Phenomenex Guide To **NOVARTIS** Column Policy

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US

Gemini® C18

Highly pH stable platform for reversed phase method development and process-scale purifications.

Product Specifications

Particle Sizes	Pore Size	Surface Area	Carbon Load	End Capping	pH Range	USP Column Classification
3 µm	110 Å	375 m^2/g	14 %	TMS (trimethylsilane)	1 – 12	L1

Description

Gemini C18 columns feature a C18 ligand bonded to a TWIN™ (Two-In-One)™ particle, which has organo-silica layers grafted to an ultra-pure silica core. This results in a highly pH stable platform for reversed phase method development and process-scale purifications. Gemini C18 is an excellent choice for basic drugs, especially if they have poor retention on traditional C18 columns. The extended pH stability of Gemini C18 provides more options to improve retention and selectivity of basic drugs by adjusting mobile phase pH. Gemini C18 columns have low bleed and are excellent for LC/MS applications.

Column Dimensions

150 x 3.0 mm (3 µm particles)
50 x 4.6 mm (3 µm particles)

Small Molecules

Primary Set of Columns	pH <2	pH 2-5	pH 5-7	pH 7-10	pH 10-11	Guideline Max Temp
Phenomenex Gemini C18						60 ˚C

Allowed range as per team/vendor recommendation
Tested and preferred robust operating zone

Benefits of using Gemini C18 Columns

Benefits	Technology
Decreased column costs per sample	The extended pH stability of Gemini C18 media creates a more durable column that can be used longer under high and low pH conditions.
Increased retention of basic drugs	When the mobile phase pH is higher than the pKa of most basic drugs, increased hydrophobic retention is established which can pull poorly retained compounds away from the void.
High loading capacity	Unlike other pH-stable columns, Gemini C18 columns have a high loading capacity, due in part to the 375 m^2/g high surface area particles used. Sample loads can be increased without peak broadening or overload compared to traditional hybrid columns.

Ordering Information

Gemini 3 µm Columns	150 x 3.0 mm	50 x 4.6 mm
C18	00F-4439-Y0	00B-4439-E0

Jupiter® 300 C18

RP-HPLC for the purification & characterization of protein therapeutics.

Product Specifications

Particle Sizes	Pore Size	Surface Area	Carbon Load	End Capping	pH Range	USP Column Classification
3 µm, 5 µm	300 Å	170 m^2/g	13.3 %	Yes	1.5 – 10.0	L1

Description

300 Å, C18 HPLC columns for the purification and characterization of intact proteins, including PEGylated proteins and monoclonal antibodies (mAbs); as well as for the identification of post-translational modifications via peptide mapping.

Column Dimensions

150 x 3.0 mm (5 µm particles)
50 x 4.6 mm (5 µm particles)

Proteins/Peptides>10,000MW

Primary Set of Columns	pH <2	pH 2-5	pH 5-7	pH 7-10	pH 10-11	Guideline Max Temp
Phenomenex Jupiter C18 (300 Å)						50 ˚C

Tested and preferred robust operating zone
Do not operate at this pH range

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Benefits of using Jupiter 300 C18 Columns

Benefits	Technology
Jupiter silica (super-smooth, high-mechanical strength, ultra-pure)	• Eliminate subsequent purification steps due to excellent resolution between peak of interest and impurities.
Dense C18 bonded phase	• Identify and quantitate more peaks due to increased peak efficiency and reduced non-specific interactions. • Achieve baseline resolution of intact proteins with similar sequences.
Materials Validation Document (MVD)	• Traceability assured throughout the manufacturing process. • Consistent performance of columns in methods transferred globally.

Ordering Information

Jupiter 5 µm Columns	150 x 3.0 mm	50 x 4.6 mm
300 Å C18	00F-4053-Y0	00B-4053-E0

Luna® C18(2)

For general reversed phase method development to process scale purifications.

Product Specifications

Particle Sizes	Pore Size	Surface Area	Carbon Load	End Capping	pH Range	USP Column Classification
2.5 µm, 3 µm	100 Å	400 m^2/g	17.5 %	Yes	1.5 – 10	L1

Description

Luna C18(2) columns feature uniformly bonded C18 ligands on ultra-pure, 99.99 % metal free spherical silica. Extensive bonding and endcapping promotes extremely sharp and well behaved peaks.

Column Dimensions

150 x 3.0 mm (3 µm particles)
50 x 4.6 mm (3 µm particles)

Small Molecules

Secondary Set of Columns	pH <2	pH 2-5	pH 5-7	pH 7-10	pH 10-11	Recommended Max Temp
Phenomenex Luna C18(2)						50 ˚C

Tested and preferred robust operating zone
Do not operate at this pH range

Benefits of using Luna C18(2) Columns

Benefits	Technology
Highly reproducible results	The ultra-pure base silica used in all Luna columns has a very tight particle size distribution. Bonding and end-capping are done in a highly ordered fashion, leading to consistency regardless of batch. Each Luna column comes with extensive QC data and validation of batch reproducibility. The same Luna C18(2) phase used for discovery work is available in 2.5 µm or 3 µm.

Ordering Information

Luna 3 µm Columns	150 x 3.0 mm	50 x 4.6 mm
C18(2)	00F-4251-Y0	00B-4251-E0

Gemini® C6-Phenyl

Highly pH stable platform for reversed phase method development.

