**Binary Static Mixer Comparison**

Less Noise - Lower Detection Limits

- No Mixer - Valco Tee & 10 µL Tubing
- Binary Lee Mixer - 10 µL
- Binary ASI HyperShear Mixer - 10 µL

HPLC System Configuration:
- ASI/Model 500G Gradient System
- ABI Model 785 UV/VIS @254 on-column
- Varian Star Data Acquisition

HPLC Conditions:
- MP:  A = H₂O,  B = H₂O/Acetone
- Flow Rate:  50 µL/min. 50% B
- Pressure:  1,700 PSI with ASI/resistor cartridge

**Superior Mixing with Less Gradient Dispersion**

- No Mixer - Valco Tee & 10 µL Tubing
- Binary ASI HyperShear Mixer - 10 µL
- Binary Lee Mixer - 10 µL

HPLC System Configuration: Above
- Isocratic Flow Rate:  50 µL/min. 100% A
- One inlet port plugged
- Injection:  600 nL Acetone
Agilent Static Mixer Optimization

Micro Flow Step Gradients

**HPLC System Configuration:**
Agilent® Binary 1100 Pump
Packed bed mixer (approximate volume: 500 µL) replaced with union and/or ASI HyperShear In-Line Static Mixer
Varian Star Data Acquisition

**HPLC Conditions:**
MP: A = H₂O, B = ACN doped with 0.01% Acetone
Flow Rate: 250 µL/min.
Pressure: 2,000 PSI with ASI resistor cartridge
Gradient: 0.0 = off%B
2.5 = 10%B
7.5 = 20%B
12.5 = 0.0%B and hold

**HPLC System Configuration:**
Agilent® Binary 1100 Pump
Packed bed mixer (approximate volume: 500 µL) replaced with union and/or ASI HyperShear In-Line Static Mixer
Varian Star Data Acquisition

**HPLC Conditions:**
MP: A = H₂O, B = IPA doped with 0.01% Acetone
Flow Rate: 1.0 mL/min.
Pressure: 2,000 PSI with ASI resistor cartridge
Gradient: Above
Shimadzu Static Mixer Optimization

Micro Flow Step Gradients

HPLC System Configuration:
Shimadzu: LC-10ADvp
Mixer: Connected at Shimadzu Tee
Detector: Knauer 2501 @254

HPLC Conditions:
MP: \( A = H_2O, B = H_2O + 35\% \text{ 2-Propanol} + 0.003\% \text{ Acetone} \)
Flow Rate: 250 µL/min.
Pressure: 2,000 PSI with ASI/resistor cartridge
Shimadzu Static Mixer Optimization

Analytical Flow Step Gradients

HPLC System Configuration:
Shimadzu: LC-10ADvp
Mixer: Connected at Shimadzu Tee
Detector: Knauer 2501 @254

HPLC Conditions:
MP: A = H2O, B = H2O + 35% 2-Propanol + 0.003% Acetone
Flow Rate: 1.0 mL/min.
Pressure: 2,000 PSI with ASI/resistor cartridge

Isocratic Mixing Noise

HPLC System Configuration:
Shimadzu: LC-10ADvp
Mixer: Connected at Shimadzu Tee
Detector: Knauer 2501 @254

HPLC Conditions:
MP: A = H2O, B = H2O + 35% 2-Propanol + 0.003% Acetone
Flow Rate: 1.0 mL/min.
Pressure: 2,000 PSI with ASI/resistor cartridge