

# TSK-GEL<sup>®</sup> ODS-100V Products

Part Numbers:	21838, 1mm ID x 3.5cm, 3 $\mu$ m	22708, 2mm ID x 1cm, 5 $\mu$ m	21997, Guard Cartridges for 2mm ID, 3 $\mu$ m columns, 3pk
	21839, 1mm ID x 5cm, 3 $\mu$ m	22709, 2mm ID x 2cm, 5 $\mu$ m	
	21814, 2mm ID x 1cm, 3 $\mu$ m, 3pk	22710, 2mm ID x 3.5cm, 5 $\mu$ m	21841, Guard Cartridges for 2mm ID, 5 $\mu$ m columns, 3pk
	22700, 2mm ID x 2cm, 3 $\mu$ m	21457, 2mm ID x 5cm, 5 $\mu$ m	21453, Guard Cartridge for 4.6mm ID, 5 $\mu$ m columns, 3pk
	21813, 2mm ID x 3.5cm, 3 $\mu$ m	22711, 2mm ID x 7.5cm, 5 $\mu$ m	
	21812, 2mm ID x 5cm, 3 $\mu$ m	22712, 2mm ID x 10cm, 5 $\mu$ m	19308, Guard Cartridge Holder for 2mm ID cartridges
	21811, 2mm ID x 7.5cm, 3 $\mu$ m	21458, 2mm ID x 15cm, 5 $\mu$ m	19018, Guard Cartridge Holder for 3.2mm ID cartridges
	21938, 2mm ID x 10cm, 3 $\mu$ m	22713, 2mm ID x 25cm, 5 $\mu$ m	
	21810, 2mm ID x 15cm, 3 $\mu$ m	22714, 3mm ID x 2cm, 5 $\mu$ m	
	22701, 2mm ID x 25cm, 3 $\mu$ m	22715, 3mm ID x 3.5cm, 5 $\mu$ m	
	22702, 3mm ID x 2cm, 3 $\mu$ m	22716, 3mm ID x 5cm, 5 $\mu$ m	
	22703, 3mm ID x 3.5cm, 3 $\mu$ m	22717, 3mm ID x 7.5cm, 5 $\mu$ m	
	22704, 3mm ID x 25cm, 3 $\mu$ m	22718, 3mm ID x 10cm, 5 $\mu$ m	
	22705, 4.6mm ID x 2cm, 3 $\mu$ m	22719, 3mm ID x 15cm, 5 $\mu$ m	
	22706, 4.6mm ID x 3.5cm, 3 $\mu$ m	22720, 3mm ID x 25cm, 5 $\mu$ m	
	21831, 4.6mm ID x 5cm, 3 $\mu$ m	22721, 4.6mm ID x 2cm, 5 $\mu$ m	
	21830, 4.6mm ID x 7.5cm, 3 $\mu$ m	22722, 4.6mm ID x 3.5cm, 5 $\mu$ m	
	21940, 4.6mm ID x 10cm, 3 $\mu$ m	22723, 4.6mm ID x 5cm, 5 $\mu$ m	
	21829, 4.6mm ID x 15cm, 3 $\mu$ m	22724, 4.6mm ID x 7.5cm, 5 $\mu$ m	
	22707, 4.6mm ID x 25cm, 3 $\mu$ m	22725, 4.6mm ID x 10cm, 5 $\mu$ m	
		21455, 4.6mm ID x 15cm, 5 $\mu$ m	
		21456, 4.6mm ID x 25cm, 5 $\mu$ m	

