Chromatography Adsorbents

Aluminas
Silicas
Aluminum Oxides
Reversed Phase Silica
Silica Plates for TLC
ICN Chromatokits
Ion Exchange Resins

Introduction

ICN Biomedicals GmbH was established in 1984 as the German subsidiary of ICN Biomedicals, Inc. Shortly thereafter, ICN acquired the adsorbent division of the Woelm Pharma GmbH, Eschwege. The adsorbents are based on the adsorbent program of the Woelm company. Today, those high quality products are available as "ICN Adsorbents."

To meet the considerable demand for adsorbents in the pharmaceutical, cosmetic and chemical industries, ICN's extensive, modern plant in Eschwege is furnished with "state-of-the-art" equipment for all phases of development and production.

The ICN-Woelm Company relationship yields many years of experience for the development and marketing of high quality products whose origin began with Woelm Laboratories. The broad selection of adsorbents includes Silica Gels with bonded organic ligands (Reverse Phase Silica), Alumina for HPLC, MPLC and isotopic applications, and Silica Active for various protocols.

The information presented in this section of the catalog serves as a guideline for the selection and application of ICN Adsorbents. Additionally, ICN welcomes inquiries regarding the use of any product or custom preparation. ALL written or oral responses on the use and performance of said products are advisory in nature. They are given to the best of ICN's knowledge and should be pretested by the user. ICN shall in no event be liable for consequential damages. The user is solely responsible for observing pertinent laws and regulations, especially regarding existing patents and related issues.

ICN Alumina Activity I and Activity Super I for Column Chromatography

Alumina Oxides are stationary phase materials which have been employed from the beginning of column chromatography. The introduction of standardization of sorbent properties meant that reproducible results could be achieved with chromatography using these materials. Woelm was one of the first companies to produce standardized Alumina. Our Alumina products, which are outstanding because of their defined initial activities and sorption properties, are produced in accordance with the strictest production procedures.

ICN Alumina Activity Super I are products unique to ICN. Their capacity is approximately double that of ICN Alumina Activity I in a non-polar environment. Their initial activity is controlled within an extremely narrow range. A special feature is the absolutely constant deactivation behavior which is valid of the deactivation process and for contact with all other chromatography solvents. These facts contribute to extreme reproducibility of chromatographic results. The reliability of ICN Alumina Activity Super I is unparalleled. They constitute the basic material for ICN's fine product line of Aluminas of different surface modifications and sieve cuts. Therefore, it is easy to switch among the various modes of chromatography.

ICN Alumina Activity I Applicational Characteristics

(approximate values)

Water Soluble Matter:	0.1%
Weight (g/ml):	0.8
Particle Size (μm):	50-200
Specific Surface (m^2/g):	150
Color:	white to light pink
Loss on Ignition (1000°C/12h):	1.7%

ICN Alumina Activity Super I Applicational Characteristics

(approximate values)

Water Soluble Matter:	0.1%
Weight (g/ml):	0.8
Particle Size (μm):	50-200
Specific Surface (m^2/g):	200
Color:	white to light pink
Loss on Ignition (1000°C/12h):	1.0-1.3%

Adjustment of Activity

Alumina Activity can be adjusted by the addition of polar media, especially water. Thus, everyone can adjust the sorption system to his/her own specific needs by combining a sorbent of a defined activity with an appropriate eluent.

Directions: Weigh the desired amount of Alumina in a stoppered vial. Add the appropriate amount of water. Shake the mixture well and cool to ambient temperature for maintaining equilibrium conditions. The corresponding quantities for the adjustment of the activity can be taken from the following tables.

Deactivation Behavior of ICN Alumina Activity I

Activity	I	II	III	IV	V
Alumina A	0	3	6	10	add 15% water
Alumina B	0	3	6	10	add 15% water
Alumina N	0	3	6	10	add 15% water

Deactivation Behavior of ICN Alumina Activity Super I

Activity	Super I	I	II	III	IV	V
Alumina A	0	1	4	7	10	add 19% water
Alumina B	0	1	4	7	10	add 19% water
Alumina N	0	1	4	7	10	add 19% water

According to Brockman the activity of adsorbents can be determined via the elution of dyestuff mixtures.

