

## MONITORING THE INTERFACE BETWEEN AROMATIC COMPOUNDS TRANSPORTED SEQUENTIALLY THROUGH A PIPELINE

### Introduction

Chemicals manufactured at one location are often moved via pipelines for storage or further transportation (by ships, trucks, trains, etc.) In BTX plants, a single pipeline is often used to transport aromatic compounds. When chemicals are moved sequentially through the same pipeline, a mechanical separator known as a “batching-pig” is usually inserted between the two chemicals to prevent contamination of one chemical by the other. Since this procedure does not result in a complete isolation of the chemicals, a considerable predetermined amount of material has to be removed for reprocessing.

### Applying the OMA-517 to minimize the reprocessing costs

The OMA-517, a diode array process analyzer, measures the complete UV spectrum of the chemical in the pipeline. The complete spectrum is analyzed automatically by the OMA's computer, giving a single value indicating the purity level of the substance in the pipeline. This number is computed via a unique algorithm. The purity threshold can be modified by the user and hence the acceptable purity level of the product. The process is completely automated, resulting in a minimum amounts of chemicals to be reprocessed.

### Absorbance spectra of benzene and toluene mixtures

Figure 1 shows the absorbance spectra of benzene and toluene mixtures. It can be seen that the spectra during the mixing stages varies; however, once the mixing is over the absorbance spectrum will continuously show the same spectral features, indicating that the interface stage is over and the stream can be sent to storage.

### Concentration trends

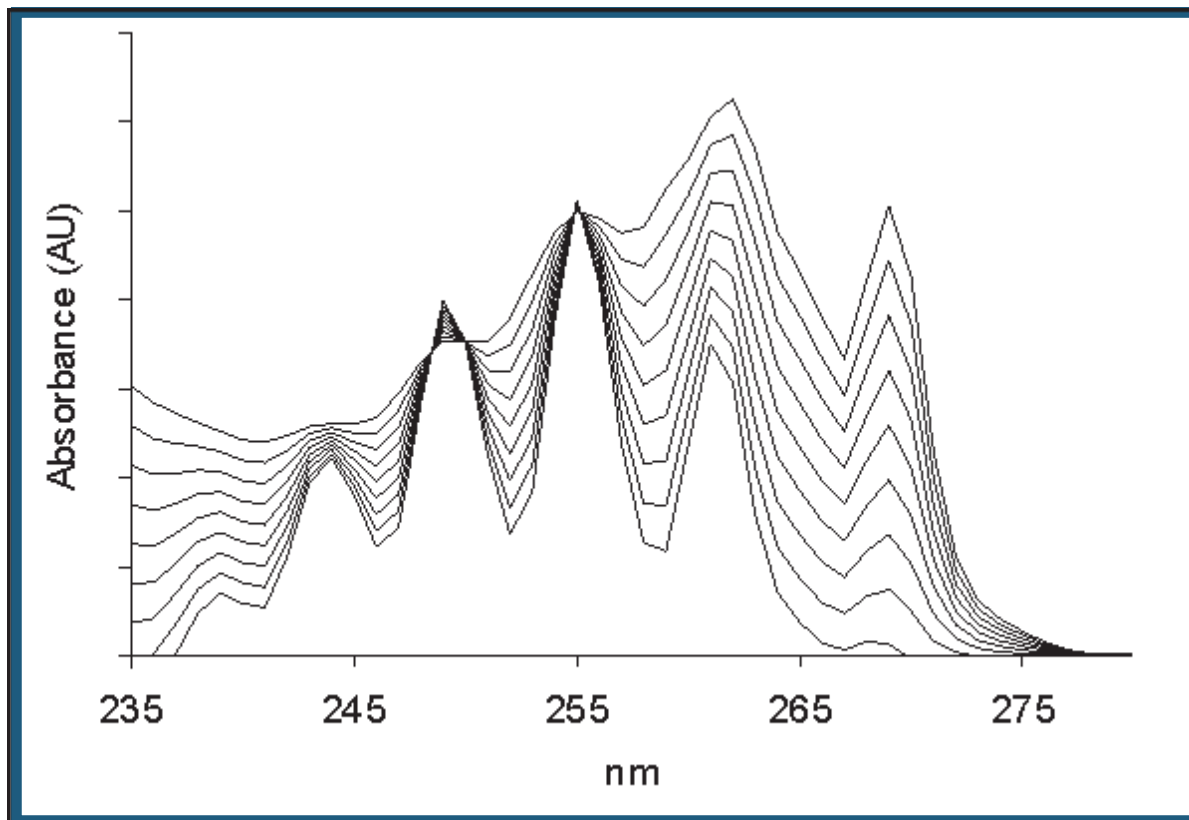
In addition to following the changes in the spectral features of the stream, the concentration of the individual aromatic compounds is also measured and output to different channels.



### Application Features:

- Follows an on pipeline mixing process, identifying the interface between components that are sequentially transported via the same pipeline.
- Threshold for diverting the stream for reprocessing is a user defined parameter
- The analyzer also follows the concentration of the individual aromatic compounds.

*Absorbance spectra of benzene and toluene mixtures (0-200 PPM)*



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