

CHROMATOGRAPHY SILICIA GEL

ZEOprep® · ZEObeads® · ZEOSphere®



Consistent - Reproducible - Effective

OCN CHEMICALS is the preferred supplier of **ZEOCHEM** high performance chromatography gels in Ireland.

Founded in Switzerland over 50 years ago, ZEOCHEM is one of the largest global manufacturers of Chromatographic Silica with a strong reputation of environmental sustainability, customer service and quality products. Due to their consistently high-quality products and excellent batch to batch reproducibility, ZEOCHEM chromatography gel has been used for decades in a wide range of industries, including pharmaceuticals, nutraceuticals, natural products, biopharmaceuticals, cosmetics, fine chemicals, food and beverages.

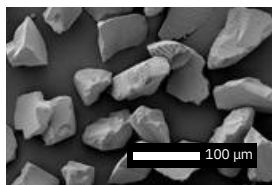
ZEOCHEM manufacture hundreds of tonnes of silica a year. All production facilities are ISO 9001:2015 and ISO 14001 certified and include a fully equipped QC laboratory. Continuous improvement programs ensure conformance to best practices and a focus on batch to batch reproducibility.

ZEOCHEM's new state of the art production and R&D facility, opened in 2018, has hundreds of tons of capacity, multiple production lines, and expansion possibilities to deliver continuity of supply from a European supplier. Their highly qualified R&D team is on hand to support customer technical needs including custom solutions for difficult separations or purifications, and process optimisations.

R&D to Pilot to Process Scale

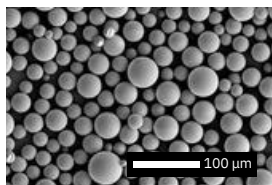


ZEOCHEM silica is produced by a large batch scale polycondensation process under very tight controls. The resulting high purity silica gels have narrow particle size distribution profiles, high mechanical stability surface area which ensures consistently high quality chromatographic purifications and separations. All ZEOCHEM silica gels come in a wide variety of morphologies and with many surface modification options. ZEOCHEM also offers customised material on request.



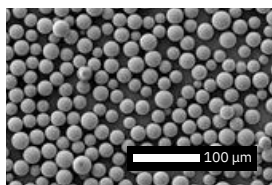
ZEOprep™

Granular silica for prep, flash and process separations. ZEOprep silica is available with a wide variety of pore and particles sizes, plus the option of four different moisture contents to meet any process requirement.



ZEObeads™

ZEObeads **spheroidal silica** for superior separation performance generally used in medium to high chromatographic pressure systems.



ZEOsphere™

ZEOsphere functionalised **spherical silica** for high pressure, high resolution preparative to process scale purifications.



Applications


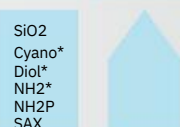
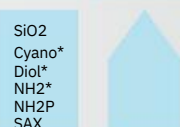
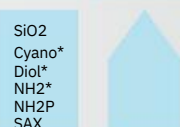

Excellent reproducibility makes ZEOCHEM silica gels one of the most reliable Chromatographic material for R&D, Pilot and Process Scale purifications for a variety of application areas. For example, for decades, ZEOprep silica gels have been used at industrial scale in various industries, such as the purification of polyunsaturated fatty acids, which are widely used throughout the Nutraceutical and Pharmaceutical Industries. ZEOCHEM silica gels also exhibit extraordinary performance in purification of naturally occurring APIs such as Paxlitaxel & Docetaxel and many more. In addition, the ZEOCHEM R&D team is always happy to work with customers on custom materials for specific applications. Standard applications include:

- API purification
- Biopharmaceutical
- Cosmetics
- Health Science diagnostics
- Analytical laboratories
- Natural products
- Environmental
- Food & Beverage
- Fine chemicals
- Diagnostic kits

Advantages

- Batch to batch reproducibility
- Wide range of selectivity options
- High purity
- Range of moisture contents
- Chemical and mechanical stability
- High loadability
- Large scale batches (kg to multi-ton)
- Narrow particle size distribution

