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## OPERATING CONDITIONS and SPECIFICATIONS

### TSK-GEL® ODS-100V

<b>Part Numbers:</b>	21838	1.0 mm ID x 3.5 cm L	<b>3 µm</b>	
	21839	1.0 mm ID x 5.0 cm L	<b>3 µm</b>	
	21814	2.0 mm ID x 1.0 cm L	<b>3 µm</b>	3 pieces /pkg Guard Cartridges Holder recommended
	22700	2.0 mm ID x 2.0 cm L	<b>3 µm</b>	22708 2.0 mm ID x 1.0 cm L <b>5 µm</b>
	21813	2.0 mm ID x 3.5 cm L	<b>3 µm</b>	22709 2.0 mm ID x 2.0 cm L <b>5 µm</b>
	21812	2.0 mm ID x 5.0 cm L	<b>3 µm</b>	22710 2.0 mm ID x 3.5 cm L <b>5 µm</b>
	21811	2.0 mm ID x 7.5 cm L	<b>3 µm</b>	21457 2.0 mm ID x 5.0 cm L <b>5 µm</b>
	21938	2.0 mm ID x 10.0 cm L	<b>3 µm</b>	22711 2.0 mm ID x 7.5 cm L <b>5 µm</b>
	21810	2.0 mm ID x 15.0 cm L	<b>3 µm</b>	22712 2.0 mm ID x 10.0 cm L <b>5 µm</b>
	22701	2.0 mm ID x 25.0 cm L	<b>3 µm</b>	21458 2.0 mm ID x 15.0 cm L <b>5 µm</b>
	22702	3.0 mm ID x 2.0 cm L	<b>3 µm</b>	22713 2.0 mm ID x 25.0 cm L <b>5 µm</b>
	22703	3.0 mm ID x 3.5 cm L	<b>3 µm</b>	22714 3.0 mm ID x 2.0 cm L <b>5 µm</b>
	21842	3.0 mm ID x 5.0 cm L	<b>3 µm</b>	22715 3.0 mm ID x 3.5 cm L <b>5 µm</b>
	21843	3.0 mm ID x 7.5 cm L	<b>3 µm</b>	22716 3.0 mm ID x 5.0 cm L <b>5 µm</b>
	21939	3.0 mm ID x 10.0 cm L	<b>3 µm</b>	22717 3.0 mm ID x 7.5 cm L <b>5 µm</b>
	21844	3.0 mm ID x 15.0 cm L	<b>3 µm</b>	22718 3.0 mm ID x 10.0 cm L <b>5 µm</b>
	22704	3.0 mm ID x 25.0 cm L	<b>3 µm</b>	22719 3.0 mm ID x 15.0 cm L <b>5 µm</b>
	22705	4.6 mm ID x 2.0 cm L	<b>3 µm</b>	22720 3.0 mm ID x 25.0 cm L <b>5 µm</b>
	22706	4.6 mm ID x 3.5 cm L	<b>3 µm</b>	22721 4.6 mm ID x 2.0 cm L <b>5 µm</b>
	21831	4.6 mm ID x 5.0 cm L	<b>3 µm</b>	22722 4.6 mm ID x 3.5 cm L <b>5 µm</b>
	21830	4.6 mm ID x 7.5 cm L	<b>3 µm</b>	22723 4.6 mm ID x 5.0 cm L <b>5 µm</b>
	21940	4.6 mm ID x 10.0 cm L	<b>3 µm</b>	22724 4.6 mm ID x 7.5 cm L <b>5 µm</b>
	21829	4.6 mm ID x 15.0 cm L	<b>3 µm</b>	22725 4.6 mm ID x 10.0 cm L <b>5 µm</b>
	22707	4.6 mm ID x 25.0 cm L	<b>3 µm</b>	21455 4.6 mm ID x 15.0 cm L <b>5 µm</b>
	21997	2.0 mm ID x 1.0 cm L	<b>3 µm</b>	21456 4.6 mm ID x 25.0 cm L <b>5 µm</b>
	21453	3.2 mm ID x 1.5 cm L	<b>5 µm</b>	pkg. of 3 Guard Cartridges for all 3 µm ODS-100V 2.0 mm ID columns pkg. of 3 Guard Cartridges for all ODS-100V 4.6 mm ID columns
	19308	TSKgel Guard Cartridge Holder for 2.0 mm ID Cartridges		
	19018	TSKgel Guard Cartridge Holder for 3.2 mm ID Cartridges		

This sheet contains the recommended operating conditions and the specifications for TSK-GEL ODS-100V columns. Installation instructions and column care information are described in a separate Instruction Manual.

#### A. OPERATING CONDITIONS

1. Shipping Solvent: Acetonitrile

**Note:** When a buffer with high viscosity is used, the flow rate may have to be reduced so as not to exceed the maximum pressure drop. When changing solvents, use a flow rate equal to 25% of the maximum flow rate.

