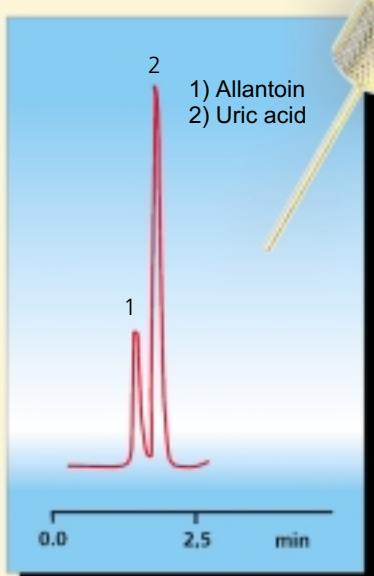
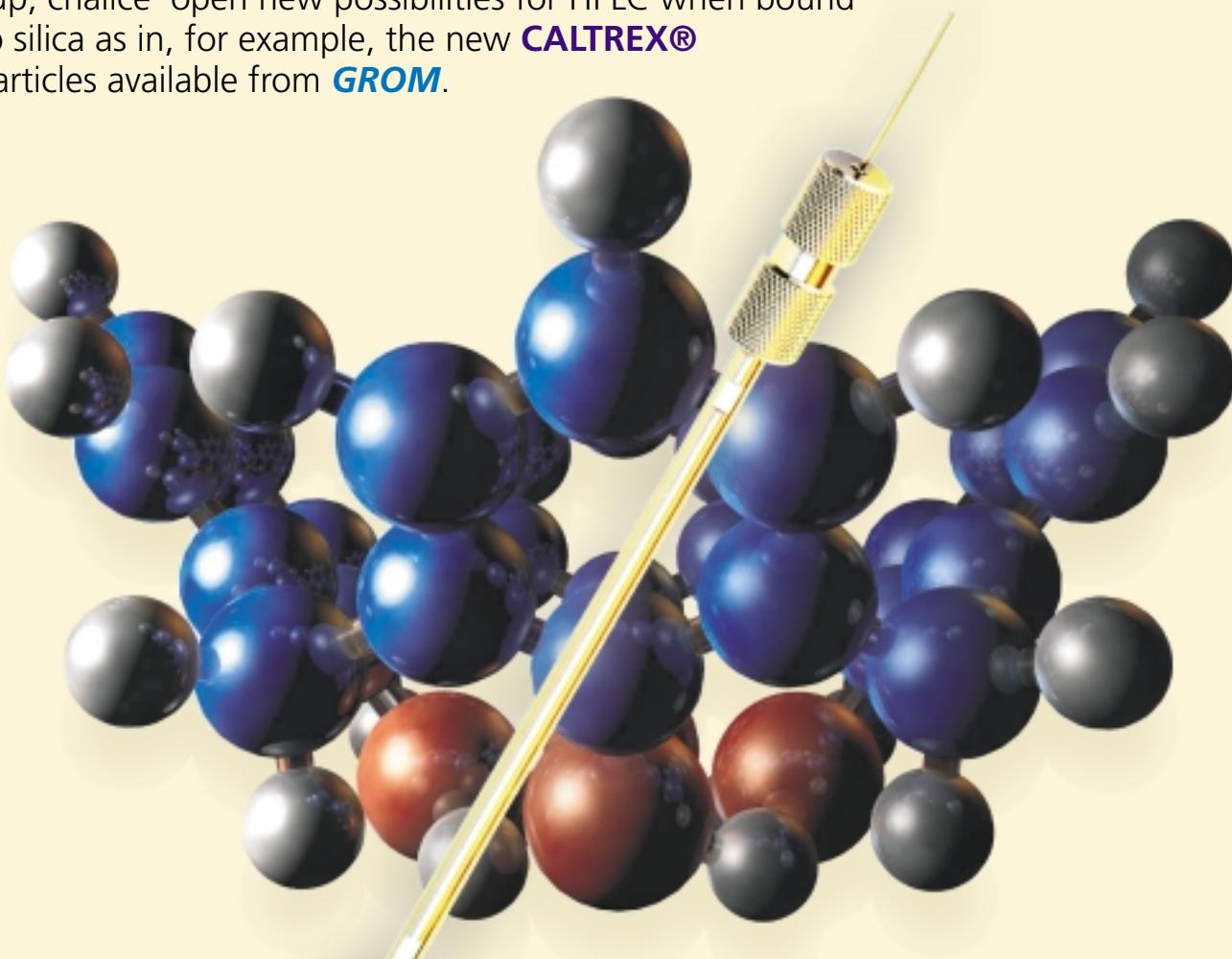
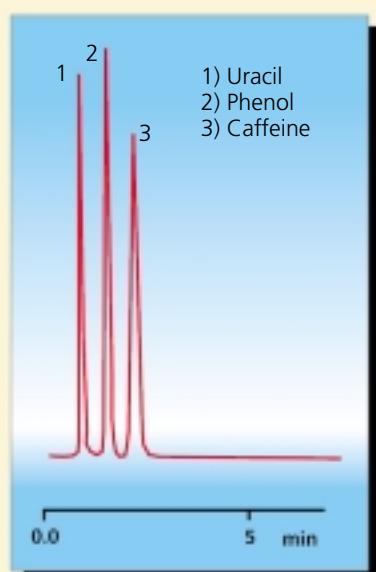