Chromatographic Silica Selection Guide

Typical Applications	Silica morphology	Pore size A	MW (D)	Particle size (µm)	Separation efficiency	Surface modification/functionality								
API Intermediates Small Molecules Natural Products Food Flavors Fragrances Lipids/oils/fats Carbohydrates Pigments Cosmetics Biomolecules Peptides Insulin Analogues Oligonucleotides Proteins Heavy metal scavengers	Irregular (ZEOprep)*	60	<500	25 – 40 35 – 70 40 – 63 60 – 200 75 – 315 200 – 500		<table border="1"> <tr> <th>Acqueous</th> <th>Non Acqueous</th> <th>Retention of Polar Analytes</th> </tr> <tr> <td>C4 Phenyl C8 C18</td> <td>SiO2 Cyano* Diol* NH2* NH2P SAX</td> <td rowspan="2">  </td> </tr> <tr> <td colspan="2"> Thiol (SH) & NH2 phases available for scavenging electrophiles and toxic heavy metals </td> </tr> </table>	Acqueous	Non Acqueous	Retention of Polar Analytes	C4 Phenyl C8 C18	SiO2 Cyano* Diol* NH2* NH2P SAX		Thiol (SH) & NH2 phases available for scavenging electrophiles and toxic heavy metals	
		Acqueous	Non Acqueous	Retention of Polar Analytes										
	C4 Phenyl C8 C18	SiO2 Cyano* Diol* NH2* NH2P SAX												
Thiol (SH) & NH2 phases available for scavenging electrophiles and toxic heavy metals														
90	10,000	200 – 500												
	Spheroidal (ZEObeads)	50, 100	300 – 800	20 – 30										
	Spherical (ZEOsphere)	100	7,000	10										
		120		15										
		300	< 30,000	15+										

* Can be used in both NP & RP systems

Please note; the optimal chromatographic material is specific to each analyte and chromatographic system. The above information is based on general chromatographic principles and is intended to be used as a guide only. Some limitations apply to the above listed grades/functional groups.

Amorphous porous Silica Gel (irregular shape)

ZEOprep® is the brand name of a series of irregularly shaped porous silicas, specifically manufactured for use in liquid chromatography. It is one of the most widely used chromatography sorbents worldwide. ZEOprep silica is produced at Zeochem's ISO 9001:2015 certified facility. Strict QC controls from raw material to finished product ensure high lot-to-lot reproducibility and tightly controlled specifications.

ZEOprep® is used as industrial column packing material for general purification of natural products, foods, cosmetics, as well as in pre-purification of pharmaceutical and nutraceutical ingredients. Bonded phases are preferably used in liquid chromatography, flash chromatography, and solid phase extraction.

ZEOprep® silica gels are produced by a large scale polycondensation process providing reproducible chromatographic separations of high quality. The efficiency of liquid chromatography relies on narrow particle size distributions, very high mechanical stability, and a high specific surface area to deliver consistent and reliable results. Zeochem are constantly working on improving this process with one main goal: absolute uniformity between batches.

General Product Overview

■ Standard Products ■ Products are available upon request

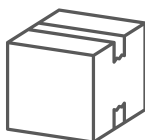
PORE SIZE	PARTICLE SIZE	ZEOprep® bonded							ZEOprep® unbonded				
		DERIVATIZATION							MOISTURE CONTENT				
		C18	C8	NH2	NH2P	DIOL	SH	CN	SAX	<1%	2-4%	4-6%	7%
ZEOprep® 60 Å	35 – 70 µm	■	■	■	■	■	■	■	■	■	■	■	■
	40 – 63 µm	■	■	■	■	■	■	■	■	■	■	■	■
	60 – 200 µm	■	■	■	■	■	■	■	■	■	■	■	■
	200 – 500 µm	■	■	■	■	■	■	■	■	■	■	■	■
ZEOprep® 90 Å	35 – 70 µm	■	■	■	■	■	■	■	■	■	■	■	■
	40 – 63 µm	■	■	■	■	■	■	■	■	■	■	■	■
	60 – 200 µm	■	■	■	■	■	■	■	■	■	■	■	■
	75 – 315 µm	■	■	■	■	■	■	■	■	■	■	■	■
	200 – 500 µm	■	■	■	■	■	■	■	■	■	■	■	■

For ZEOprep® with other pore sizes (i.e. 40Å, 110Å), particle sizes or derivatization, please contact Ocon Chemicals.

