

Ordering Information

Each and every order for a **GROM** chromatography column includes not only the desired hardware, but also

a Test Chromatogramm from that individual column produced in the **GROM** Quality Insurance Laboratory

a Quality Status Report to ensure customer feedback conform with GLP and ISO 9001 Standards

and, last not least our newest product, i.e., a package of "**GROM** Gummi Bears"
(subject to local purchasing agreements and federal import restrictions; i.e. not available in USA)



Our new ordering system: - Quick, simple and unequivocal -

In this new catalogue, a large number of stationary phases have been included for the first time, among others more than 20 new phases from our own range of packing materials. This would have placed great strains on our old order number system; the inclusion of a further single stationary phase in the existing palette could for instance mean that over 5500 new order numbers would have had to have been introduced. For this reason and in anticipation of

the continually growing demands in HPLC, changes in this order number system were unavoidable.

A modern order number code must satisfy primarily the following requirements:

- It should be self-explanatory and understandable for the customer
- It should be open for future developments, i.e., there should be no numerical limitation.
- It should be computer-compatible

In order to satisfy these demands, we must accept a minor blemish - up to 15 positions may be necessary to fully define an article like a common HPLC column, although a typical order number will have only 14 positions as described below. Nevertheless the new system is simple and easy to use, since it includes all parameters required to specify an HPLC column.

The new Order Numbers include all parameters required to specify an HPLC column

Tradename/ manufacturer	Basic material	Phase coating, specialty columns	Phase type	Particle diameter (µm)	Pore diameter (nm)*	Hardware type	Column length (cm)	column diameter (mm, resp. µm x 0.1**)
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Example
To order the following HPLC column:

GROM-SIL, ODS 4, Particle diameter 3 µm, Pore diameter 10 nm*, C(K)artridge 25 cm long, 4 mm i.d. or µm x 0.1*****

we abbreviate:



G S O D 4 0 3 1 0 K 2 5 0 4

This means:

All parameters required to describe an HPLC column are included in the new order number. Using the abbreviations shown on the next page, the ordering number is quickly and easily established, and speedy and correct processing of your order is guaranteed.

* 10nm = 100Å

** English „cartridge“ = German „Kartusche“

*** for capillary columns „µm x 0.1“

Order number abbreviations and letter code at the following positions:

1st. position of the order number

Abbreviation/Tradename	Manufacturer	
B	μ Bondapak	Waters (Milford, MA, USA)
C	Capcell	Shiseido (Tokyo, Japan)
E	Eurospher	Eurochrom-Knauer (Berlin, FRG)
G	GROM-Sil	Grom (Herrenberg, FRG)
H	Hypersil	Shandon (Runcorn, UK)
I	Inertsil	Gl-Science (Tokyo, Japan)
K	Kromasil	Eka-Nobel (Göteborg, Sweden)
L	Synchropak	Synchrom (Lafayette, NJ, USA)
M	Lichrosorb	Merck (Darmstadt, FRG)
M	Lichrospher	Merck (Darmstadt, FRG)
M	Superspher	Merck (Darmstadt, FRG)
N	Nucleosil u. Polygosil	Macherey-Nagel (Düren, FRG)
P	Partisil	Whatman (Clifton, NJ, USA)
R	PRP-Phases	Hamilton (Reno, NV, USA)
S	Spherisorb	PhaseSep (Deeside, UK)
V	Vydac	Vydac (Hesperia, CA USA)
Z	Zorbax and Ultron	Rockland Techn. Inc., (Rockland, DE, USA)

2nd. position of the order number

Abbreviation	Basic-material
S	Silica gel
P	Polymeric
A	Aluminium oxide
T	Titanium oxide
C	Calcium hydroxide
K	Graphitized carbon (German „Kohlenstoff“)

3rd. und 4th. position of the order number

Abbreviation	Phases and specialty columns
Stationary phases:	
AC	Amino-Cyano-phase
BA	Basic (for bases, e.g., amines)
BU	Butyl- / C4-
CH	Chiral phases
CN	CN- / cyanopropyl-/nitrile-
DM	Dimethyl-, C2-phase
HE	Hexyl- / C6-
HI	Hydrophobic Interaction Chromatography/HIC/ salting-out chromatography
NH	NH ₂ - / Aminopropyl-
NO	Nitropropyl-
NP	Normal phase silica
OA	ODS-Amino-, mixed-phase
OC	Octyl- / C8-
OD	ODS / Octadecyl- / C18-
OH	OH- / Diol phase on silical
PH	Phenyl-
PR	Propyl-
SA	Strong Anion exchanger / SAX /
SC	Strong Cation exchanger / SCX /
SE	SEC / Steric Exclusion Chromatography / GPC /
TM	TMS / Trimethylsilane- / C 1-
WA	Weak Anion exchanger / WAX
WC	Weak Cation exchanger / WCX

3rd. and 4th. position of the order number

Abbreviation	Phases and specialty columns
Specialty columns:	
AA	Acid Analysis Column
AL	Column for separation of Alcohols
BI	Column for separation of Bitter substances in beer
BR	Bio Rev. phase; special reversed phase column for the separation of proteins, peptides and nucleotides
DA	DABS-Cl/Dimethylaminoazobenzene-sulfonyl chloride; for amino acid analysis
FL	FLEC-/Fluorenyl ethyl chloroformate; for D/L-amino acid analysis
FM	FMOC-/9-Fluorenylmethyloxycarbonyl chloride; for amino acid analysis
OP	OPA-/ortho-phthaldialdehyde; for amino acid analysis
PE	Column for the analysis of pesticides
PA	Column for the analysis of PAH's, (polycyclic aromatic hydrocarbons)
PO	Special column for analysis of polyamines and biogenic amines Columns for analysis of sugars (German „Zucker“):
ZC	Cation exchanger/ Ca ⁺⁺ form
ZH	Cation exchanger/ H ⁺ form
ZO	Anion exchanger / OH ⁻ form
ZP	Cation exchanger / Pb ⁺⁺ form
ME	Method-development-set (German „Methoden Entwicklung“)

5th. position of the order number

Abbreviation	Phase type
If a manufacturer produces more than one phase of the same type (e.g., several C18 or C8 phases), these are differentiated by consecutive numbering (see pages 144-151). GROM-SIL phases with the same ligands are numbered according to increasing hydrophobicity (see comparison of selectivity on pages 10 and 11) and are thus characterised by their order number.	

10th. position of the order number

Abbreviation	Hardware
B	BIAX-column
C	Capillary column (for i.d. „μm x 0.1“ instead of „mm“ in the 13th. position)
C....T	Capillary column with short guard column head (tiny / 15th. position)
C....L	Capillary column with long guard column head (long / 15th. position)
G	Glass column
K	Cartridge (German „Kartusche“)
M	Mixed hardware, i.e. wetted parts made from PEEK, holding devices, threads, etc. from stainless steel (pressure resistant up to 40 MPa)
P	PEEK column (all parts made off PEEK)
S	Standard column
T	Triple-set (three identical cartridges from the same batch)
U	Up-scaling-set
V....V	Guard column (German „Vorsäule“; pk. of 5)
R	Refill

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