Cat. No.	Product	Qty.
02099	ICN Alumina A	500 g
02102	Activity I	1 kg
02105	pH 4.5 (acid)	5 kg
02159		50 kg
02069	ICN Alumina B	500 g
02072	Activity I	1 kg
02075	pH 10 (basic)	5 kg
02078		50 kg
02084	ICN Alumina N	500 g
02087	Activity I	1 kg
02090	pH 7.5 (neutral)	5 kg
02135		50 kg
04592	ICN Alumina A	500 g
04595	Activity Super I	1 kg
04598	pH 4.5 (acid)	5 kg
04601		50 kg
04568	ICN Alumina B	500 g
04571	Activity Super I	1 kg
04574	pH 10 (basic)	5 kg
04577		50 kg
04580	ICN Alumina N	500 g
04583	Activity Super I	1 kg
04586	pH 7.5 (neutral)	5 kg
04589		50 kg
09670	Test Dye Kit for the determination of activity	1 kit

ICN Alumina Activity II-III for Column Chromatography (according to Brockman)

ICN Alumina Activity II-III for Column Chromatography according to Brockman constitutes an economical adsorbent of medium activity. It is especially useful where activated carbon, due to its organic nature, cannot be used or in cases where the cation exchange properties of basic Alumina are very favorable.

Applicational Characteristics

(approximate values)

Activity:	II-III
pH Value:	10.0
Weight (g/ml):	0.8
Particle Size:	50-200 µm
Color:	white to light pink

Cat. No.	Product	Qty.
04692	ICN Alumina	500 g
04691	Activity II-III	5 kg
04694		50 kg

ICN Alumina R for the Technique of Isotopes

ICN Alumina R is an acid Alumina specially prepared for isotope chemistry. Alumina R is used to produce technetium generators, so-called "technetium cows." These are small columns filled with Alumina R, on which the mother nuclide ^{99}Mo (t = 66h) is retained as the Molybdate, MoO_4, while the daughter nuclide ^{99m}Tc (t = 6h) may be easily removed (milked) as the pertechnetate, TcO_4, by elution with physiological salt solution.

ICN Alumina R may also be used whenever an Alumina with an extremely low pH value and/or high ion-exchange capacity is required, for example the determination of catecholamines according to Anton and Sayre.

Applicational Characteristics

(approximate values)

pH Value:	4.3
Weight (g/ml):	0.8
Loss on Ignition % (1000°C/12h):	< 5
Particle Size:	50-200 µm
Color:	white to light pink

Cat. No.	Product	Qty.
06034	ICN Alumina R	500 g
06031		50 kg

ICN Alumina B - Super I for Dioxin Analysis

Separating pollutants from the matrix is the most important step in pollution analysis. In fact, no method exists for measuring the extraction efficiency. Even if added standards or markers are recovered at a 100% level, no statement can be made about the extraction efficiency of the pollutants from the matrix. Because of this uncertainty, the subsequent "clean-up" steps must be as reliable as possible. Otherwise, any unknown error of the extraction will be multiplied, negating the analysis.

Usually, matrix extracts are processed by chromatography. Therefore, the adsorbent quality is essential. The highly standardized ICN Alumina Activity Super I is best suited for the processing of these pollutant extracts. It meets the high recovery level required for the analysis of polychlorinated dibenzodioxins and dibenzofurans, according to VDI-Regulation 3499, part 1. Thus, it serves as a powerful tool for improved environmental analysis.

Additionally, this Alumina can be used for all chromatographic processes requiring the highest activity and reproducibility levels.

Ref.: Hagemaier, H., et al., Fresenius Z. Anal. Chem., **323**, 24-28 (1986).