Standard Range ZEOprep® (unbonded)

CARTON BOX PACKAGE

25 kg units
12 units (=300 kg)
on a pallet



PLASTIC DRUM PACKAGE

25 kg units
12 units (=300 kg)
on a pallet



PE BOTTLE PACKAGE

1 kg units



ZEOprep® unbonded

PRODUCT

ZEOprep® 60 ACT
ZEOprep® 60
ZEOprep® 60 HYD
ZEOprep® 60
ZEOprep® 60 HYD
ZEOprep® 60 ECO
ZEOprep® 60
ZEOprep® 60 HYD
ZEOprep® 60 ECO
ZEOprep® 60
ZEOprep® 90
ZEOprep® 90

35 – 70 µm
35 – 70 µm
35 – 70 µm
40 – 63 µm
40 – 63 µm
40 – 63 µm
60 – 200 µm
60 – 200 µm
60 – 200 µm
60 – 200 µm
200 – 500 µm
60 – 200 µm
200 – 500 µm

ZEOprep® unbonded

PRODUCT

ZEOprep® 60
ZEOprep® 60
ZEOprep® 60 HYD
ZEOprep® 60 ECO
ZEOprep® 60 ACT
ZEOprep® 60
ZEOprep® 60 HYD
ZEOprep® 60 ECO
ZEOprep® 60
ZEOprep® 60 ACT
ZEOprep® 90
ZEOprep® 90

35 – 70 µm
40 – 63 µm
40 – 63 µm
40 – 63 µm
60 – 200 µm
60 – 200 µm
60 – 200 µm
60 – 200 µm
80 – 200 µm
200 – 500 µm
35 – 70 µm
75 – 315 µm

ZEOprep® samples unbonded

PRODUCT

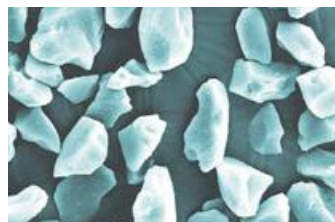
ZEOprep® 60
ZEOprep® 60
ZEOprep® 60 HYD
ZEOprep® 60 ECO
ZEOprep® 60
ZEOprep® 60 HYD
ZEOprep® 60 ECO
ZEOprep® 60
ZEOprep® 60
ZEOprep® 60
ZEOprep® 90

35 – 70 µm
40 – 63 µm
40 – 63 µm
40 – 63 µm
60 – 200 µm
60 – 200 µm
60 – 200 µm
80 – 200 µm
200 – 500 µm
200 – 500 µm

ZEOprep is available in 4 moisture level options to meet individual process and budget needs: 4 moisture level options to meet individual process and budget needs:

- **ZEOprep ACT:** <1% moisture content recommended for moisture sensitive applications.
- **ZEOprep (STD):** 2-4% moisture content.
- **ZEOprep HYD:** 4-6% moisture content can be used for a wide variety of applications, depending on process stability.
- **ZEOprep ECO:** $\leq 7\%$ moisture content for more robust processes where cost is a critical factor.

ZEOCHEM®



OCON
chemicals Ltd

Samples available for evaluation

Standard Range ZEOprep® (bonded)

PE BOTTLE PACKAGE

1 Kg units



ZEOprep® bonded

PRODUCT

ZEOprep® 60 C18
ZEOprep® 60 C8
ZEOprep® 60 NH2
ZEOprep® 60 NH2P
ZEOprep® 60 DIOL
ZEOprep® 60 SH
ZEOprep® 60 CN
ZEOprep® 60 SAX
ZEOprep® 90 C18
ZEOprep® 90 C8
ZEOprep® 90 CN
ZEOprep® 90 C18

40 – 63 µm
40 – 63 µm
40 – 63 µm
40 – 63 µm
40 – 63 µm
40 – 63 µm
40 – 63 µm
40 – 63 µm
40 – 63 µm
40 – 63 µm
40 – 63 µm
60 – 200 µm