This sheet contains the recommended operating conditions and 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																																																																																																
2. Standard Flow Rate:	0.05mL/min (1mm ID) 0.20mL/min (2mm ID) 0.43mL/min (3mm ID) 1.00mL/min (4.6mm ID)																																																																																																
4. Max. Pressure:	<table border="1"> <thead> <tr> <th colspan="2">TSK-GEL ODS-100V, 3<math>\mu</math>m columns</th> <th colspan="2">TSK-GEL ODS-100V, 5<math>\mu</math>m columns</th> </tr> <tr> <th>Max. Pressure (MPa)</th> <th>Column Size</th> <th>Max. Pressure (MPa)</th> <th>Column Size</th> </tr> </thead> <tbody> <tr><td>15</td><td>1mm ID x 3.5cm</td><td>28</td><td>2mm ID x 1cm</td></tr> <tr><td>15</td><td>1mm ID x 5cm</td><td>9</td><td>2mm ID x 2cm</td></tr> <tr><td>30</td><td>2mm ID x 1cm</td><td>9</td><td>2mm ID x 3.5cm</td></tr> <tr><td>12</td><td>2mm ID x 2cm</td><td>18</td><td>2mm ID x 5cm</td></tr> <tr><td>15</td><td>2mm ID x 3.5cm</td><td>18</td><td>2mm ID x 7.5cm</td></tr> <tr><td>15</td><td>2mm ID x 5cm</td><td>18</td><td>2mm ID x 10cm</td></tr> <tr><td>21</td><td>2mm ID x 7.5cm</td><td>18</td><td>2mm ID x 15cm</td></tr> <tr><td>24</td><td>2mm ID x 10cm</td><td>18</td><td>2mm ID x 25cm</td></tr> <tr><td>24</td><td>2mm ID x 15cm</td><td>9</td><td>3mm ID x 2cm</td></tr> <tr><td>30</td><td>2mm ID x 25cm</td><td>9</td><td>3mm ID x 3.5cm</td></tr> <tr><td>12</td><td>3mm ID x 2cm</td><td>12</td><td>3mm ID x 5cm</td></tr> <tr><td>12</td><td>3mm ID x 3.5cm</td><td>18</td><td>3mm ID x 7.5cm</td></tr> <tr><td>30</td><td>3mm ID x 25cm</td><td>18</td><td>3mm ID x 10cm</td></tr> <tr><td>12</td><td>4.6mm ID x 2cm</td><td>18</td><td>3mm ID x 15cm</td></tr> <tr><td>12</td><td>4.6mm ID x 3.5cm</td><td>18</td><td>3mm ID x 25cm</td></tr> <tr><td>15</td><td>4.6mm ID x 5cm</td><td>9</td><td>4.6mm ID x 2cm</td></tr> <tr><td>21</td><td>4.6mm ID x 7.5cm</td><td>9</td><td>4.6mm ID x 3.5cm</td></tr> <tr><td>24</td><td>4.6mm ID x 10cm</td><td>12</td><td>4.6mm ID x 5cm</td></tr> <tr><td>24</td><td>4.6mm ID x 15cm</td><td>18</td><td>4.6mm ID x 7.5cm</td></tr> <tr><td>30</td><td>4.6mm ID x 25cm</td><td>18</td><td>4.6mm ID x 10cm</td></tr> <tr><td></td><td></td><td>18</td><td>4.6mm ID x 15cm</td></tr> <tr><td></td><td></td><td>21</td><td>4.6mm ID x 25cm</td></tr> </tbody> </table>	TSK-GEL ODS-100V, 3 $\mu$ m columns		TSK-GEL ODS-100V, 5 $\mu$ m columns		Max. Pressure (MPa)	Column Size	Max. Pressure (MPa)	Column Size	15	1mm ID x 3.5cm	28	2mm ID x 1cm	15	1mm ID x 5cm	9	2mm ID x 2cm	30	2mm ID x 1cm	9	2mm ID x 3.5cm	12	2mm ID x 2cm	18	2mm ID x 5cm	15	2mm ID x 3.5cm	18	2mm ID x 7.5cm	15	2mm ID x 5cm	18	2mm ID x 10cm	21	2mm ID x 7.5cm	18	2mm ID x 15cm	24	2mm ID x 10cm	18	2mm ID x 25cm	24	2mm ID x 15cm	9	3mm ID x 2cm	30	2mm ID x 25cm	9	3mm ID x 3.5cm	12	3mm ID x 2cm	12	3mm ID x 5cm	12	3mm ID x 3.5cm	18	3mm ID x 7.5cm	30	3mm ID x 25cm	18	3mm ID x 10cm	12	4.6mm ID x 2cm	18	3mm ID x 15cm	12	4.6mm ID x 3.5cm	18	3mm ID x 25cm	15	4.6mm ID x 5cm	9	4.6mm ID x 2cm	21	4.6mm ID x 7.5cm	9	4.6mm ID x 3.5cm	24	4.6mm ID x 10cm	12	4.6mm ID x 5cm	24	4.6mm ID x 15cm	18	4.6mm ID x 7.5cm	30	4.6mm ID x 25cm	18	4.6mm ID x 10cm			18	4.6mm ID x 15cm			21	4.6mm ID x 25cm
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5. pH Range:	2.0 - 7.5																																																																																																
6. Salt Conc. Range:	No limitation																																																																																																
7. Organic Conc. Range:	No limitation																																																																																																
8. Temperature:	10 - 50°C																																																																																																
9. Cleaning Solvents:	(1) Sample property: hydrophobic compounds Water soluble organic solvents such as 70-100% acetonitrile and methanol in aqueous buffer  (2) Sample property: basic compounds Acidic solutions containing water soluble organic solvents acetonitrile and methanol																																																																																																

