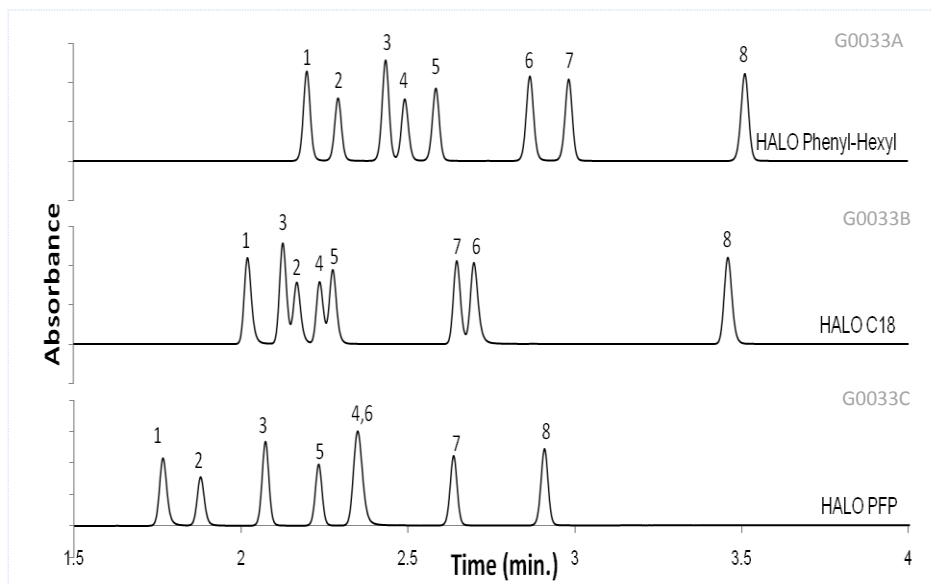


## Separation of Benzodiazepines on HALO Phenyl-Hexyl, C18, and PFP Phases



### PEAK IDENTITIES:

1. Oxazepam
2. Lorazepam
3. Nitrazepam
4. Alprazolam
5. Clonazepam
6. Temazepam
7. Flunitrazepam
8. Diazepam

### TEST CONDITIONS:

Columns: 4.6 x 50 mm, HALO Phenyl-Hexyl, C18, and PFP

Part Numbers: 92814-406, 92814-402, and 92814-409, respectively

Mobile Phase:

A= 25 mM Ammonium acetate in water (pH=5.8 not adjusted), B= Acetonitrile

Gradient from 34-63% B in 3.5 minutes

Flow Rate: 1.5 mL/min.

Pressure: 200 Bar

Temperature: 35°C

Detection: UV 254 nm, VWD

Injection Volume: 1.0 µL

Standard diluted with Acetonitrile and buffer

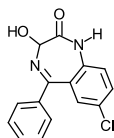
Response Time: <0.12 sec.

Flow Cell: 5 µL semi-micro

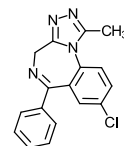
LC System: Agilent 1100

Gradient dwell volume= 0.88 mL

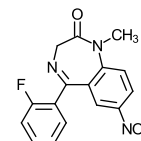
### STRUCTURES:



