



Im Leuschnerpark 4, 64347 Griesheim, Germany
 Tel: +49 6155-7043700 Fax: +49 6155-8357900
 E-Mail: info.tbg@tosoh.com
 Web: www.tosohbioscience.de

3604 Horizon Drive, Suite 100, King of Prussia, PA 19406, USA
 Tel: +1 800-366-4875 Fax: +1 610-272-3028
 E-Mail: info.tbl@tosoh.com
 Web: www.tosohbioscience.com

OPERATING CONDITIONS and SPECIFICATIONS

TSKgel® SuperMultiporeHZ Products

Part Numbers:	0021815	4.6 mm ID x 15.0 cm L	SuperMultiporeHZ-N	3 µm
	0021816	4.6 mm ID x 2.0 cm L	TSKgel SuperMPHZ-N Guard	3 µm
	0021488	4.6 mm ID x 15.0 cm L	SuperMultiporeHZ-M	4 µm
	0021489	4.6 mm ID x 2.0 cm L	TSKgel SuperMPHZ-M Guard	4 µm
	0021885	4.6 mm ID x 15.0 cm L	SuperMultiporeHZ-H	6 µm
	0021886	4.6 mm ID x 2.0 cm L	TSKgel SuperMPHZ-H Guard	6 µm

This sheet contains the recommended operating conditions and the specifications for **TSKgel** SuperMultiporeHZ columns and guard columns. **TSKgel** SuperMultiporeHZ columns have different pores sizes within the same bead. **TSKgel** SuperMultiporeHZ-type columns are used exclusively for Gel Permeation Chromatography. Installation instructions and column care information are described in a separate Instruction Manual.

A. OPERATING CONDITIONS

1. Shipping Solvent Tetrahydrofuran (THF)
2. Max.Flow Rate 0.4 mL/min
3. Standard Flow Rate 0.15 - 0.35 mL/min
4. Max. Pressure 4 MPa **TSKgel** SuperMultiporeHZ-N
 2 MPa **TSKgel** SuperMultiporeHZ-M
 1 MPa **TSKgel** SuperMultiporeHZ-H
5. Multiple Columns **TSKgel** SuperMultiporeHZ columns of the same pore size can be connected in series to improve resolution. Connecting **TSKgel** SuperMultiporeHZ columns with different pore sizes or connecting them with other H-type columns will cause loss of linearity in the calibration curve. Connect analytical columns using short pieces of 1/16" stainless steel tubing with an internal diameter of 0.01" or smaller.
6. Solvents THF
7. Temperature 25 - 60°C
8. Sample Size 0.001 - 0.1 mg per 4.6 mm ID x 15.0 cm L column.
9. Storage The column can be left overnight in THF in the LC system. When it will not be used for longer periods of time, remove the column from the equipment, seal the ends with the provided protective screws, and store it at laboratory temperature. At all times, prevent air from entering the column!
10. Column Protection The use of guard columns is recommended to prolong the life of the analytical column. Guard columns are not for analysis, they do not improve resolution when connected to the main column. They are also not a substitute for filtering the mobile phase and the sample. A guard column does reduce pump pulsation, and further protects the main column by collecting highly adsorptive components and insoluble substances. Guard column life depends greatly on sample cleanliness. As a general rule, guard columns should be replaced when the peaks become excessively wide, or when the peaks show splitting.

B. SPECIFICATIONS

The performance of **TSKgel** SuperMultiporeHZ columns are tested under the conditions described in the Data Sheet. All analytical columns have passed the following quality control specifications:

Number of Theoretical Plates (N)	≥ 20,000	TSKgel SuperMultiporeHZ-N
	≥ 16,000	TSKgel SuperMultiporeHZ-M
	≥ 11,000	TSKgel SuperMultiporeHZ-H
Asymmetry Factor (AF):	0.7 - 1.4	TSKgel SuperMultiporeHZ-N
	0.7 - 1.4	TSKgel SuperMultiporeHZ-M
	0.7 - 1.4	TSKgel SuperMultiporeHZ-H

C. SOLVENT COMPATIBILITY for SuperMultipore HZ COLUMNS

TSKgel SuperMultiporeHZ columns can be used only in THF. This solvent cannot be replaced with any other solvent.