Novel, unique Calixarene HPLC packings from SYNAPTEC

Calixarenes are cyclic condensation products of para-substituted phenols and formaldehyde. These cuplike molecules (Greek kalyx) = cup, chalice open new possibilities for HPLC when bound to silica as in, for example, the new **CALTREX®** particles available from **GROM**.



Column phase: CALTREX HS, 5 µm
Column size: 125 x 4 mm
Eluent: H₂O / ACN = 95 / 5
Flow rate: 1.0 mL / min
Temperature: 25°C
Detection (UV): 254 nm



Column phase: CALTREX HS, 5 µm
Column size: 125 x 3 mm
Eluent: 2.5 mM K-Phosphate, pH 3.0 / ACN = 95 / 5
Flow rate: 0.7 mL / min
Temperature: 25°C
Detection (UV): 220 nm

High speed columns packed with **CALTREX®** particles unite two desirable properties, namely rapid separations and the resolution of difficult separation problems, into a single product. Efficient and rapid separations are absolute requirements for many applications, for example, in screening for new compounds in the pharmaceutical industry.

..... in the Service of Science

GROM services, prompt and quickly responding

GROM Column-packing service.

GROM has established a long-standing reputation for highest quality and reliability in the field of column packing. In the **GROM** laboratories, the majority of the stationary phases available world-wide, in particular those from all recognized manufacturers (see table below), are expertly packed in the unique **NovoGROM** column hardware. On request, **GROM** will also pack columns with stationary phases supplied by the customer.

All these stationary phases, plus each of the **GROM** Sil phases (listed on pages 12 / 13) are routinely packed by the **GROM** column packing service:

| Trade name/ Manufacturer | Stationary phase type | | | | | | | | | | | | | | | | | |
|-------------------------------------|------------------------------|------|--------|----|-----|----|--------|----|----|---------|-------|-------|------|--------|--------|-----|-----|----|
| | C18 | C18B | PS/DVB | C8 | C8B | C6 | Phenyl | C4 | C1 | Nitrile | Amino | Nitro | Diol | SAX/SB | SCX/SA | WAX | WCX | Si |
| AGP Chromtech | | | | | | | | | | | | | | | | | | ● |
| u-Bondapak Waters | ● | | | | | | ● | | | ● | ● | ● | | | | | | ● |
| Capcell Shiseido | ● | | | | | ● | ● | | ● | ● | ● | ● | | | | | | |
| Eurospher Knauer | ● | | | | | ● | | | ● | ● | ● | ● | | ● | ● | | | ● |
| GROM-SIL Grom | ● | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Hypersil Thermo Quest | ● | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | ● |
| Intersil GI-Science | ● | | | | | ● | | ● | | | | | | | | | | ● |
| Kromasil Eka-Nobel | ● | | | | | ● | | | ● | ● | | | | | | | | ● |
| LiChrosorb Merck | ● | | | | | ● | | | ● | ● | ● | ● | ● | | | | | ● |
| LiChrospher Merck | ● | | | | | ● | ● | | | | ● | ● | ● | | | | | ● |
| Nucleosil Machery-Nagel | ● | ● | | | | ● | | ● | ● | ● | ● | ● | ● | ● | ● | | | ● |
| Partisil Whatman | ● | | | | | ● | | | | ● | ● | ● | | | ● | ● | | ● |
| Polygosil Machery-Nagel | ● | | | | | ● | | | | ● | ● | ● | ● | | | | | ● |
| PRP Hamilton | | | | ● | | | | | | | | | | ● | ● | | | |
| Purospher Merck | ● | | | | | | | | | | | | | | | | | |
| Spherisorb Waters | ● | ● | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | ● |
| Superspher Merck | ● | | | | | ● | | | | | | | | | | | | |
| Synchropak Micra Scientific | ● | | | | | ● | | | ● | ● | | | | ● | ● | ● | ● | ● |
| Vydac The Separations Group | ● | | | | | ● | | ● | ● | ● | | | | | | | | |
| YMC YMC | ● | ● | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | ● |
| Zorbax Agilent Technologies | ● | ● | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | ● |

GROM Column-refill service

The routine short delivery time of 24 - 48 hours applies in particular to the **GROM** column-refill service. On request, column hardware from other manufacturers can also be refilled with the above listed stationary phases. This economical refilling service is available for microbore, analytical and preparative columns.

