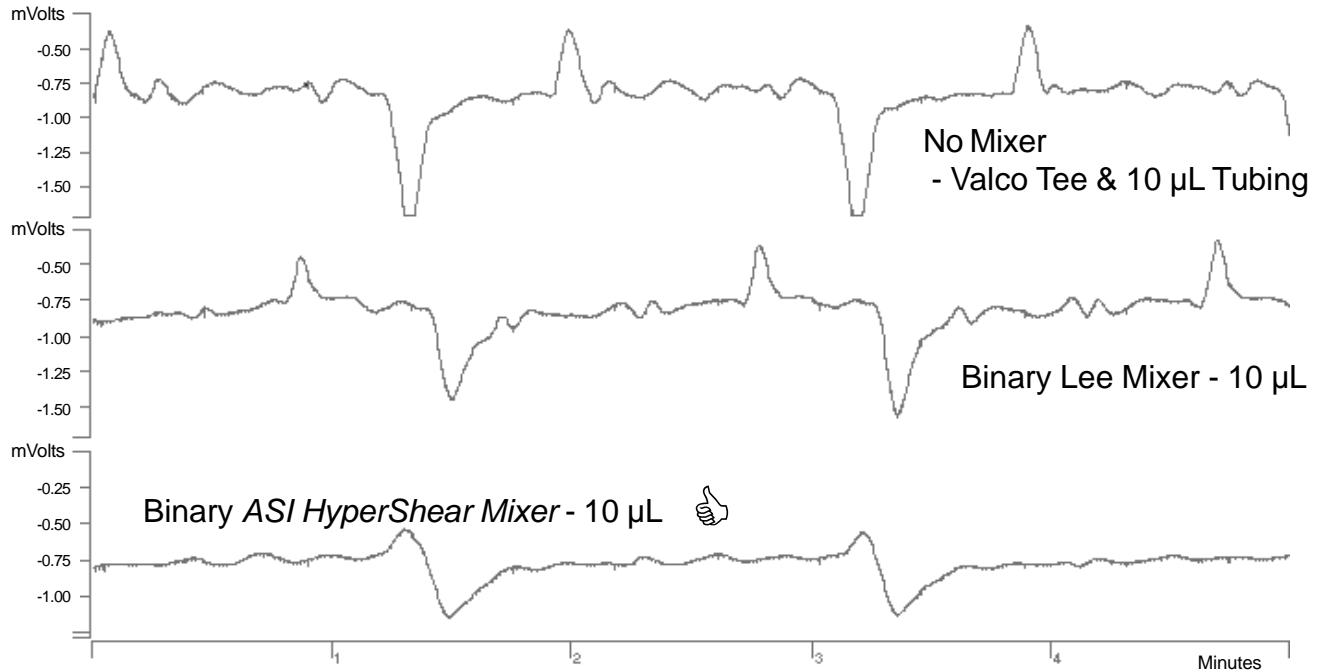


# Binary Static Mixer Comparison

## Less Noise - Lower Detection Limits



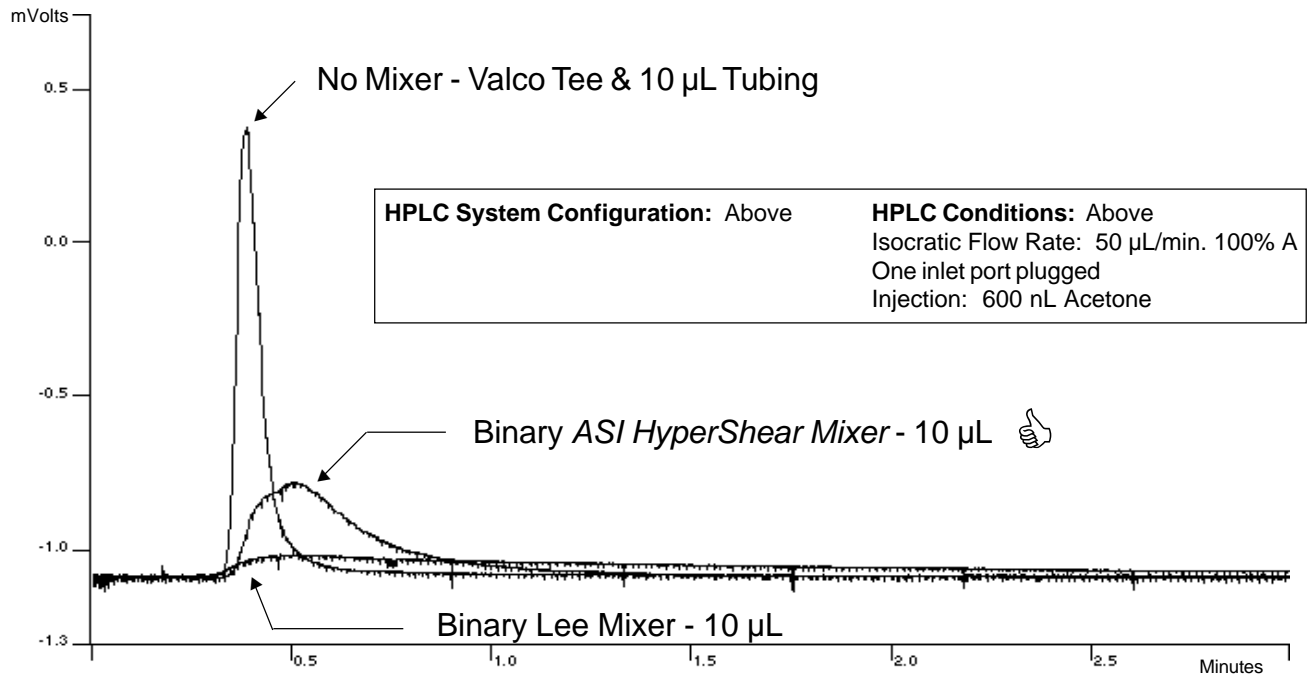
### HPLC System Configuration:

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

### HPLC Conditions:

MP: A = H<sub>2</sub>O, B = H<sub>2</sub>O/Acetone  
Flow Rate: 50  $\mu$ L/min. 50% B  
Pressure: 1,700 PSI with ASI resistor cartridge

## Superior Mixing with Less Gradient Dispersion

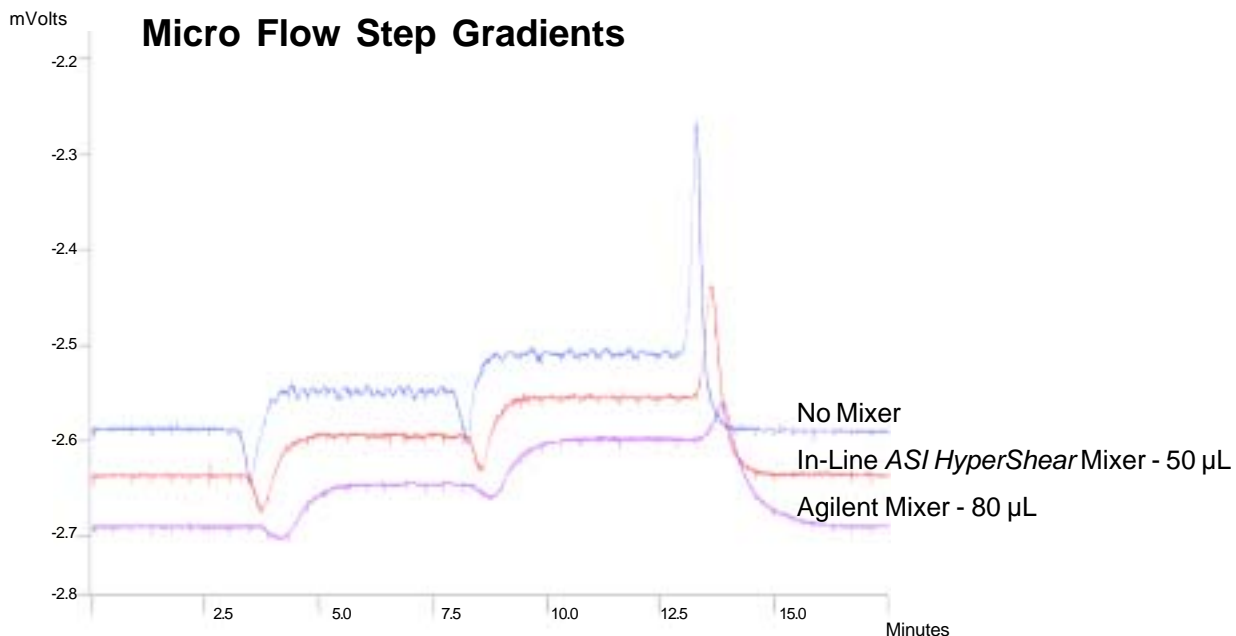


### HPLC System Configuration: Above

### HPLC Conditions: Above

Isocratic Flow Rate: 50  $\mu$ L/min. 100% A  
One inlet port plugged  
Injection: 600 nL Acetone

