Introduction

Isomerization within the aromatic ring is different from that of ring substitution and ring junctions. This type of ring isomerization covers that of double bond position, heteroatom position and ring size. But just like any structural isomer, traditional Mass Spectrometers are not particularly helpful in identifying these differences. However, this is where the Infrared band width is useful and can complement the identification powers of mass spectrometers. Applications of these ring isomers are found in many areas of chemistry, especially industrial chemicals, environmental analysis and flavors and fragrances using the hyphenated approach of GC-IR.

Product Overview

The IRD 3 is designed from the chromatographer’s point-of-view and is unique in that it was designed to be used directly with a Gas Chromatograph (GC), and not just as a lab top FTIR. The IRD-3 seamlessly integrates the separating power of the GC with the molecular identification of an FTIR.

The IRD 3 is the perfect tool for the chromatographer looking to obtain more information about unknown samples. Using a heated light pipe flow cell, the sample is kept in the vapor state while interacting within the IR band width. Keeping the molecular geometry intact during analysis provides unique and highly reproducible spectra.

Results

A high confidence determination of these ring isomers was achieved using the Aldrich Vapor Phase Library (099-1908). Searches were conducted on all four compounds resulting in high quality index matches The GC-IRD

- 1,4 Cyclohexadiene
- 1,3 Cyclohexadiene
- Quinoline
- Isoquinoline

Key Features

- Vapor phase FTIR for use with GC and GC-MS
- Low Maintenance with no moving parts
- Smallest footprint available saves bench space
- Dedicated vapor phase libraries
- Single sequence table operates the entire GC-IRD system