GROM Preparative-service

Preparative chromatographic purifications of customers products, including chiral separations, on a mg up to gram scale are offered by the reliable and prompt **GROM** preparative-service. Detailed information available on request.

for analytical and preparative

High Performance Liquid Chromatography

The palette of **GROM** packed HPLC columns ranges from 100 µm capillaries of 5 mm length to 10 cm diameter preparative columns with a length of 100 cm.

NovoGROM capillaries, microbore and analytical columns in the standard dimensions (200, 300, 500 and 800 µm, 1, 2, 3, 4 and 4.6 mm i.d.) packed with any of the stationary phases listed below are available from stock. Orders for HPLC columns are routinely shipped within 48 hours.

NovoGROM HPLC columns huge variety of standard column dimensions

| | | Inner diameter (mm) | | | | | | | | | | | | | | | | | | |
|--------------------------------|------|---------------------|-----|-----|-----|---|---|---|---|-----|---|----|----|----|----|----|----|----|----|-----|
| | | <0,3 | 0,3 | 0,5 | 0,8 | 1 | 2 | 3 | 4 | 4,6 | 8 | 10 | 16 | 20 | 30 | 40 | 50 | 60 | 75 | 100 |
| guard column- cartridges | 5 | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | | | | | | | | | | |
| | 10 | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | | |
| | 20 | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | | |
| | 30 | | | | | | | | | | | | | | | | | | | |
| | 40 | | | | | | | | | ◆ | ◆ | | | | | | | | | |
| | 50 | | | | | | | | | | | | | | | | | | | |
| columns and cartridges | 20 | | | | | | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | | |
| | 25 | | | | | | | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | | |
| | 30 | | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | | |
| | 40 | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | | |
| | 50 | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | |
| | 60 | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | |
| | 75 | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | |
| | 100 | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | |
| | 125 | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | |
| | 150 | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | |
| | 200 | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | |
| | 250 | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | |
| | 300 | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | |
| | 500 | | | | | | | | | | | | | | | | | | | |
| | 1000 | | | | | | | | | | | | | | | | | | | |

*guard column head or holder required.

Custom analysis service (Environmental, biopharmaceutical and drug analysis)

Environmental analysis

We offer the following environmental analyses:

Matrix:

Drinking water, industrial water, waste water, ground water, soil, sludges, core samples.
 6 PAH's (old TVO protocol)
 16 PAH's (new TVO protocol)
 Anions
 Cations
 Organic acids
 Atrazine and related pesticides
 Phenols, halophenols and nitrophenols
 Carbamate pesticides and herbicides
 Urea-based pesticides and herbicides

We also offer a customized method development service for all types of samples. Please inquire.

Biopharmacy

The following biopharmaceutical analyses are offered:

Matrix:

Whole blood, serum, plasma, urine, lacrimal fluid, saliva, seminal fluid, vaginal secretions, organ and tissue samples, bone, cell cultures, skin permeates, erythrocytes, microsomes, etc., from both human and animal sources.

Validated methods for approx. 300 drugs (German Red List of Pharmaceuticals)

Custom method development for specific samples

Adaptation of customer's methods to routine methods

Enantiospecific separation of drugs

Analysis of drug metabolites

Determination of drug-concentration levels in samples from patients

Bioavailability of phytopharmaceuticals

Determination of anions and cations in

human and animal samples

Determination of phenols, PAH's, CHC's and PC

Isolation of metabolites from plasma or urine on a preparative scale

Pharmaceutical analysis

We offer the following pharmaceutical analyses:

Analyses according to DAB 9, DAC 1986, HAB 1 and other pharmacopoeias

Method development and validation of customer-specific analyses

Adaptation of customer's methods to routine methods

Determination of the enantiomeric composition of racemates

Isolation and identification of drug metabolites

Method development for analysis of phytopharmaceuticals

Isolation and identification of phytopharmaceuticals

Development and improvement of galenic preparations

Stability analysis

Editing of drug approval applications

Note!

Due to safety regulations we are not authorized to accept shipments of any viral- or radioactive contaminated sample.

