



#### TEST CONDITIONS:

Column: HALO 90 Å Biphenyl, 2 μm,  
2.1 x 100  
Part Number: 91812-611  
Mobile Phase A: Water/0.1% Formic acid  
Mobile Phase B: Methanol/0.1% Formic acid  
Gradient:

Time	%B
0.0	5
4.00	98
5.00	98
5.01	5
7.00	END

Flow Rate: 0.4 mL/min  
Initial Pressure: 325 bar  
Temperature: 40 °C  
Injection Volume: 2 μL  
Sample Solvent: 95/5 MeOH/Water  
LC System: Shimadzu Nexera X2

#### MS CONDITIONS:

Detection: +ESI MS  
Mass Spectrometer: Thermo Exactive HF  
Sheath gas flow rate: 50 (arbitrary units)  
Aux gas flow rate: 13 (arbitrary units)  
Sweep gas flow rate: 0 (arbitrary units)  
Spray voltage: 3.50 kV  
Cap temp: 263 °C  
S-lens RF level: 70 V  
Aux gas heater temperature: 425 °C

#### PEAK IDENTITIES:

1. Morphine (MH<sup>+</sup>= 286.341 g/mol)
2. Amphetamine (MH<sup>+</sup>= 136.206 g/mol)
3. Methamphetamine (MH<sup>+</sup>= 150.237 g/mol)
4. MDA (MH<sup>+</sup>= 180.221 g/mol)
5. Phentermine (MH<sup>+</sup>= 150.233 g/mol)
6. Codeine (MH<sup>+</sup>= 300.364 g/mol)
7. 6-MAM (MH<sup>+</sup>= 328.380 g/mol)
8. MDMA (MH<sup>+</sup>= 194.246 g/mol)
9. MDEA (MH<sup>+</sup>= 208.271 g/mol)
10. Benzoylcegonine (MH<sup>+</sup>= 290.331 g/mol)
11. PCP (MH<sup>+</sup>= 244.387 g/mol)
12. THC-COOH (MH<sup>+</sup>= 345.415 g/mol)

The 2 μm HALO Biphenyl is an ideal choice for high throughput analysis of drug panels, in which isobaric species separation is needed. Note the resolution between methamphetamine and phentermine, (peaks 3 and 5, respectively). The SAMHSA 5 panel consists of amphetamines, cocaine, marijuana, opiates, and phencyclidine (PCP).