

Summary of Experiment:

This dataset includes TD-GC/MS results from coated filter paper exposed to three vapor sources:

- (1) headspace of reference-grade fentanyl (100 mg)
- (2) headspace of pure NPPA
- (3) headspace of seized fentanyl samples from the Kentucky State Police (KSP) to evaluate field applicability of the sampling approach.

The dataset also includes GC/MS calibration curves for NPPA quantification and TD-GC/MS method optimization parameters developed specifically for analyzing coated filter papers containing fentanyl vapors. NPPA mass captured on one-quarter of the filter paper was used as a metric of pre-concentration efficiency.

Definitions:

- NPPA – N-Phenylpropanamide
- TD-GC/MS – Thermal Desorption-Gas Chromatography/Mass Spectrometry
- Quarter filter mass – NPPA mass detected from one-fourth of the coated filter paper.
- STD / RSD – Standard deviation and relative standard deviation of replicate measurements.
- Peak Area – Integrated chromatographic signal corresponding to NPPA abundance.
- GC Ramp (Gas Chromatography Ramp): Refers to the temperature program applied to the GC oven
- TDU Ramp (Thermal Desorption Unit Ramp): The heating program applied to the thermal desorption
- Unit
- CIS Ramp (Cold Injection System Ramp): The temperature increase program for the CIS (injector)
- Transfer Temperature: The temperature of the interface line that connects the TDU and CIS to the GC column.