Other Tradenames and Manufacturers

of well accepted Stationary Phases for HPLC

| | | | |
|-------------------------|------------------------------|-------------------------|------------------|
| Adsorbosphere | Alltech | Kovasil | Uetikon |
| Alltima | Alltech | Luna | Phenomenex |
| Aminex | Biorad | MCI | Mitsubishi |
| Apex | Jones | Microsorb | Rainin |
| Aquapore | Brownlee / PE | PartiSphere | Whatman |
| Aquasil | Keystone | Pecosphere | Brownlee / PE |
| Asahipak | Shodex | Pecosil | Brownlee / PE |
| Bakerbond | Baker | Phenogel | Phenomenex |
| BetaSil | Keystone | PhenoSphere | Phenomenex |
| Chiracel | Daicel / Chiral Technologies | Platinum | Alltech |
| Chiralpak | Daicel / Chiral Technologies | Plgel | PolymerLab |
| Chirobiotic V | Astec | PLRP-S | PolymerLab |
| Chromegabond | E.S. Industries | PolyEncap | Bischoff |
| Cosmosil | Nacalai Tesque | Prism | Keystone |
| Crownpak | Daicel / Chiral Technologies | Prodigy | Phenomenex |
| Cyclobond | Astec | Progel | Supelco |
| Deltabond | Keystone | ProntoSil | Bischoff |
| Deltapak | Waters | Protein-Pak | Waters |
| Develosil | Nomura Chemical | Resolve | Waters |
| Discovery | Supelco | Rexchrome | Regis |
| Dynamax | Rainin | Rezex | Phenomenex |
| Econosphere | Alltech | Coregel | Sarasep |
| Econosil | Alltech | Spheri | Brownlee / PE |
| Envirogel | Waters | Styragel | Waters |
| Genesis | Jones | Sumichiral | Sumika Chemical |
| HAIsil | Higgins Analytical | Supelcosil | Supelco |
| Hydropore | Rainin | Super ODS, Octyl | TosoHaas |
| Hypercarb | Thermo Quest | Suplex | Supelco |
| Hyperprep | Thermo Quest | TSK | TosoHaas |
| HyPurity Advance | Thermo Quest | Ultrasphere | Beckmann Coulter |
| HyPurity Elite | Thermo Quest | Ultremex | Phenomenex |
| Jordi | Jordi | Velosep | Brownlee / PE |
| Jupiter | Phenomenex | Versapak | Alltech |

GROM, a leader in filling and manufacturing HPLC columns, is a worldwide renowned expert, specialized in packing of **Microbore** and **Capillary Columns**.

HPLC- packing materials from other manufacturers

In addition to **GROM** stationary phases, the **GROM column packing service** and **GROM** refill service also pack analytical and preparative columns with materials from other internationally renowned

manufacturers. On the following pages, we list our contract partners and the materials which we pack in either **NovoGROM** hardware or columns of other producers.

μBondapak® - Waters (Milford, MA, USA)

A well proven phase from the pioneer of HPLC manufacturers.

| Packing material | Order no. | Particle size (µm) | Pore size (Å) |
|---------------------------|---------------|--------------------|---------------|
| μBondapak C18 | BS Od 1* | 10 | 120 |
| μBondapak Phenyl | BS PH 1* | 10 | 120 |
| μBondapak CN | BS CN 1* | 10 | 120 |
| μBondapak NH ₂ | BS NH 1* | 10 | 120 |
| μBondapak Porasil (Si) | BS NP 1* | 10 | 120 |

* Please add abbreviation (see pages 160 and 161) for particle size, pore diameter, column hardware type and column dimensions.

Packing Materials

μBondapak® - Waters (Milford, MA, USA)

| Packing material | Order no. | Particle size (µm) | Pore size (Å) |
|----------------------|----------------|--------------------|---------------|
| Nova-Pak C18 | BS OD 5* | 4 | 60 |
| Nova-Pak C8 | BS OC 5* | 4 | 60 |
| Nova-Pak CN | BS CN 5* | 4 | 60 |
| Nova-Pak Phenyl | BS PH 5* | 4 | 60 |
| Nova-Pak Si | BS NP 5* | 4 | 60 |
| Symmetry C18 | BS OD 3* | 3.5, 5 | 100 |
| Symmetry Shield RP18 | BS OD 4* | 3.5, 5 | 100 |
| Symmetry300C18 | BS OD 3* | 5 | 300 |
| Symmetry C8 | BS OC 2* | 3.5, 5 | 100 |
| Symmetry Shield RP8 | BS OC 3* | 3.5, 5 | 100 |
| Symmetry300C8 | BS OC 2* | 5 | 300 |
| Symmetry300C4 | BS BU 2* | 5 | 300 |