DS1206 Revised 21DECEMBER2009

[www.tosohbioscience.com](http://www.tosohbioscience.com)

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Zettachring 6  
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FAX: 0711/13257 89

10. Storage:	Store the column in the shipping solvent if it will not be used within three days. Prevent air from entering the column. For overnight storage flush the column with mobile phase at 0.2mL/min.																																																																																																																																																
11. Column Protection:	An on-line filter (0.2-0.5µm) equipped between pump and injection valve is recommended. Guard cartridges prevent the column from a contamination of strongly adsorbed solutes.																																																																																																																																																
<b>B. SPECIFICATIONS</b>																																																																																																																																																	
The performance of TSK-GEL ODS-100V columns are tested under the conditions described in the data sheet. All columns have passed the following quality control specifications:																																																																																																																																																	
Number of Theoretical Plates (N) and Asymmetry Factor (AF):	<table border="1"> <thead> <tr> <th colspan="3">TSK-GEL ODS-100V, 3µm columns</th> <th colspan="3">TSK-GEL ODS-100V, 5µm columns</th> </tr> <tr> <th>N (TP/column)</th> <th>AF</th> <th>Column Size</th> <th>N (TP/column)</th> <th>AF</th> <th>Column Size</th> </tr> </thead> <tbody> <tr><td>2,900</td><td>0.90-1.40</td><td>1mm ID x 3.5cm</td><td>300</td><td>0.90-2.20</td><td>2mm ID x 1cm</td></tr> <tr><td>4,500</td><td>0.90-1.30</td><td>1mm ID x 5cm</td><td>1,000</td><td>0.90-1.60</td><td>2mm ID x 2cm</td></tr> <tr><td>500</td><td>0.90-2.20</td><td>2mm ID x 1cm</td><td>2,500</td><td>0.90-1.20</td><td>2mm ID x 3.5cm</td></tr> <tr><td>1,500</td><td>0.90-1.60</td><td>2mm ID x 2cm</td><td>3,000</td><td>0.90-1.20</td><td>2mm ID x 5cm</td></tr> <tr><td>4,000</td><td>0.90-1.20</td><td>2mm ID x 3.5cm</td><td>5,500</td><td>0.90-1.20</td><td>2mm ID x 7.5cm</td></tr> <tr><td>5,700</td><td>0.90-1.20</td><td>2mm ID x 5cm</td><td>7,000</td><td>0.90-1.20</td><td>2mm ID x 10cm</td></tr> <tr><td>8,600</td><td>0.90-1.20</td><td>2mm ID x 7.5cm</td><td>11,000</td><td>0.90-1.20</td><td>2mm ID x 15cm</td></tr> <tr><td>11,500</td><td>0.90-1.20</td><td>2mm ID x 10cm</td><td>18,000</td><td>0.90-1.20</td><td>2mm ID x 25cm</td></tr> <tr><td>17,500</td><td>0.90-1.20</td><td>2mm ID x 15cm</td><td>1,000</td><td>0.90-1.60</td><td>3mm ID x 2cm</td></tr> <tr><td>28,000</td><td>0.90-1.20</td><td>2mm ID x 25cm</td><td>3,000</td><td>0.90-1.20</td><td>3mm