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OPERATING CONDITIONS and SPECIFICATIONS

TSKgel® Amide-80 Products

Part Numbers:

2 µm	0023454	2.0 mm ID x 5.0 cm L	2 µm	0023460	Guard column for 2 µm columns	
UHPLC Compatible	0023455	2.0 mm ID x 10.0 cm L	2 µm			
	0023456	2.0 mm ID x 15.0 cm L	2 µm			
	0023457	3.0 mm ID x 5.0 cm L	2 µm			
	0023458	3.0 mm ID x 10.0 cm L	2 µm			
	0023459	3.0 mm ID x 15.0 cm L	2 µm			
	0020009	1.0 mm ID x 5.0 cm L	5 µm			
	0020010	1.0 mm ID x 10.0 cm L	5 µm			
	0021486	1.0 mm ID x 15.0 cm L	5 µm			
	0021487	1.0 mm ID x 25.0 cm L	5 µm			
	0021864	2.0 mm ID x 5.0 cm L	3 µm	0021862	Guard cartridge 2.0 mm ID x 1.0 cm L 3pcs	3 µm
	0021865	2.0 mm ID x 15.0 cm L	3 µm	0019308	Cartridge holder; for 2.0 mm ID cartridge	
	0019694	2.0 mm ID x 5.0 cm L	5 µm			
	0019695	2.0 mm ID x 10.0 cm L	5 µm	0021941	Guard column 2.0 mm ID x 1.0 cm L 3pcs	5 µm
	0019696	2.0 mm ID x 15.0 cm L	5 µm			
	0019697	2.0 mm ID x 25.0 cm L	5 µm			
	0022850	3.0 mm ID x 5.0 cm L	3 µm			
	0022851	3.0 mm ID x 10.0 cm L	3 µm			
	0022852	3.0 mm ID x 15.0 cm L	3 µm			
	0021866	4.6 mm ID x 5.0 cm L	3 µm	0021863	Guard cartridge 3.2 mm ID x 1.5 cm L 3pcs	3 µm
	0022849	4.6 mm ID x 10.0 cm L	3 µm	0019018	Cartridge holder; for 3,2 mm ID cartridge	
	0021867	4.6 mm ID x 15.0 cm L	3 µm			
	0019532	4.6 mm ID x 5.0 cm L	5 µm	0019010	Guard Cartridge 3.2 mm ID x 1.0 cm L 3pcs	5 µm
	0019533	4.6 mm ID x 10.0 cm L	5 µm	0019021	Guard column 4.6 mm ID x 1.0 cm L	5 µm
	0013071	4.6 mm ID x 25.0 cm L	5 µm			
	0021982	4.6 mm ID x 25.0 cm L	5 µm	HR	High Resolution	
	0014459	7.8 mm ID x 30.0 cm L	10 µm			
	0014460	21.5 mm ID x 30.0 cm L	10 µm	0014461	Guard column 21.5 mm ID x 7.5 cm L	10 µm

This sheet contains the recommended operating conditions and the specifications for **TSKgel** Amide-80 columns. Installation instructions and column care information are described in a separate Instruction Manual.

A. OPERATING CONDITIONS

1. Shipping Solvent:

85 % Acetonitrile - 15 % Water	for 2 μ m, 3 μ m & HR columns	
75 % Acetonitrile - 25 % Water	for 5 μ m & 10 μ m columns, guardgel for 5 μ m, 2 mm ID columns & guard column for 10 μ m columns	
50% Acetonitrile/50% Water	for guardgel for 3 μ m columns & guardgel for 5 μ m, 4.6 mm ID column	
100% Acetonitrile	for guard column for 2 μ m columns	

2. Max. Pressure:

	40 MPa	2.0 mm ID x 5.0 cm L	2 μ m
	60 MPa	2.0 mm ID x 10.0 cm L	2 μ m
	80 MPa	2.0 mm ID x 15.0 cm L	2 μ m
	40 MPa	3.0 mm ID x 5.0 cm L	2 μ m
	60 MPa	3.0 mm ID x 10.0 cm L	2 μ m
	80 MPa	3.0 mm ID x 15.0 cm L	2 μ m
	3 MPa	1.0 mm ID x 5.0 cm L	5 μ m
	6 MPa	1.0 mm ID x 10.0 cm L	5 μ m
	9 MPa	1.0 mm ID x 15.0 cm L	5 μ m
	12 MPa	1.0 mm ID x 25.0 cm L	5 μ m
	4 MPa	2.0 mm ID x 5.0 cm L	5 μ m
	8 MPa	2.0 mm ID x 10.0 cm L	5 μ m
	10 MPa	2.0 mm ID x 15.0 cm L	5 μ m
	15 MPa	2.0 mm ID x 25.0 cm L	5 μ m
	15 MPa	4.6 mm ID all columns	5 μ m
	7 MPa	7.8 mm ID x 30.0 cm L	10 μ m
	3 MPa	21.5 mm ID x 30.0 cm L	10 μ m
	20 MPa	For all 3 μm columns	

3. pH Range: 2.0 - 7.5

4. Organic Conc.:

0 - 100%	polar and nonpolar	5 μ m, including HR & 10 μ m switch to 100% acetonitrile before switching to 100% nonpolar solvents.
0 - 100%	polar and nonpolar	2 μ m & 3 μ m: switch to 95% acetonitrile before switching to 100% nonpolar solvents.