Capcell PAK® - Shiseido (Kyoto, J) Quality products from Far East

| Packing material | Order no. | Particle size (µm) | Pore size (Å) |
|--------------------------------|----------------|--------------------|---------------|
| CAPCELL PAK SG C18 | CS OD 1* | 3, 5 | 120, 300 |
| CAPCELL PAK SG C8 | CS OC 1* | 5 | 120, 300 |
| CAPCELL PAK SG Phenyl | CS PH 1* | 5 | 120, 300 |
| CAPCELL PAK SG C1 | CS TM 1* | 5 | 120, 300 |
| CAPCELL PAK SG CN | CS CN 1* | 5 | 120 |
| CAPCELL PAK SG NH ₂ | CS NH 1* | 5 | 80 |
| CAPCELL PAK AG C18 | CS OD 2* | 5 | 120 |
| CAPCELL PAK AG C8 | CS OC 2* | 5 | 120 |
| CAPCELL PAK UG C18 | CS OD 3* | 3, 5 | 120, 300 |
| CAPCELL PAK UG C8 | CS OC 3* | 5 | 120 |
| CAPCELL PAK UG Phenyl | CS PH 3* | 5 | 120 |
| CAPCELL PAK UG C1 | CS TM 3* | 5 | 120 |
| CAPCELL PAK UG CN | CS CN 3* | 5 | 120 |
| CAPCELL PAK UG NH ₂ | CS NH 3* | 5 | 120 |

Eurospher® - Knauer (Berlin, FRG) Quality phases "Made in Germany"

| Packing material | Order no. | Particle size (µm) | Pore size (Å) |
|---------------------------|----------------|--------------------|---------------|
| Eurospher C18 | ES OD 1* | 5, 7, 10 | 100 |
| Eurospher C8 | ES OC 1* | 5, 7, 10 | 100 |
| Eurospher C4 | ES BU 1* | 7 | 100 |
| Eurospher C1 | ES TM 1* | 7 | 100 |
| Eurospher CN | ES CN 1* | 7 | 100 |
| Eurospher NH ₂ | ES NH 1* | 7 | 100 |
| Eurospher Diol | ES OH 1* | 7 | 100 |
| Eurospher Si | ES NP 1* | 3, 5, 7, 10 | 100 |
| Eurospher Bioselect C18 | ES OD 2* | 7, 10 | 300 |
| Eurospher Bioselect C8 | ES OC 2* | 5, 7, 10 | 300 |

Hypersil® - Thermo Quest (Runcorn, UK) Stationary phases featuring high mechanical stability and reproducibility.

| Packing material | Order no. | Particle size (µm) | Pore size (Å) |
|-----------------------------------|----------------|--------------------|---------------|
| Hypersil ODS | HS OD 1* | 3, 5, 10 | 120 |
| Hypersil MOS | HS OC 1* | 3, 5, 10 | 120 |
| Hypersil SAS | HS SA 1* | 3, 5, 10 | 120 |
| Hypersil Phenyl | HS PH 1* | 3, 5, 10 | 120 |
| Hypersil CPS | HS CN 1* | 3, 5, 10 | 120 |
| Hypersil APS (NH ₂) | HS NH 1* | 3, 5, 10 | 120 |
| Hypersil APS 2 (NH ₂) | HS NH 2* | 3, 5, 10 | 120 |
| Hypersil Si | HS NP 1* | 3, 5, 10 | 120, 300 |
| Hypersil Octyl-WP | HS OC 1* | 5, 10 | 300 |

* Please add abbreviation (see pages 160 and 161) for particle size, pore diameter, column hardware type and column dimensions.

Packing Materials

Hypersil® - Thermo Quest (Runcorn, UK) Stationary phases featuring high mechanical stability and reproducibility.

| Packing material | Order no. | Particle size (µm) | Pore size (Å) |
|---------------------|----------------|--------------------|---------------|
| Hypersil Butyl-WP | HS BU 1* | 5, 10 | 300 |
| Hypersil BDS C18 | HS OD 2* | 3, 5 | 130 |
| Hypersil BDS C8 | HS OC 2* | 3, 5 | 130 |
| Hypersil BDS Phenyl | HS PH 2* | 3, 5 | 130 |
| Hypersil BDS CN | HS CN 2* | 3, 5 | 130 |

Inertsil® - GL-Science (Tokyo, J) Packing materials with high chemical stability

| Packing material | Order no. | Particle size (µm) | Pore size (Å) |
|-------------------|----------------|--------------------|---------------|
| Inertsil ODS 80 | IS OD 1* | 5 | 80 |
| Inertsil ODS | IS OD 1* | 5, 10 | 100 |
| Inertsil ODS-2 | IS OD 2* | 5 | 150 |
| Inertsil ODS-3 | IS OD 3* | 3, 5 | 100 |
| Inertsil C8 | IS OC 1* | 5 | 150 |
| Inertsil C8-3 | IS OC 3* | 3, 5 | 150 |
| Inertsil C4 | IS BU 1* | 5 | 150 |
| Inertsil Phenyl | IS PH 1* | 5 | 150 |
| Inertsil Phenyl-3 | IS PH 3* | 3, 5 | 150 |
| Inertsil CN-3 | IS CN 3* | 5 | 150 |

Kromasil™ - Eka Nobel (Göteborg, S)