2. Max. Pressure:		Part Numbers
90 kg / cm <sup>2</sup>	= 1300 psi	P/N 22709; P/N 22710; P/N 22714; P/N 22715; P/N 22721; P/N 22722;
120 kg / cm <sup>2</sup>	= 1740 psi	P/N 22700; P/N 22702; P/N 22703; P/N 22705; P/N 22706; P/N 22716; P/N 22723
150 kg / cm <sup>2</sup>	= 2200 psi	P/N 21838; P/N 21839; P/N 21812; P/N 21813; P/N 21842; P/N 21831;
180 kg / cm <sup>2</sup>	= 2600 psi	P/N 21455; P/N 21457; P/N 21458; P/N 22711; P/N 22712; P/N 22713; P/N 22717;
		P/N 22718; P/N 22719; P/N 22720; P/N 22724;
210 kg / cm <sup>2</sup>	= 3000 psi	P/N 21811; P/N 21843; P/N 21830; P/N 21456;
240 kg / cm <sup>2</sup>	= 3500 psi	P/N 21938; P/N 21810; P/N 21939; P/N 21844; P/N 21940; P/N 21829;
280 kg / cm <sup>2</sup>	= 4060 psi	P/N 22708;
300 kg / cm <sup>2</sup>	= 4300 psi	P/N 21814; P/N 22701; P/N 22704; P/N 22707

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3. pH Range: 2.0 - 7.5
4. Organic Conc.:  
 5 µm: 0 – 100% polar and non polar switch to 100% acetonitrile before switching to 100% non polar solvents.  
 3 µm: 0 – 100% polar and non polar switch to 95% acetonitrile before switching to 100% non polar solvents.
5. Temperature:  
 10°C - 80°C 5 µm columns  
 10°C - 50°C 3 µm columns
6. Cleaning Solvents  
 (1) High conc. solvent containing organic modifiers\*  
 (2) Mixture of organic acids and high conc. organic modifiers\*  
 \*Acetonitrile and methanol are recommended as a modifier.
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 0.2 ml/min (4.6 mm ID) or 0.05 ml/min (2.0 mm ID) respectively.
8. Column Protection:  
 An on-line filter (0.2-0.5 µm) equipped between pump and injection valve is recommended. Guard columns prevent the column from a contamination of strongly adsorbed solutes. As a general rule, guard columns should be replaced after 30-40 sample injections or when peaks become excessively wide.

## B. SPECIFICATIONS

The performance of TSKgel ODS-100V column is tested under the conditions described in the data sheet. All columns have passed the following quality control specifications:

No. of Theoretical Plates (N):	Part Numbers	TP (N)	Part Numbers
≥ 300	P/N 22708;	≥ 8,600	P/N 21811;
≥ 500	P/N 21814;	≥ 9,000	P/N 21843; P/N 22725;
≥ 1,000	P/N 22709; P/N 22714;	≥ 9,750	P/N 21830;
		≥ 11,000	P/N 21458;
≥ 1,500	P/N 22700; P/N 22721;	≥ 11,500	P/N 21938;
≥ 2,000	P/N 22702;	≥ 12,000	P/N 21939;
≥ 2,500	P/N 22705; P/N 22710;	≥ 13,000	P/N 22719;
≥ 2,900	P/N 21838;	≥ 13,500	P/N 21940;
≥ 3,000	P/N 21457; P/N 22715; P/N 22722;	≥ 14,000	P/N 21455;
≥ 4,000	P/N 21813; P/N 22703; P/N 22716;	≥ 17,500	P/N 21810;
≥ 4,500	P/N 21839; P/N 22706; P/N 22723;	≥ 18,000	P/N 21844;
≥ 5,500	P/N 22711;	≥ 19,500	P/N 21829; P/N 22713;
≥ 5,700	P/N 21812;	≥ 21,000	P/N 22720;
≥ 6,000	P/N 21842; P/N 22717;	≥ 23,000	P/N 21456;
≥ 6,500	P/N 21831;	≥ 28,000	P/N 22701;
≥ 7,000	P/N 22712; P/N 22724;	≥ 29,000	P/N 22704;
≥ 8,500	P/N 22718;	≥ 30,000	P/N 22707;

  

Asymmetry Factor (AF):	Part Numbers	(AF)	Part Numbers		
0.90 - 1.20	P/N 21812; P/N 21813; P/N 21811 P/N 21938; P/N 21810; P/N 22701; P/N 22703; P/N 21842; P/N 21843; P/N 21939; P/N 21844; P/N 22704; P/N 22706; P/N 21831; P/N 21830; P/N 21940; P/N 21829; P/N 22707;	<b>3 µm</b>	0.90 - 1.15 P/N 21455; P/N 21456;	<b>5 µm</b>	
			0.90 - 1.20 P/N 22710; P/N 21457; P/N 22711; P/N 22712; P/N 21458; P/N 22713; P/N 22715; P/N 22716; P/N 22717; P/N 22718; P/N 22719; P/N 22720; P/N 22722; P/N 22723; P/N 22724; P/N 22725;	<b>5 µm</b>	
			0.90 - 1.30 P/N 21839;	0.90 - 1.60 P/N 22709; P/N 22714; P/N 22721;	<b>5 µm</b>
			0.90 - 1.40 P/N 21838;	0.90 - 2.20 P/N 22708;	<b>5 µm</b>
			0.90 - 1.60 P/N 22700; P/N 22702; P/N 22705;		
0.90 - 2.20	P/N 21814;	<b>3 µm</b>			