# Agilent Static Mixer Optimization

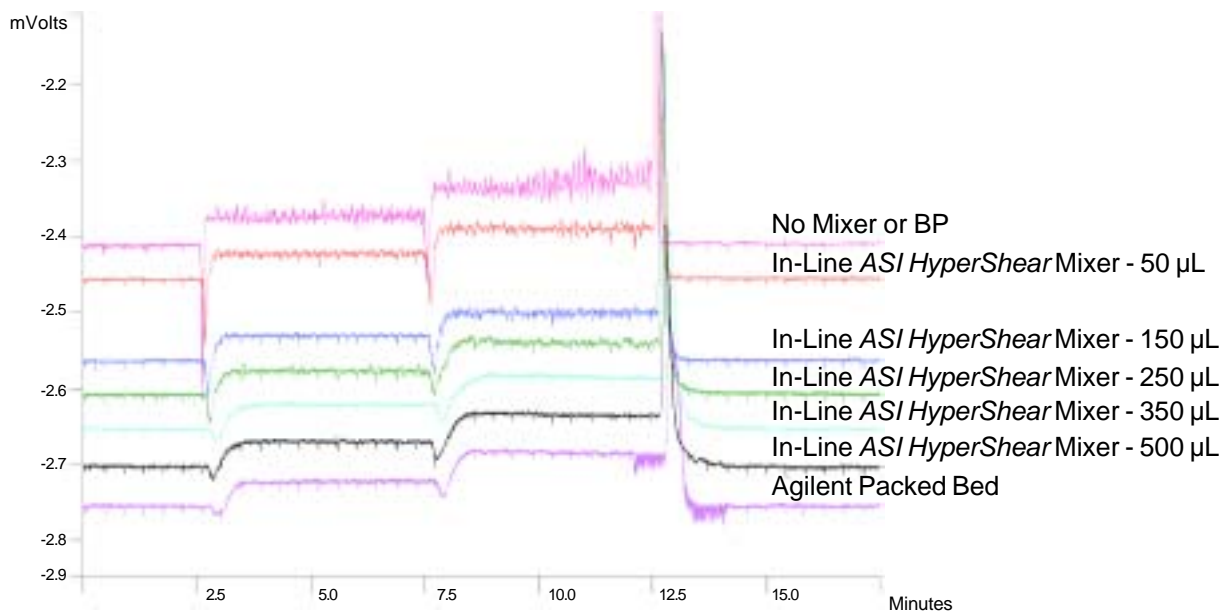


**HPLC System Configuration:**

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 = H<sub>2</sub>O, 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 7.5 = 20%B  
 2.5 = 10%B 12.4 = 20%B  
 7.4 = 10%B 12.5 = 0.0%B and hold



**HPLC System Configuration:** Above

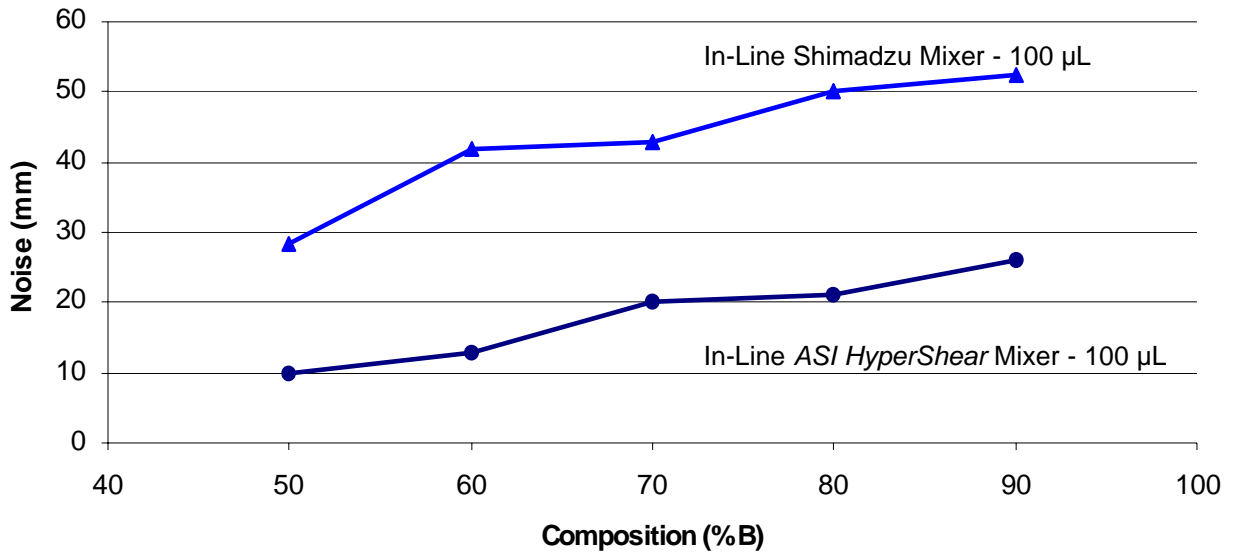
Agilent® Binary 1100 Pump  
 Packed bed mixer (approximate volume: 500 µL) replaced with union and/or *ASI HyperShear* In-Line Static Mixer  
 Varian Star Data Acquisition