Packing materials which guarantee high resolution, reproducibility and stability.

| Packing material | Order no. | Particle size (µm) | Pore size (Å) |
|--------------------------|----------------|--------------------|---------------|
| Kromasil C18 | KS OD 1* | 3,5, 5, 10 | 100 |
| Kromasil C8 | KS OC 1* | 3,5, 5, 10 | 100 |
| Kromasil C4 | KS BU 1* | 3,5, 5, 10 | 100 |
| Kromasil C1 | KS TM 1* | 3,5, 5, 10 | 100 |
| Kromasil NH ₂ | KS NH 1* | 3,5, 5, 10 | 100 |
| Kromasil Si | KS NP 1* | 3,5, 5, 10 | 100 |
| Kromasil CHI-I | KS CH 1* | 5 | 100 |
| Kromasil CHI-II | KS CH 2* | 5 | 100 |

LiChrosorb® - LiChrospher® - Superspher® - Purospher® - Merck (Darmstadt, FRG)

We pack these tried and tested phases from the worldwide renowned manufacturer of adsorbents not only in our **NovoGROM** hardware, but also in other brands of HPLC columns such as Manufit, LiChrocart-system, etc.

| Packing material | Order no. | Particle size (µm) | Pore size (Å) |
|----------------------------|----------------|--------------------|--------------------|
| LiChrosorb RP 18 | MS OD 1* | 5, 7, 10 | 100 |
| LiChrosorb RP 8 | MS OC 1* | 5, 7, 10 | 100 |
| LiChrosorb RP SelectB | MS OC 6* | 5, 10 | 60 |
| LiChrosorb RP 2 | MS DM1* | 7 | 60 |
| LiChrosorb Nitrile | MS CN 1* | 5, 7, 10 | 100 |
| LiChrosorb Amino | MS NH 1* | 5, 7, 10 | 100 |
| LiChrosorb Diol | MS OH 1* | 5, 7, 10 | 100 |
| LiChrosorb Si | MS NP 1* | 5, 7, 10 | 60, 100 |
| LiChrospher RP-18 | MS OD 2* | 5, 10 | 100, 300 |
| LiChrospher RP-18 endc. | MS OD 4* | 5, 10 | 100 |
| LiChrospher RP-8 | MS OC 2* | 5, 10 | 100 |
| LiChrospher RP-8 endc. | MS OC 4* | 5, 10 | 100 |
| LiChrospher 60 RP select B | MS OC 7* | 5, 10 | 60 |
| LiChrospher Nitrile | MS CN 2* | 5, 10 | 100 |
| LiChrospher Amino | MS NH 2* | 5, 10 | 100 |
| LiChrospher Diol | MS OH 2* | 5, 10 | 100, 300 |
| LiChrospher Si | MS NP 2* | 5, 10 | 60, 100, 300, 1000 |
| Superspher C18 | MS OD 3* | 4 | 100 |
| Superspher C18 endcapped | MS OD 5* | 4 | 100 |
| Superspher C8 | MS OC 3* | 4 | 60 |

* Please add abbreviation (see pages 160 and 161) for particle size, pore diameter, column hardware type and column dimensions.

Packing Materials

Merck (Darmstadt, FRG)

| Packing material | Order no. | Particle size (μm) | Pore size (\AA) |
|-------------------------|-----------------|---------------------------------|----------------------------|
| Superspher C8 endcapped | MS OC 5 * | 4 | 60 |
| Superspher Silica | MS NP 3 * | 4 | 60 |
| Purospher C18 | MS OD P * | 5 | 100 |
| Purospher C18 endcapped | MS OD E * | 5 | 100 |

Nucleosil® - Macherey & Nagel (Düren, FRG)

One of the widest ranges of HPLC-phases. Supported by extensive application information

| Packing material | Order no. | Particle size (μm) | Pore size (\AA) |
|--|-----------------|---------------------------------|-------------------------------|
| Nucleosil C18 | NS OD 1 * | 3, 5, 7, 10 | 50, 100, 120, 300, 500, 1 000 |
| Nucleosil C18 AB | NS OD 0 * | 5 | 100 |
| Nucleosil C18 HD | NS OD 3 * | 3, 5 | 100 |
| Nucleosil C8 | NS OC 1 * | 3, 5, 7, 10 | 100, 120, 300, 500 |
| Nucleosil C8 HD | NS OC 3 * | 5 | 100 |
| Nucleosil Protect-1 | NS OC 4 * | 5 | 100 |
| Nucleosil Phenyl | NS PH 1 * | 5, 7 | 100, 120, 300, 500, 1 000 |
| Nucleosil C4 | NS BU 1 * | 5 | 120, 300, 500, 1 000, 4 000 |
| Nucleosil C2 | NS DM 1 * | 7 | 100 |
| Nucleosil CN | NS CN 1 * | 5, 7, 10 | 100, 120, 300, 500 |
| Nucleosil N(CH ₃) ₂ | NS NH 3 * | 5, 10 | 100 |
| Nucleosil NO ₂ | NS NO 1 * | 5, 10 | 100 |
| Nucleosil NH ₂ | NS NH 1 * | 5, 7, 10 | 100, 120 |
| Nucleosil Diol | NS OH 1 * | 5, 7 | 100, 120, 300, 1 000, 4 000 |
| Nucleosil Silica | NS NP 1 * | 3, 5, 7, 10 | 50, 100, 120 |
| Nucleosil SA | NS SC 1 * | 5, 10 | 100 |
| Nucleosil SB | NS SA 1 * | 5, 10 | 100 |