PLASTIC DRUM PACKAGE

25 kg units
12 units (=300 kg)
on a pallet



ZEOprep® bonded

PRODUCT

ZEOprep® 60 C18
ZEOprep® 60 NH2
ZEOprep® 60 NH2P
ZEOprep® 60 SH
ZEOprep® 90 C18

40 – 63 µm
40 – 63 µm
40 – 63 µm
40 – 63 µm
40 – 63 µm

PE BOTTLE PACKAGE

100g units



ZEOprep® samples bonded

PRODUCT

ZEOprep® 60 C18
ZEOprep® 60 C8
ZEOprep® 60 NH2
ZEOprep® 60 NH2P
ZEOprep® 60 DIOL
ZEOprep® 60 SH
ZEOprep® 60 CN
ZEOprep® 60 SAX
ZEOprep® 90 C18
ZEOprep® 90 C8
ZEOprep® 90 NH2
ZEOprep® 90 C18

40 – 63 µm
40 – 63 µm
40 – 63 µm
40 – 63 µm
40 – 63 µm
40 – 63 µm
40 – 63 µm
40 – 63 µm
40 – 63 µm
40 – 63 µm
40 – 63 µm
60 – 200 µm

ZEOCHEM®



OCON
chemicals ltd

Samples available for evaluation

Amorphous porous Silica Gel (micro beads)

ZEObeads® are amorphous porous Silica Gel as micro beads, used as industrial column packing material for general purification of natural products, food, cosmetics as well as in pre-purification of pharmaceutical and nutraceutical ingredients. ZEObeads® are pheroidal silica for superior separation performance generally used in medium to high chromatographic pressure systems. ZEObeads® are preferably used in liquid chromatography, flash chromatography and solid phase extraction.

Bonded ZEObeads® Silica is produced under strict QC controls from raw material to finished product ensure high lot-to-lot reproducibility and tightly controlled specifications.

ZEObeads® Silica's are available in different quantities with a wide variety of packing sizes to meet individual applications and economic requirements.

	Pore Size	Particle Size	Product	Article No.
ZEObeads	50 Å	20 - 30 µm	ZEObeads 50 C18	3202688. 617. 810
		20 - 30 µm	ZEObeads 50 C8	3202687. 617. 810
		20 - 30 µm	ZEObeads 50 NH2	3202690. 617. 810

Additional products and/or derivatizations are available on request. Please contact Ocon Chemicals.

ZEOCHEM®



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Spherical Shaped Silica Gel (for high end purification)

ZEOsphere® functionalised spherical silica is suitable for high pressure, high resolution preparative to process scale purifications. The ZEOsphere® range of silica gel products have been designed specifically for Prep and Process Chromatography. Products available in the range include plain and bonded silica materials in an industry standard 10 micro material for Prep Chromatography and a 40 micron material for Flash and SPE Chromatography applications. Available pore sizes ranges from 70Å to 300Å. The ZEOsphere® material features a spherical robust particle geometry which is engineered with highly reproducible particle and pore size distributions, surface area and low metal ion concentration. The material is also pH neutral with controlled water content.

Chromatographic separations / purification of:

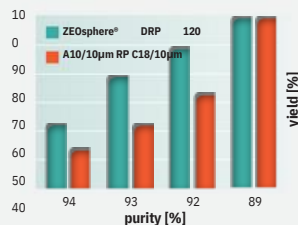
- Analytic up to process scale.
- Biopharmaceuticals.
- APIs and Intermediaries.

Specialised in the purification of:

- Peptides
- Insulins (Analogues)
- Oligonucleotides.
- Proteins

ZEOsphere DRP Mixed-Mode products are today's answer to improved purification of large charged molecules, peptides and oligonucleotides.

DRP enhanced selectivity delivers high purity at reduced run times, consequently increasing yield and lowering solvent usage/costs.



ZEOsphere® DRP

Mixed Mode Stationary Phase. One Phase. Multiple Interactions.

