The Ultimate Guide to Reversed Phase HPLC/UHPLC Selectivity

Isomers and Isobaric Compounds

Steric Interactions
High column steric-interaction values are best suited for the analysis of analytes that require separation based on size and shape differences.

- Kinex C18(2)
- Gemini C6-Phenyl
- Synergi Max-RP
- Luna C18(2)

Polar Basic Compounds

Cation Selectivity
High column cation-selectivity values will show higher retention for ionized bases, but may show broad peaks.

- Increased Retention of Polar Bases
  - Kinex C18
  - Luna PFP(2)
- Improved Peak Shape for Bases
  - Gemini C6-Phenyl
  - Luna C18(2)

Hydrocarbon Compounds

Hydrophobicity
High column hydrophobicity values indicate greater retention of carbon-containing analytes.

- Synergi Hydro-RP
- Luna C18(2)
- Synergi Max-RP
- Gemini C18
- Synergi Fusion-RP
- Luna C8(2)
- Gemini-RX C18
- Luna Phenyl-Hexyl
- Kinex C18
- Kinex XB-C18
- Luna PFP(2)
- Gemini C6-Phenyl
- Synergi Polar-RP
- Kinex C8
- Synergi Hydro-RP
- Kinex C18
- Synergi Max-RP
- Luna C18(2)

Hydroxyl- or Amine-containing Functionalities

Hydrogen Bond Accepting Capacity
Hydrogen bond accepting groups on the silica surface interact with hydrogen bond donating functionalities on analytes.

- Kinex XB-C18
- Gemini C18
- Synergi Fusion-RP
- Onyx Monolithic C8
- Luna C8(2)

Non-Ionized Bases and Oxygen- or Halogen-containing Compounds

Hydrogen Bond Donating Capacity
Hydrogen bond donating groups on the silica surface interact with accessible functionalities containing a lone pair of electrons.

- Synergi Hydro-RP
- Gemini C18
- Onyx Monolithic C8
- Synergi Max-RP
- Luna C18(2)

Which solid support is right for your analysis?

- Ultra-High Performance on Any HPLC or UHPLC System
- Greatest Scalability
- Worry-Free "Slit-less-Steel"

Core-shell Particles
- Ultra-high efficiency at decreased backpressure
- Increased robustness and stability
- Easy HILIC method transfer between HPLC and UHPLC systems
- Glycine/Phenyl groups on UHPLC systems only

Fully porous Particles
- Improved loadability due to higher surface area
- Excellent mechanical strength
- Suitable across a wide range of particle sizes and column diameters

Monolithic Rod
- Extremely low backpressure
- Chemical and thermal stability
- Decreased run time by increasing flow rate

Important!
Only column selectivity parameters of the same class (i.e., Steric Interactions) may be compared between the columns featured here.

Hydrophobic selectivity is the main mechanism of retention under reversed phase conditions. Within the column profiles the 5 different selectivity parameter classes are not on the same scale.