Partisil® - Whatman (Clifton, NJ, USA)-

These phases are available for special applications.

| Packing material | Order no. | Particle size (μm) | Pore size (\AA) |
|------------------------|-----------------|---------------------------------|----------------------------|
| Partisil ODS 3 (10,5%) | PS OD 3 * | 5, 10 | 90 |
| Partisil ODS 2 (15%) | PS OD 2 * | 10 | 90 |
| Partisil ODS (5%) | PS OD 1 * | 10 | 90 |
| Partisil C8 | PS OC 1 * | 5, 10 | 90 |
| Partisil PAC | PS AC 1 * | 5, 10 | 90 |
| Partisil SAX | PS SA 1 * | 10 | 90 |
| Partisil SCX | PS SC 1 * | 10 | 90 |
| Partisil Silica | PS NP 1 * | 5, 10 | 90 |

PRP® - Hamilton (Reno, NV, USA)

Polymeric phases with excellent separation characteristics and stability; particularly suited for ion chromatography.

| Packing material | Order no. | Particle size (μm) | Pore size (\AA) |
|------------------|-----------------|---------------------------------|----------------------------|
| PRP-1 | RP OD 1 * | 5, 7, 10 | 75 |
| PRP-3 | RP OD 3 * | 10 | 300 |
| PRP- ∞ | RP OD1 * | | 4 |
| PRP-X100 | RP SA 1 * | 10 | |
| PRP-X200 | RP SC 2 * | 10 | |
| RCX-10 | RP RC X * | 7 | |

Spherisorb® - Waters - (Milford, MA, USA)-

Versatile phases with exceptionally high resolution.

| Packing material | Order no. | Particle size (μm) | Pore size (\AA) |
|-------------------|-----------------|---------------------------------|----------------------------|
| Spherisorb ODS 2 | SS OD 2 * | 3, 5, 10 | 80 |
| Spherisorb ODS 1 | SS OD 1 * | 3, 5, 10 | 80, 300 |
| Spherisorb C8 | SS OC 2 * | 3, 5, 10 | 80 |
| Spherisorb C6 | SS HE 1 * | 3, 5, 10 | 80, 300 |
| Spherisorb Phenyl | SS PH 1 * | 3, 5, 10 | 80 |

* Please add abbreviation (see pages 160 and 161) for particle size, pore diameter, column hardware type and column dimensions.

Packing Materials

Spherisorb® - Waters - (Milford, MA, USA)-

| Packing material | Order no. | Particle size (μm) | Pore size (\AA) |
|------------------------------|---------------|---------------------------------|----------------------------|
| Spherisorb C ₃ WP | SS PR 1 | 5, 10 | 300 |
| Spherisorb C1 | SS TM 1 | 3, 5, 10 | 80, 300 |
| Spherisorb CN | SS CN 1 | 3, 5, 10 | 80 |
| Spherisorb NH ₂ | SS NH 1 | 3, 5, 10 | 80 |
| Spherisorb SAX | SS SA 1 | 5, 10 | 80 |
| Spherisorb SCX | SS SC 1 | 5, 10 | 80 |
| Spherisorb Silica | SS NP 1 | 3, 5, 10 | 80, 300 |

Synchropak® - MICRA Scientific (Northbrook, IL, USA)

The outstanding HPLC phase from the USA

| Packing material | Order no. | Particle size (μm) | Pore size (\AA) |
|-----------------------|---------------|---------------------------------|----------------------------|
| Synchropak C18 | LS OD 1 | 5, 6, 7, 10 | 100, 300, 1 000, 4 000 |
| Synchropak C8 | LS OC 1 | 6, 7 | 300, 1 000 |
| Synchropak C4 | LS BU 1 | 6, 7, 10 | 300, 1 000, 4 000 |
| Synchropak HIC-Propyl | LS HI 3 | 6 | 300 |
| Synchropak Q | LS SA 1 | 6 | 300 |
| Synchropak CM | LS WC 1 | 5, 6 | 100, 300 |
| Synchropak S | LS SC 1 | 6, 7 | 300, 1 000 |
| Synchropak AX | LS WA 1 | 5, 6, 7 | 100, 300, 1 000 |