Applicational Characteristics

(approximate values)

pH Value:	10
Weight (g/ml):	0.8
Loss on Ignition % (1000°C/12h):	0.7
Particle Size:	50-200 µm
Color:	white to light pink
Water Soluble Matter %:	0.1

Cat. No.	Product	Qty.
04569	ICN Alumina B - Super I for Dioxin Analysis	500 g

ICN Aluminum Oxides for Industrial Applications-Technical Grade

Every year, the pharmaceutical industry demands greater purity. This paves the way for large-scale chromatography. ICN produces Aluminum Oxides suitable for this purpose. (Formerly known as Woelm Ideal products.)

Cat. No.	Product	Qty.
02025 02027	ICN Aluminum Oxide Basic Technical A	50 kg 100 kg
06025	ICN Aluminum Oxide Basic Technical A -H 32001-	50 kg
06023	ICN Aluminum Oxide Basic -H 15095-	100 kg
04655 04654	ICN Aluminum Oxide Neutral -H 15152-	50 kg 100 kg
07895 07896	ICN Aluminum Oxide Acid Technical A	50 kg 100 kg
02018	ICN Aluminum Oxide Technical -H 31101-	100 kg
06017 06019	ICN Aluminum Oxide Technical -H 16876-	50 kg 100 kg
02029	ICN Aluminum Oxide 1-3 mm	50 kg

ICN Alumina for Medium Pressure Liquid Chromatography (MPLC)

ICN Alumina for MPLC are produced from raw materials identical to those used for ICN Alumina Activity Super I. Thus, owing to their adsorption properties and particle size, they link HPLC and Classic Column Chromatography. These ICN Alumina are available in two particle sizes: 18-32 or 32-63 µm.

Applicational Characteristics

(approximate values)

Weight (g/ml):	0.8
Particle Size:	18-32 or 32-63 µm
Specific Surface (m^2/g):	200*
Color:	white to light pink
Loss on Ignition (1000°C/12h):	Active1.7% (Non-active -)
Loss on Drying (180°C/2h):	Non-Active 3.5% (Active -)

*when properly activated

Cat. No.	Product	Qty.
02056 02057 02055	ICN Alumina N 18-32 pH 7.5	10 g 100 g 1 kg
02061 02026	ICN Alumina N 32-63 pH 7.5	500 g 50 kg
02063	ICN Alumina A 18-32, active, pH 4.5	100 g
02065	ICN Alumina B 18-32, active, pH 10.0	100 g
02058 02059	ICN Alumina N 18-32, active, pH 7.5	10 g 100 g
02040 02041	ICN Alumina B 32-63, active, pH 10.0	500 g 50 kg
02062 02020	ICN Alumina N 32-63, active, pH 7.5	500 g 50 kg

ICN Alumina for High Performance Liquid Chromatography (HPLC)

ICN Alumina products HPLC products are produced from the same raw materials as those used for ICN Alumina Super I and exhibit identical separation behavior. Having extremely narrow particle-size ranges and considerably smaller particle diameter, they guarantee excellent performance and optimum elution flow conditions. It is available in three particle sizes: 3-6, 7-12, and 10-18 μm.

Applicational Characteristics

(approximate values)

pH Value:	7.5
Weight (g/ml):	0.8
Specific Surface (m^2/g):	200*
Loss on Drying % (180°C/2h):	3.5
Color:	white to light pink
Particle Size:	3-6, 7-12, or 10-18 μm

*when properly activated

Cat. No.	Product	Qty.
02142	ICN Alumina N 3-6	10 g
02143		100 g
02148	ICN Alumina N 7-12	10 g
02149		100 g
02151	ICN Alumina N 10-18	10 g
02152		100 g

ICN Silica and Silica Active for Column Chromatography

ICN offers a large variety of exactly defined particle cuts of silica with pore diameters of 60Å and 100Å. The irregular shape of the particles allows for sieve cuts of any kind. All of these cuts derive from identical raw materials, and it is simple to switch from one cut to another. Hence, it is simple to adapt various chromatographic techniques to individual purification and separation problems. The chromatographic properties are maintained within the limits of special sieve cuts. This is an additional benefit for the optimization of column permeability and maximizing the highest number of plates per column length.