**HPLC Conditions:**

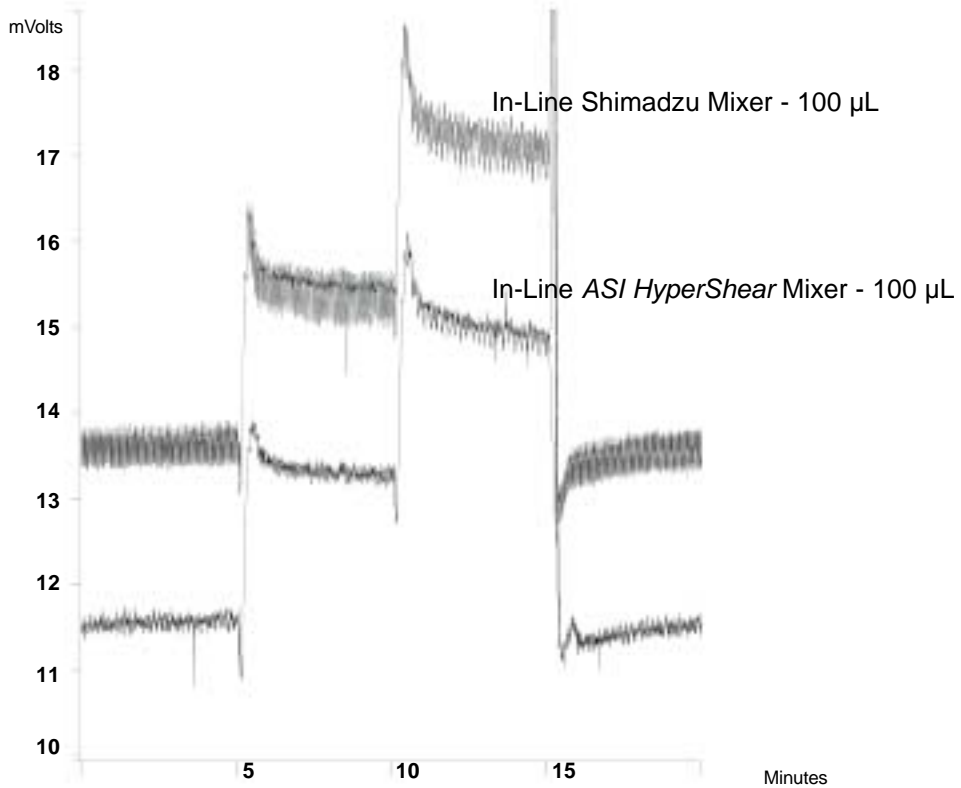
MP: A = H<sub>2</sub>O, B = IPA doped with 0.01% Acetone  
 Flow Rate: 1.0 mL/min.  
 Pressure: 2,000 PSI with *ASI* resistor cartridge  
 Gradient: Above