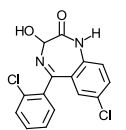
Oxazepam



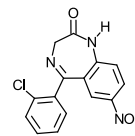
Alprazolam



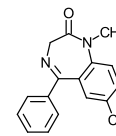
Flunitrazepam



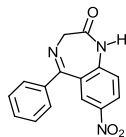
Lorazepam



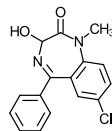
Clonazepam



Diazepam



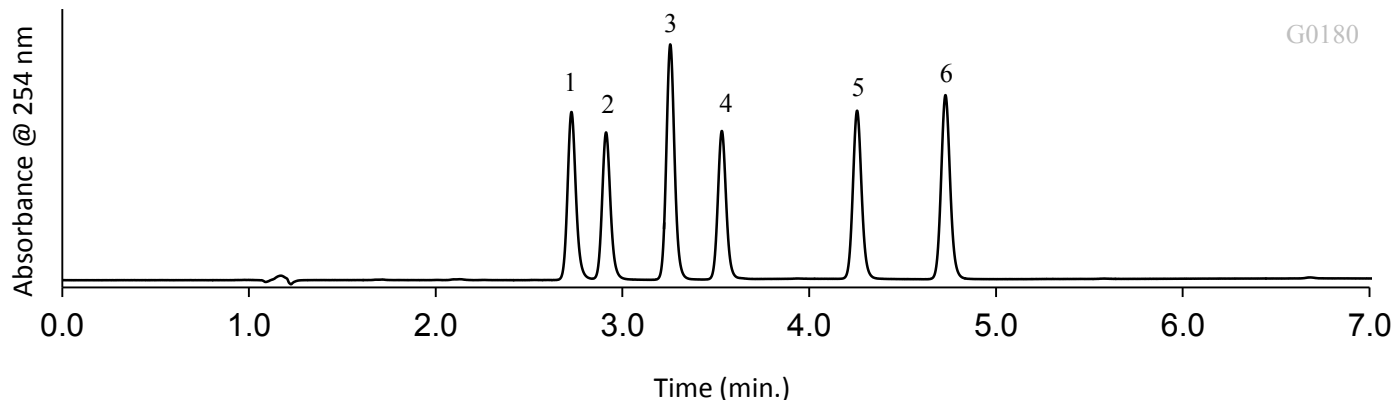
Nitrazepam



Temazepam

These separations of benzodiazepines on three different HALO Fused-Core HPLC stationary phases show the utility of having a variety of phases to optimize selectivity and/or to shorten analysis time.

## Separation of Benzodiazepines on HALO® PFP, 5 µm



### TEST CONDITIONS:

Column: HALO 90 Å PFP, 5 µm, 4.6 x 100mm

Part Number: 95814-609

Mobile Phase A: 25 mM Ammonium acetate pH: 5.5

Mobile Phase B: Acetonitrile

Gradient:	Time	%B
	0.0	36
	7.0	65

Flow Rate: 0.75 mL/min

Pressure: 46 bar

Temperature: 35°C

Detection: UV 254 nm

Injection Volume: 1.0 µL

Response Time: <0.12 sec

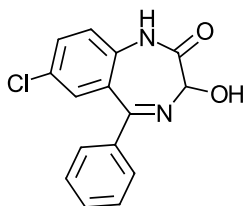
Flow Cell: 5 µl semi-micro

LC System: Agilent 1100

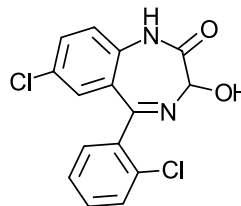
### PEAK IDENTITIES:

- |               |                  |
|---------------|------------------|
| 1. Oxazepam   | 4. Clonazepam    |
| 2. Lorazepam  | 5. Flunitrazepam |
| 3. Nitrazepam | 6. Diazepam      |

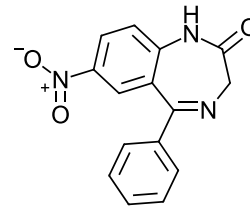
### STRUCTURES:



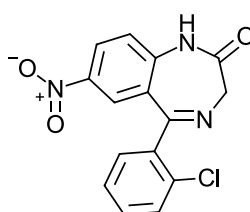
Oxazepam



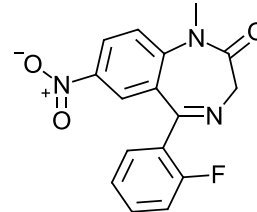
Lorazepam



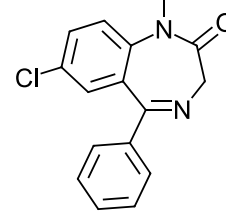
Nitrazepam



Clonazepam



Flunitrazepam



Diazepam

Benzodiazepines are a class of compounds known to be minor tranquilizers, which are mainly used to treat anxiety, insomnia, and seizures in people, as well as animals. A separation of six benzodiazepines is performed on a HALO® 5 µm PFP column.