Silica Gels for Preparative and Classic Column Chromatography are mainly used for the separation of synthetic and natural substances. Their application field is Adsorption, as well as, Partition Chromatography (including reverse phases). Partition Chromatography is a particularly gentle method of sample separation.

ICN Silica Applicational Characteristics

(approximate values)

pH Value:	7.0
Weight (g/ml):	0.4-0.5
Specific Surface (m^2/g):	60Å: 500-600* 100Å: 380*
Water Soluble Matter:	0.2%
Color:	white to light gray
Mean Pore Size:	60 or 100Å
Particle Size:	see product listings

*when properly activated

Apart from the conventional Silica, ICN also produces active Silica. Besides excellent cut properties, Silica Gels have well defined high initial activities. They are excellent for the separation of non-polar substances in non-polar solvent systems and for the purification of solvents for chromatographic and other applications. The standardized initial activity can be lowered by adding polar liquids as is done with Alumina.

ICN Silica, Active Applicational Characteristics

(approximate values)

pH Value:	7.0
Weight (g/ml):	0.4-0.5
Specific Surface (m^2/g):	500-600*
Color:	white to light gray
Water Soluble Matter:	0.2%
Mean Pore Size:	60Å
Loss on Ignition (1000°C/12h):	<5%
Particle Size:	see product listings

Deactivation of ICN Silica, active

Activity	I	II	III	IV	V
ICN Silica	0	10	12	15	add 20% water

Cat. No.	Product	Qty.
04666	ICN Silica 60Å	500 g
04668	0-63 μm	25 kg
02745	ICN Silica 60Å	10 g
02757	18-32 μm	100 g
02753		500 g
02754		1 kg
02755		2.5 kg
02830		25 kg

Cat. No.	Product	Qty.
02824	ICN Silica 60Å	500 g
02825	32-63 µm	1 kg
02827		2.5 kg
02826		25 kg
02758	ICN Silica 60Å	500 g
02759	32-100 µm	25 kg
04641	ICN Silica 60Å	500 g
04660	63-100 µm	25 kg
04662	ICN Silica 60Å	500 g
04664	63-200 µm	1 kg
04663		2.5 kg
04667		25 kg
02760	ICN Silica 60Å	500 g
02761	100-200 µm	25 kg
02811	ICN Silica 60Å	500 g
02809	200-500 µm	25 kg
02749	ICN Silica, active 60Å	10 g
02805	18-32 µm	100 g
02750	ICN Silica, active 60Å 32-63 µm	500 g
02766	ICN Silica, active 60Å 32-100 µm	500 g
02767	ICN Silica, active 60Å 63-100 µm	500 g
02769	ICN Silica, active 60Å 63-200 µm	500 g
02747	ICN Silica, active 60Å	500 g
02751	100-200 µm	25 kg
02770	ICN Silica, active 60Å 200-500 µm	500 g
03090	ICN Silica 100Å	10 g
03100	18-32 µm	100 g
03110		500 g
03120		1 kg
03130		25 kg
03140	ICN Silica 100Å	500 g
03150	32-63 µm	1 kg
03160		25 kg
03200	ICN Silica 100Å 63-100 µm	500 g
03220	ICN Silica 100Å	500 g
03230	63-200 µm	2.5 kg
03250	ICN Silica 100Å 100-200 µm	500 g

ICN Silica Gels for Industrial Applications- Technical Grade

From year to year, the pharmaceutical industry requires ever purer products. This demand creates increased chromatography use. ICN produces Silica Gels (formerly Woelm) ideal for this purpose.