Vydac® - Vydac (Hesperia, CA, USA)

Besides the standard materials, the "wide-pore" phases show excellent properties for the separation of biopolymers.

| Packing material | Order no. | Particle size (μm) | Pore size (\AA) |
|------------------|---------------|---------------------------------|----------------------------|
| Vydac C18 | VS OD 1 | 5, 10 | 90, 300 |
| Vydac C8 | VS OC 1 | 5, 10 | 300 |
| Vydac C4 | VS BU 1 | 5, 10 | 300 |
| Vydac Diphenyl | VS PH 2 | 5, 10 | 300 |
| Vydac Si | VS NP 1 | 5, 10 | 90, 300 |

Zorbax® - Agilent Technologies (DuPont, resp. Rockland Techn. Inc. / Rockland, DE, USA)

These phases have been renowned for high quality since the introduction of HPLC.

| Packing material | Order no. | Particle size (μm) | Pore size (\AA) |
|------------------------|---------------|---------------------------------|----------------------------|
| Zorbax ODS | ZS OD 1 | 5 | 80 |
| Zorbax C8 | ZS OC 1 | 5 | 80 |
| Zorbax Phenyl | ZS PH 1 | 5 | 80 |
| Zorbax TMS | ZS TM 1 | 5 | 80 |
| Zorbax Si | ZS NP 1 | 5 | 80 |
| Zorbax SCX | ZS SC 1 | 7 | 300 |
| Zorbax NH ₂ | ZS NH 1 | 5 | 80 |
| Zorbax CN | ZS CN 1 | 5 | 80 |
| Zorbax SAX | ZS SA 1 | 5 | 80 |

* Please add abbreviation (see pages 160 and 161) for particle size, pore diameter, column hardware type and column dimensions.

In addition, GROM also distributes the following prepacked Columns:

Zorbax (Agilent Technologies): Rx, SB, EclipseXDB, Bonus RP, Extend, Bio Series, Ultron ES-OVM

Vydac 201TP, 208TP, 214TP, 218TP, 228TP, 201/208HS, 259VHP, 238TP, -401TP

Chrom Tech AB AGP, CBH, HSA

TosoHaas All TosoHaas products are available from **GROM**. We will be pleased to send you a catalogue upon request.

YMC These phases are available in **NovoGROM** hardware. Please inquire for the catalogue.

Chiral-AGP, Chiral-CBH and Chiral HSA

Prepacked chiral columns from
CHROM TECH AB (Norsborg, Sweden)

| Order number | Chiral packing material | Dimension |
|--------------|-------------------------|---------------|
| AGP 150.18 | Chiral-AGP | 150 x 0.18 mm |
| AGP 100.2 | Chiral-AGP | 100 x 2 mm |
| AGP 150.2 | Chiral-AGP | 150 x 2 mm |
| AGP 50.4 | Chiral-AGP | 50 x 4 mm |
| AGP 100.4 | Chiral-AGP | 100 x 4 mm |
| AGP 150.4 | Chiral-AGP | 150 x 4 mm |
| AGP 100.10 | Chiral-AGP | 100 x 10 mm |
| AGP 150.10 | Chiral-AGP | 150 x 10 mm |
| AGP 10.3 | Chiral-AGP-guard column | 10 x 3 mm |
| AGP 10.2 | Chiral-AGP-guard column | 10 x 2 mm |
| CH 10.3 | guard column holder | |
| CBH 100.2 | Chiral-CBH | 100 x 2 mm |
| CBH 150.2 | Chiral-CBH | 150 x 2 mm |
| CBH 50.4 | Chiral-CBH | 50 x 4 mm |
| CBH 100.4 | Chiral-CBH | 100 x 4 mm |
| CBH 150.4 | Chiral-CBH | 150 x 4 mm |
| CBH 100.10 | Chiral-CBH | 100 x 10 mm |
| CBH 150.10 | Chiral-CBH | 150 x 10 mm |
| CBH 10.3 | Chiral-CBH-guard column | 10 x 3 mm |
| CBH 10.2 | Chiral-CBH-guard column | 10 x 2 mm |
| HSA 100.2 | Chiral HSA | 100 x 2 mm |
| HSA 150.2 | Chiral HSA | 150 x 2 mm |
| HSA 100.4 | Chiral HSA | 100 x 4 mm |
| HSA 150.4 | Chiral HSA | 150 x 4 mm |
| HSA 100.10 | Chiral HSA | 100 x 10 mm |
| HSA 150.10 | Chiral HSA | 150 x 10 mm |

A WAY TO
CHIRAL SEPARATIONS