# Shimadzu Static Mixer Optimization

## Micro Flow Step Gradients



## Micro Flow Step Gradients



### HPLC System Configuration:

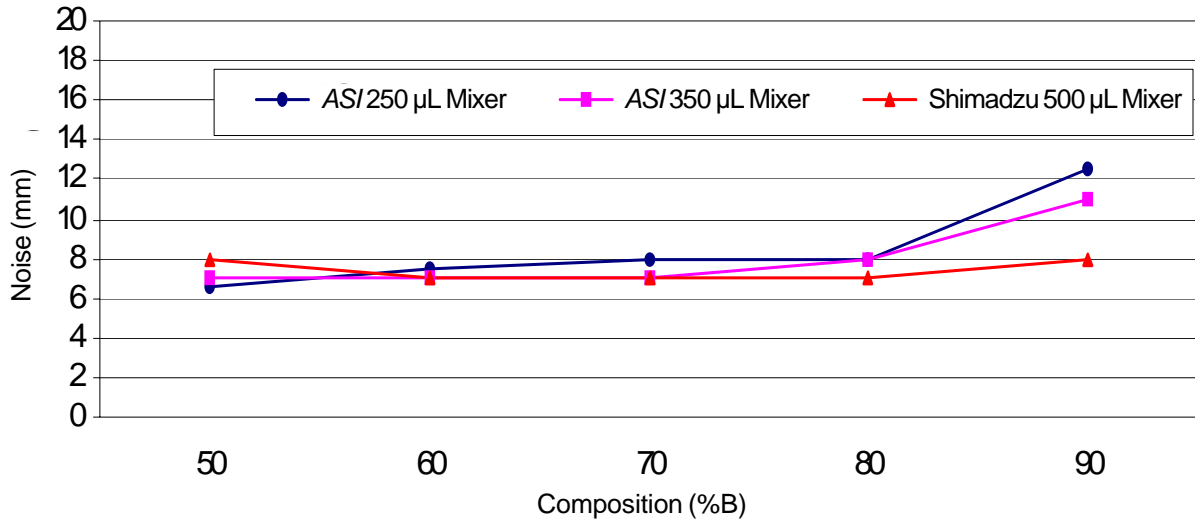
Shimadzu: LC-10ADvp  
Mixer: Connected at Shimadzu Tee  
Detector: Knauer 2501 @254

### HPLC Conditions:

MP: A = H<sub>2</sub>O, B = H<sub>2</sub>O + 35% 2-Propanol + 0.003% Acetone  
Flow Rate: 250 µL/min.  
Pressure: 2,000 PSI with ASI resistor cartridge

# Shimadzu Static Mixer Optimization

## Analytical Flow Step Gradients



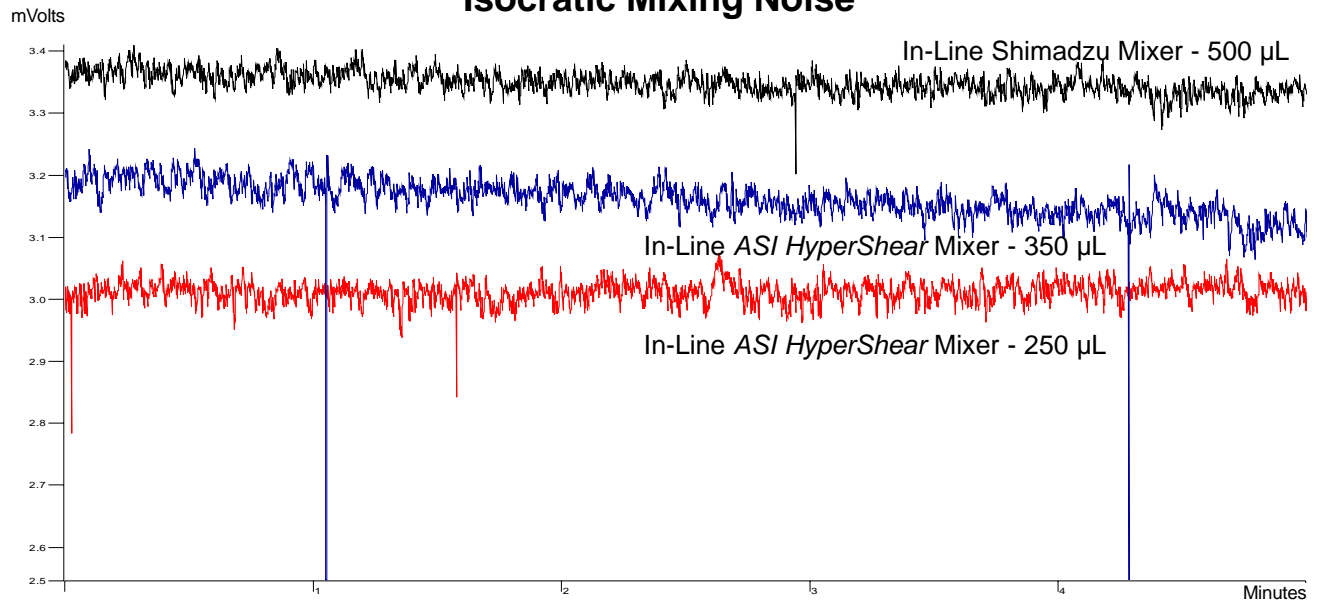
### HPLC System Configuration:

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

### HPLC Conditions:

MP: A = H<sub>2</sub>O, B = H<sub>2</sub>O + 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 = H<sub>2</sub>O, B = H<sub>2</sub>O + 35% 2-Propanol + 0.003% Acetone  
 Flow Rate: 1.0 mL/min.  
 Pressure: 2,000 PSI with ASI/resistor cartridge