Cat. No.	Product	Qty.
02780	ICN Silitech 60Å 0-32 µm	25 kg
02774	ICN Silitech 60Å 12-26 µm	25 kg
02778	ICN Silitech 60Å 18-32 µm	25 kg
02071	ICN Silitech 60Å 32-63 µm	25 kg
02066	ICN Silitech 60Å 63-200 µm	25 kg
02068	ICN Silitech 60Å 200-500 µm	50 kg
03320	ICN Silitech 100Å 18-32 µm	25 kg
03330	ICN Silitech 100Å 32-63 µm	25 kg

ICN Silica for Medium Pressure Liquid Chromatography (MPLC)

ICN Silica for MPLC are irregular particles with a mean pore diameter of either 60Å or 100Å. They are produced from the same raw materials as the Silica for Column Chromatography. Their identical sorption properties allow an easy transfer from Column Chromatography to Medium Pressure Liquid Chromatography. Their separation performances on the analytical and preparative scale are comparable to those of High Performance Liquid Chromatography.

Applicational Characteristics

(approximate values)

pH Value:	6.5-7.0
Weight (g/ml):	0.4
Specific Surface (m^2/g):	60Å: 500-600* 100Å: 380*
Color:	white to light gray
Mean Pore Size:	60 or 100Å
Loss on Ignition (1000°C/12h):	<5% when activated
Particle Size:	see product listings

*when properly activated

Cat. No.	Product	Qty.
04627	ICN Silica SCC, 60Å	2.5 kg
04632	10-35 µm	25 kg
02735	ICN Silica 60Å	100 g
02736	12-26 µm	500 g
02737		1 kg
02739		2.5 kg
02738		25 kg
02745	ICN Silica 60Å	10 g
02757	18-32 µm	100 g
02753		500 g
02754		1 kg
02755		2.5 kg
02830		25 kg
02824	ICN Silica 60Å	500 g
02825	32-63 µm	1 kg
02827		2.5 kg
02826		25 kg
02749	ICN Silica, active 60Å	10 g
02805	18-32 µm	100 g
02750	ICN Silica, active 60Å 32-63 µm	500 g
03090	ICN Silica 100Å	10 g
03100	18-32 µm	100 g
03110		500 g
03120		1 kg
03130		25 kg
03140	ICN Silica 100Å	500 g
03150	32-63 µm	1 kg
03160		25 kg

ICN Silica for High Performance Liquid Chromatography (HPLC)

The chromatographic properties of ICN Silica for HPLC are exactly identical to those of ICN Silica for Column Chromatography. They are porous, irregularly shaped particles with narrow and clean sieve cuts. ICN Silica allows columns with the highest possible number of obtainable plates per column length together with the lowest flow resistance.

Applicational Characteristics

(approximate values)

pH Value:	7.0
Weight (g/ml):	0.3-0.4
Specific Surface (m^2/g):	60Å: 500-600* 100Å: 380*
Color:	white to light gray
Mean Pore Size:	60 or 100Å
Loss on Drying (180°C/2h):	3.5%
Particle Size:	3-6, 7-12, or 10-18 µm

*when properly activated

Cat. No.	Product	Qty.	Price
02790	ICN Silica 60Å	10 g	
02791	3-6 µm	100 g	
02793	ICN Silica 60Å	10 g	
02794	7-12 µm	100 g	
02796	ICN Silica 60Å	10 g	
02797	10-18 µm	100 g	
03010	ICN Silica 100Å	10 g	
03020	3-6 µm	100 g	
03040	ICN Silica 100Å	10 g	
03050	7-12 µm	100 g	
03070	ICN Silica 100Å	10 g	
03080	10-18 µm	100 g	

ICN Alumina DCC and ICN Silica DCC for Dry Column Chromatography

Dry Column Chromatography is an easy and rapid method that allows a transfer of the operating parameters of Thin-Layer Chromatography to Preparative Column Chromatography. While the transfer of results from Thin-Layer Chromatography to Column Chromatography demands a high level of experience, the transfer of Thin-Layer Chromatography to Dry Column Chromatography is much easier. This simple transfer from TLC to DCC is achieved by adjusting the activity levels of the corresponding stationary phases.