Purification of charged API currently is processed via reversed phase and/or ion-exchange chromatography. The unique method of ZEOsphere® DRP (Doped Reversed Phase) is based on attraction-repulsion by merging a high performance reversed-phase with ion-exchange (anion or cation) material.

Peptides

Although reversed phase has proven to be an acceptable technique, its selectivity shortcomings and enormous costs have urged the need for more efficient separation techniques. ZEOsphere® DRPs orthogonality leads to enhanced separation, sharper peaks, faster retention, better selectivity, significant yield improvement, and lower organic solvent consumption.

Insulins

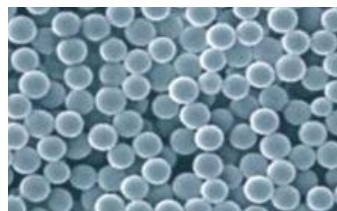
In crude insulins, structural differences are minimal. Current separation techniques such as ion-exchange and reversed phase lead to low production efficiency due to inadequate selectivity. Dual interaction ZEOsphere® DRP leads to substantially increased selectivity, higher yield and load ability, along with enhanced productivity.

Oligonucleotides

Synthetic oligonucleotides are increasingly important in advanced therapeutic concepts. Reversed phase chromatography shows insufficient and strongly retained separation, which leads to low yields and a subsequent increase in costs. ZEOsphere® DRP produces improved selectivity, substantially higher yields, and unequalled efficiency.



ZEOCHEM®



**We are happy to meet your project requirements.
Please contact Ocon Chemicals to discuss your needs.**

OCON
chemicals ltd

ZEOSphere® Silica Gels are available in a variety of quantities and pack sizes to meet individual application and budget requirements.

Product Description	Pore Size	Particle Size	Derivatisation	Pack Size	Article No.
ZEOSphere 100Å C18 / 10µm	100Å	10µm	C18	100g	300242
	100Å	10µm	C18	500g	302054
	100Å	10µm	C18	1kg	300933
ZEOSphere 120Å C18 / 10µm	120Å	10µm	C18	100g	300270
	120Å	10µm	C18	500g	302055
	120Å	10µm	C18	1kg	300266
ZEOSphere C8 100Å/10µm	100Å	10µm	C8	100g	300292
	100Å	10µm	C8	500g	302056
	100Å	10µm	C8	1kg	301153
ZEOSphere 120A C8 / 10µm	120Å	10µm	C8	100g	300293
	120Å	10µm	C8	500g	302059
	120Å	10µm	C8	1kg	300277
ZEOSphere 100Å Diol / 10µm	100Å	10µm	Diol	100g	302061
	100Å	10µm	Diol	500g	302062
	100Å	10µm	Diol	1kg	302063
ZEOSphere 120Å Diol / 10µm	120Å	10µm	Diol	100g	302109
	120Å	10µm	Diol	500g	302110
	120Å	10µm	Diol	1kg	302060
ZEOSphere 100Å NH2 / 10µm	100Å	10µm	NH2	100g	302064
	100Å	10µm	NH2	500g	302065
	100Å	10µm	NH2	1kg	302066
ZEOSphere 120Å NH2 / 10µm	120Å	10µm	NH2	100g	302111
	120Å	10µm	NH2	500g	302112
	120Å	10µm	NH2	1kg	302113
ZEOSphere 300Å C4 / 10µm	300Å	10µm	C4	100g	300866
	300Å	10µm	C4	500g	302068
	300Å	10µm	C4	1kg	301284



Ocon Chemicals is a leading supplier of laboratory chemicals, glassware, consumables and equipment, as well as bulk ingredients for a wide range of manufacturing and laboratory environments in Ireland and UK. Our customer base includes Pharma, Medical Device, Bio-processing, Food and Beverage, Healthcare, Education, and Independent Laboratories.

We leverage our long-standing, global supplier network and our collective expertise to deliver quality products backed by an innovative suite of service options, including:

- Pre and post sales technical support.
- Expert product sourcing.
- Fast, secure delivery.
- Cool, cold and warm storage and transportation.
- Vendor managed inventory.
- Laboratory waste collection and chemical waste disposal.
- Bulk pharmaceutical ingredient sourcing, storage and delivery.

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