

ACTS

Aerosol Collection Thermal Desorption System



Turn Your Existing GC-MS into an Online Organic Aerosol Analyzer



**AMBIENT
AEROSOL**



ACTS

Collection + Thermal
Desorption



**10 cm SOFT
CONNECTION**

Needle + Double Septa



GC-MS



**MOLECULAR-LEVEL
COMPOSITION**

CORE BENEFITS

SOFT CONNECTION

Needle + Double Septa

NO GC MODIFICATION

Easy Installation &
Switching

1–2 h

Automated Analysis

HIGH TRANSFER EFFICIENCY

Mid- to Low-Volatility
Organics

HOW ACTS WORKS

SAMPLING + ANALYSIS

Aerosols are collected in the CTD while the GC-MS analyzes the previous sample.

AMBIENT
AEROSOL → CTD
COLLECTS

IN PARALLEL · GC-MS ANALYZES THE PREVIOUS SAMPLE

THERMAL DESORPTION

Collected organics are thermally desorbed and transferred directly to the GC-MS through the 10 cm soft connection.

CTD
HEATS → 10 cm
SOFT
CONNECTION → GC-MS

DIRECT TRANSFER TO THE GC INLET

KEY PERFORMANCE

~0.07 μm

Collection D_{50}

>90%

Collection Efficiency ≥ 0.16
 μm

33–154%

C_{13} – C_{40} n-Alkane Relative
Transfer Efficiency

1–2 h

Time Resolution

0.5–0.8 ng

C_{36} Alkane Empirical
Detection Limit

BROAD CHEMICAL COVERAGE

ACTS is designed for thermally desorbable, GC-MS-compatible semi- and low-volatility organics in particulate matter.

Representative classes include:

HYDROCARBONS

n-Alkanes · Branched Alkanes
Alkenes / Alkynes · Cycloalkanes
PAHs · Hopanes · Terpenes

OXYGENATED / FUNCTIONALIZED

Organic Acids · Phthalates ·
Furans
Eugenol-Related Compounds
Biomass-Burning Tracers
Other Oxygenated Organics

HETEROATOM / OTHER ORGANICS

N-Containing · S-Containing
Chlorinated · Fluorinated
P-Containing

POLYMER / PLASTIC-RELATED

Styrene Oligomers
Plastic-Related Molecular Tracers

...and more GC-MS-compatible semi- and low-volatility organics

DEMONSTRATED APPLICATIONS

Ambient Aerosol Molecular Characterization

Indoor Air Molecular Profiling

Long-Term Field Monitoring

Source Fingerprinting

Plastic- and Polymer-Related Emissions

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