ID x 3.5cm</td></tr> <tr><td>2,000</td><td>0.90-1.60</td><td>3mm ID x 2cm</td><td>4,000</td><td>0.90-1.20</td><td>3mm ID x 5cm</td></tr> <tr><td>4,000</td><td>0.90-1.20</td><td>3mm ID x 3.5cm</td><td>6,000</td><td>0.90-1.20</td><td>3mm ID x 7.5cm</td></tr> <tr><td>29,000</td><td>0.90-1.20</td><td>3mm ID x 25cm</td><td>8,500</td><td>0.90-1.20</td><td>3mm ID x 10cm</td></tr> <tr><td>2,500</td><td>0.90-1.60</td><td>4.6mm ID x 2cm</td><td>13,000</td><td>0.90-1.20</td><td>3mm ID x 15cm</td></tr> <tr><td>4,500</td><td>0.90-1.20</td><td>4.6mm ID x 3.5cm</td><td>21,000</td><td>0.90-1.20</td><td>3mm ID x 25cm</td></tr> <tr><td>6,500</td><td>0.90-1.20</td><td>4.6mm ID x 5cm</td><td>1,500</td><td>0.90-1.60</td><td>4.6mm ID x 2cm</td></tr> <tr><td>9,750</td><td>0.90-1.20</td><td>4.6mm ID x 7.5cm</td><td>3,000</td><td>0.90-1.20</td><td>4.6mm ID x 3.5cm</td></tr> <tr><td>13,500</td><td>0.90-1.20</td><td>4.6mm ID x 10cm</td><td>4,500</td><td>0.90-1.20</td><td>4.6mm ID x 5cm</td></tr> <tr><td>19,500</td><td>0.90-1.20</td><td>4.6mm ID x 15cm</td><td>7,000</td><td>0.90-1.20</td><td>4.6mm ID x 7.5cm</td></tr> <tr><td>30,000</td><td>0.90-1.20</td><td>4.6mm ID x 25cm</td><td>9,000</td><td>0.90-1.20</td><td>4.6mm ID x 10cm</td></tr> <tr><td></td><td></td><td></td><td>14,000</td><td>0.90-1.15</td><td>4.6mm ID x 15cm</td></tr> <tr><td></td><td></td><td></td><td>23,000</td><td>0.90-1.15</td><td>4.6mm ID x 25cm</td></tr> </tbody> </table>	TSK-GEL ODS-100V, 3µm columns			TSK-GEL ODS-100V, 5µm columns			N (TP/column)	AF	Column Size	N (TP/column)	AF	Column Size	2,900	0.90-1.40	1mm ID x 3.5cm	300	0.90-2.20	2mm ID x 1cm	4,500	0.90-1.30	1mm ID x 5cm	1,000	0.90-1.60	2mm ID x 2cm	500	0.90-2.20	2mm ID x 1cm	2,500	0.90-1.20	2mm ID x 3.5cm	1,500	0.90-1.60	2mm ID x 2cm	3,000	0.90-1.20	2mm ID x 5cm	4,000	0.90-1.20	2mm ID x 3.5cm	5,500	0.90-1.20	2mm ID x 7.5cm	5,700	0.90-1.20	2mm ID x 5cm	7,000	0.90-1.20	2mm ID x 10cm	8,600	0.90-1.20	2mm ID x 7.5cm	11,000	0.90-1.20	2mm ID x 15cm	11,500	0.90-1.20	2mm ID x 10cm	18,000	0.90-1.20	2mm ID x 25cm	17,500	0.90-1.20	2mm ID x 15cm	1,000	0.90-1.60	3mm ID x 2cm	28,000	0.90-1.20	2mm ID x 25cm	3,000	0.90-1.20	3mm ID x 3.5cm	2,000	0.90-1.60	3mm ID x 2cm	4,000	0.90-1.20	3mm ID x 5cm	4,000	0.90-1.20	3mm ID x 3.5cm	6,000	0.90-1.20	3mm ID x 7.5cm	29,000	0.90-1.20	3mm ID x 25cm	8,500	0.90-1.20	3mm ID x 10cm	2,500	0.90-1.60	4.6mm ID x 2cm	13,000	0.90-1.20	3mm ID x 15cm	4,500	0.90-1.20	4.6mm ID x 3.5cm	21,000	0.90-1.20	3mm ID x 25cm	6,500	0.90-1.20	4.6mm ID x 5cm	1,500	0.90-1.60	4.6mm ID x 2cm	9,750	0.90-1.20	4.6mm ID x 7.5cm	3,000	0.90-1.20	4.6mm ID x 3.5cm	13,500	0.90-1.20	4.6mm ID x 10cm	4,500	0.90-1.20	4.6mm ID x 5cm	19,500	0.90-1.20	4.6mm ID x 15cm	7,000	0.90-1.20	4.6mm ID x 7.5cm	30,000	0.90-1.20	4.6mm ID x 25cm	9,000	0.90-1.20	4.6mm ID x 10cm				14,000	0.90-1.15	4.6mm ID x 15cm				23,000	0.90-1.15	4.6mm ID x 25cm
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