Product Specifications

Particle Sizes	Pore Size	Surface Area	Carbon Load	End Capping	pH Range	USP Column Classification
3 µm	110 Å	375 m^2/g	12 %	TMS (trimethylsilane)	1 – 12	L11

Description

Gemini C6-Phenyl columns feature a hexyl-linked phenyl ligand bonded to a TWIN™ (Two-In-One)™ particle, which has organo-silica layers grafted to an ultra-pure silica core. This results in a highly pH stable platform for reversed phase method development and offers orthogonal selectivity to Gemini C18, especially with aromatic compounds. Gemini C6-Phenyl columns have low bleed and are excellent for LC/MS applications.

Column Dimensions

150 x 3.0 mm (3 µm particles)
50 x 4.6 mm (3 µm particles)

Small Molecules

Secondary Set of Columns	pH <2	pH 2-5	pH 5-7	pH 7-10	pH 10-11	Recommended MaxTemp
Phenomenex Gemini C6-Phenyl						60 ˚C

Allowed range as per team/vendor recommendation
Tested and preferred robust operating zone
Do not operate at this pH range

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Benefits of using Gemini C6-Phenyl Columns

Benefits	Technology
Decreased column costs per sample	The extended pH stability of Gemini C6-Phenyl media creates a more durable column that can be used longer under high and low pH conditions.
Orthogonal reversed phase selectivity	The aromatic interactions and pi-pi stacking creates unique reversed phase selectivity for aromatic compounds, which is an excellent addition to the selectivity achieved with Gemini C18.
High loading capacity	Unlike other pH-stable columns, Gemini C6-Phenyl columns have a high loading capacity, due in part to the 375 m^2/g high surface area particles used. Sample loads can be increased without peak broadening or overloading compared to traditional hybrid columns.

Ordering Information

Gemini 3 µm Columns	150 x 3.0 mm	50 x 4.6 mm
C6-Phenyl	00F-4443-Y0	00B-4443-E0

Curosil™ / Taxol®

High resolution for taxane analysis.

Product Specifications

Particle Sizes	Pore Size	Surface Area	Carbon Load	End Capping	pH Range	USP Column Classification
3 µm	100 Å	300 m^2/g	10.5 %	Yes	2.0 – 8.0	L43

Description

Curosil PFP contains monomerically bonded pentafluorophenyl groups. This phase is useful for the separation of halogen containing compounds, aromatics, conjugated systems, and epimers.

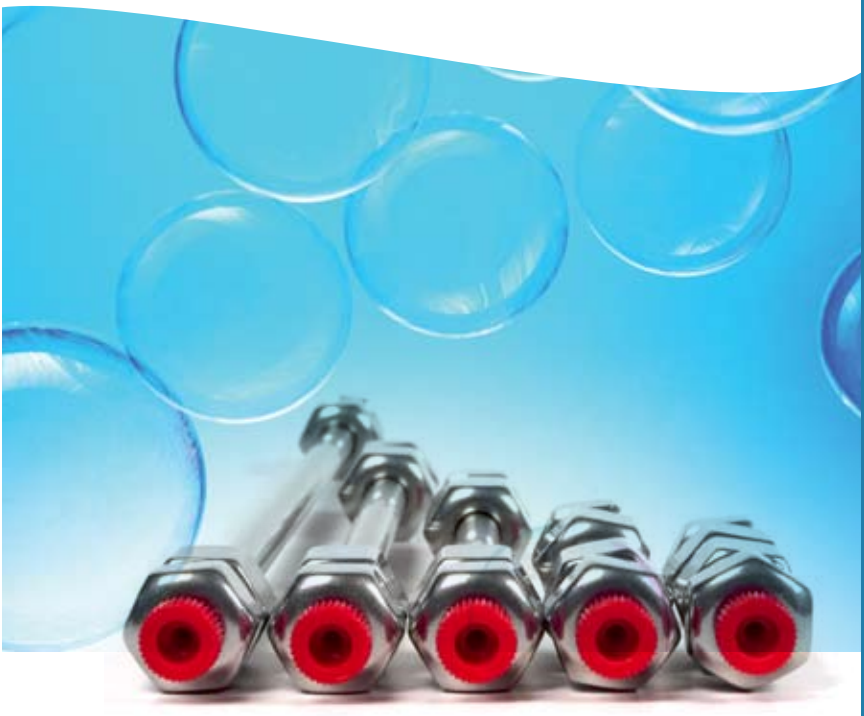
Column Dimensions

150 x 4.6 mm (3 µm particles)
50 x 4.6 mm (3 µm particles)

Small Molecules

Secondary Set of Columns	pH <2	pH 2-5	pH 5-7	pH 7-10	pH 10-11	Recommended Max Temp
Phenomenex Curosil PFP						50 ˚C

Tested and preferred robust operating zone
Do not operate at this pH range



Benefits of using Curosil PFP Columns

Benefits	Technology
Excellent resolution for taxane analysis	Curosil PFP contains monomerically bonded pentafluorophenyl groups. This phase is useful for the separation of halogen containing compounds and aromatics via pi-pi interactions.
Easy purification scale-up	The range of different particle sizes allows for Curosil PFP to be used for analytical, preparative HPLC and scale-up applications.

Ordering Information

Curosil 3 µm Columns	150 x 4.6 mm	50 x 4.6 mm
PFP	00F-4122-E0	00B-4122-E0

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