories on a Digilab FTS-14, -15 or -40 Fourier transform spectrometer and determined in the spectral region  $4000\text{ cm}^{-1}$  to  $450\text{ cm}^{-1}$  with a nominal resolution of  $4\text{ cm}^{-1}$  being maintained across the entire spectral region. A Sadtler CIRA 101 chromatographic infrared analyzer was used to vaporize and trap the compounds for examination. The carrier gas was helium. The compounds were examined at temperatures ranging from  $100^{\circ}\text{C}$  to  $280^{\circ}\text{C}$ ; the temperature used for each compound was based on the boiling point or melting point of the material, and its chemical stability. One microliter of liquid samples was injected into the CIRA 101 with the helium flow rate operating at  $20\text{ ml/min}$ . at the selected vaporization temperature.

For samples that were solids at ambient temperature,  $1\text{ mg}$  of sample was introduced into the system using the CIRA 101 Solid Sampling Accessory. For samples which were gases at room temperature, or low boiling liquids,  $500\text{ }\mu\text{l}$  of the vapor at atmospheric pressure was injected into the CIRA 101. The sample was trapped within the CIRA cell when the interferogram, monitored in real time on an oscilloscope, decreased in magnitude from the maximum to minimum level, therefore indicating maximum concentration of the compound inside the cell. The reference spectrum was then measured. After the spectrum was measured, the gas flow was restarted for 3 - 5 minutes to purge the sample from the system before proceeding to the next sample.

*This collection has been subject to the Sadtler Data Review Protocol™ to provide you with the highest standard in spectral data today. These rigorous qualifying procedures start at data acquisition and continue throughout the database development process.*