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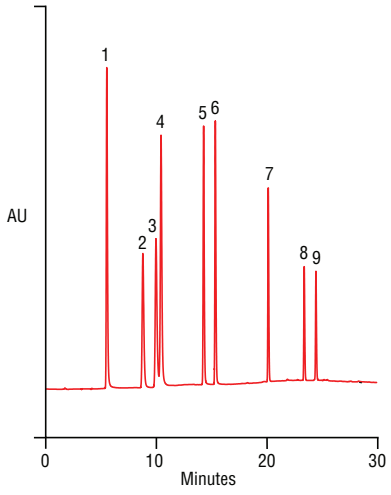
## LC Separation of Nitrosamines in EPA 8270 Using a Thermo Scientific™ Acclaim™ PolarAdvantage (PA) Column




| | |
|---|---|
| Column: | Thermo Scientific™ Acclaim™ PA, 5 µm |
| Dimensions: | 4.6 × 250 mm |
| Mobile Phase: | (A) D.I. $H_2O$ |
| | (B) Acetonitrile |

Gradient:

| *Time (min)* | *% B* |
|---|---|
| 0 | 1 |
| 5 | 1 |
| 25 | 90 |
| 30 | 90 |

| | |
|---|---|
| Temperature: | 30 °C |
| Flow Rate: | 1 mL/min |
| Inj. Volume: | 15 µL |
| Detection: | UV, 230 nm |

Peaks: (20 µg/mL)

1. *N*-Nitroso-dimethylamine
2. *N*-Nitroso-morpholine
3. *N*-Nitroso-methylethylamine
4. *N*-Nitroso-pyrrolidine
5. *N*-Nitroso-diethylamine
6. *N*-Nitroso-piperidine
7. *N*-Nitroso-dipropylamine
8. *N*-Nitroso-dibutylamine
9. *N*-Nitroso-diphenylamine

Note: This gradient will also resolve benzidines.

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The analysis of nitrosamines by GC, as in U.S. EPA Method 8270, is problematic due to the thermal instability and reactivity of these substances. We present an alternative using HPLC. The substances in this list differ greatly in hydrophobicity, and a very wide gradient program is needed to resolve them all. The Acclaim PA column, unlike most C18 columns, may be reliably used with highly aqueous mobile phases without risk of dewetting. These same conditions may be used to resolve other compounds of interest, such as benzidines.