5. Temperature:

10°C - 80°C	5 μ m and 10 μ m columns; including HR
10°C - 50°C	2 μ m and 3 μ m columns;

6. Cleaning Solvents:
 - (1) Water
 - (2) 45% Acetonitrile or acetone
 - (3) 0.1% triethylamine in at least 75% acetonitrile
 - (4) 50 mM phosphate buffer pH 6.0 / Acetonitrile 50/50

NOTE: Choose cleaning solvent (1) to remove very polar solutes from the bonded phase, (2) to desorb hydrophobic compounds, (3) to get rid of adsorbed basic compounds, and (4) for ionic compounds.

7. Storage: Store the column in the shipping solvent when it will not be used the next day. For overnight storage flush the column with the mobile phase at 50% of the recommended flow rate for the column.

8. Column Protection: The use of guard columns is recommended to prolong the life of the analytical column. Guard column life depends greatly on sample cleanliness. As a general rule, guard columns should be replaced after every 30-40 sample injections, when the peaks become excessively wide, or when the peaks show splitting.

B. SPECIFICATIONS

The performance of **TSKgel** Amide-80 columns is tested under the conditions described in the Data Sheet. All columns have passed the following quality control specifications:

No. of Theoretical Plates (N)	5,800	2.0 mm ID x 5.0 cm L	2µm	8,300	3.0 mm ID x 5.0 cm L	2µm
	14,000	2.0 mm ID x 10.0 cm L	2µm	16,500	3.0 mm ID x 10.0 cm L	2µm
	21,500	2.0 mm ID x 15.0 cm L	2µm	24,000	3.0 mm ID x 15.0 cm L	2µm
	≥ 300	1.0 mm ID x 5.0 cm L	5 µm	≥ 6,000	4.6 mm ID x 5.0 cm L	3 µm
	≥ 600	1.0 mm ID x 10.0 cm L	5 µm	≥ 12,000	4.6 mm ID x 10.0 cm L	3 µm
	≥ 4,000	1.0 mm ID x 15.0 cm L	5 µm	≥ 18,500	4.6 mm ID x 15.0 cm L	3 µm
	≥ 6,000	1.0 mm ID x 25.0 cm L	5 µm			
	≥ 1,000	2.0 mm ID x 5.0 cm L	5 µm	≥ 1,500	4.6 mm ID x 5.0 cm L	5 µm
	≥ 2,000	2.0 mm ID x 10.0 cm L	5 µm	≥ 3,000	4.6 mm ID x 10.0 cm L	5 µm
	≥ 4,000	2.0 mm ID x 15.0 cm L	5 µm	≥ 8,000	4.6 mm ID x 25.0 cm L	5 µm
	≥ 6,000	2.0 mm ID x 25.0 cm L	5 µm	≥ 18,000	4.6 mm ID x 25.0 cm L	5 µm HR
	≥ 3,500	2.0 mm ID x 5.0 cm L	3 µm			
	≥ 13,000	2.0 mm ID x 15.0 cm L	3 µm	≥ 5,000	7.8 mm ID x 30.0 cm L	10 µm
	≥ 5,500	3.0 mm ID x 5.0 cm L	3 µm	≥ 8,000	21.5 mm ID x 30.0 cm L	10 µm
	≥ 11,000	3.0 mm ID x 10.0 cm L	3 µm			
	≥ 16,000	3.0 mm ID x 15.0 cm L	3 µm			

Please note, that there are not all theoretical plate specifications for 2 mm ID columns available.

Asymmetry Factor (AF)	All 2µm columns					
	0.90 - 1.60					
1.00 - 2.00	1.0 mm ID x 5.0 cm L	5 µm	0.75 - 1.40	4.6 mm ID x 5.0 cm L	5 µm	
1.00 - 2.00	1.0 mm ID x 10.0 cm L	5 µm	0.70 - 1.50	4.6 mm ID x 10.0 cm L	5 µm	
0.70 - 1.80	1.0 mm ID x 15.0 cm L	5 µm	0.70 - 1.60	4.6 mm ID x 25.0 cm L	5 µm	
0.70 - 1.80	1.0 mm ID x 25.0 cm L	5 µm	0.90 - 1.30	4.6 mm ID x 25.0 cm L	5 µm HR	
0.90 - 1.25	2.0 mm ID x 5.0 cm L	3 µm	0.90 - 1.20	4.6 mm ID x 5.0 cm L	3 µm	
0.90 - 1.25	2.0 mm ID x 15.0 cm L	3 µm	0.90 - 1.20	4.6 mm ID x 10.0 cm L	3 µm	
0.70 - 1.80	2.0 mm ID x 15.0 cm L	5 µm	0.90 - 1.20	4.6 mm ID x 15.0 cm L	3 µm	
0.70 - 1.80	2.0 mm ID x 25.0 cm L	5 µm				
0.90 - 1.25	3.0 mm ID x 5.0 cm L	3 µm				
0.90 - 1.25	3.0 mm ID x 10.0 cm L	3 µm				
0.90 - 1.25	3.0 mm ID x 15.0 cm L	3 µm				

Please note, that there are not all asymmetry specifications for 2 mm ID (5 µm), 7.8 mm ID (10 µm), and 21.5 mm ID columns available.