Applicational Characteristics

(approximate values)

pH Value:	3.5 ICN Alumina DCC 7.0 ICN Silica DCC
Bulk Density (g/ml):	0.8 ICN Alumina DCC 0.5 ICN Silica DCC
Color:	white to light pink or gray
Fluorescent Indicator:	F254 nm
Particle Size:	see product listings.
Mean Pore Size:	60Å ICN Silica DCC

Cat. No.	Product	Qty.
04512	ICN Alumina DCC	500 g
04511	50-200 µm	5 kg
04514	pH 7.5	50 kg
04524	ICN Silica DCC	500 g
04526	63-200 µm	3 kg
04530	pH 7.0	25 kg

Cat. No.	Product	Qty.
09653	ICN Nylon Foil Tubing 40-44 mm wide (corresponding to approximately 25 mm column diameter)	20 m
04516	ICN DCC Package 1: Alumina	1 pack
04532	ICN DCC Package 2: Silica	1 pack

ICN Alumina for Thin-Layer Chromatograpy

ICN Alumina for TLC are produced from ICN Alumina Super I and have identical chromatographic properties. Furthermore, they are available in three surface modifications- A= acid, B= basic, and N= neutral. It can be supplied with gypsum added (G). Coating of TLC plates can be done with ICN Alumina by following established and well-known procedures. If 2% of inorganic fluor is added, then ICN Alumina can be used to produce fluorescent layers.

Applicational Characteristics

(approximate values)

Weight (g/ml):	0.7
Specific Surface (m^2/g):	200*
Color:	white to light pink
Particle Size:	5-25 μm

*when properly activated

Cat. No.	Product	Qty.
04346 04347	ICN Alumina A- TLC pH 4.5	1 kg 50 kg
04340 04341	ICN Alumina B- TLC pH 9.0	1 kg 50 kg
04343 04344	ICN Alumina N- TLC pH 7.5	1 kg 50 kg
04409 04413	ICN Alumina G- TLC Contains 11% Gypsum, pH 7.5	1 kg 50 kg

ICN Silica for Thin-Layer Chromatography

ICN Silica for TLC is produced from the same raw material as the ICN Silica for Column Chromatography. ICN's considerable experience in this field guarantees reproducibility of chromatographic characteristics. ICN also produces TLC Silica with binders and fluorescent indicators. This makes it possible to produce TLC-plates with a large range of applications.

Applicational Characteristics

(approximate values)

pH Value:	6.5-7.0
Weight (g/ml):	0.4
Specific Surface (m^2/g):	500-600*
Color:	white to light gray
Mean Pore Size:	60Å
Fluroescent Indicator:	F254 nm
Particle Size:	5-15 μm

*when properly activated

Cat. No.	Product	Qty.	Price
04642 04671	ICN Silica TLC	500 g 25 kg	
04644 04674	ICN Silica G- TLC Contains 11% Gypsum	500 g 25 kg	
04643 04677	ICN Silica F- TLC	500 g 25 kg	
04645 04680	ICN Silica GF- TLC Contains 11% Gypsum	500 g 25 kg	

ICN Silica Plates and Ready-To-Use Silica Rapid Plates for Thin-Layer Chromatography

Besides TLC adsorbents, ICN also supplies pre-coated TLC plates which are ideal for rapid, qualitative separations and for quantitative determinations of photometric methods. ICN offers plates with different layer thicknesses of 250 μm and 500 μm plus a fluorescent indicator if necessary for a variety of applications. In addition, 254/366 Dual Fluor plates are available. Originally developed for the analysis of water-soluble vitamins of the B-group, today they are also useful for analyzing natural substances. Dual Fluor plates are inert and resistant to the usual solvents.

ICN has developed a technique of its own to produce Silica Gels. With this technique, plates of uniform capillary structure can be obtained. The migration time can be reduced by half and thus diffusion is kept within limits.

The most favorable migration time is approximately 20 minutes per 10 cm of layer. If highly viscous and/or polar eluents are used on conventional plates, these migration times will be greatly exceeded. ICN Rapid Plates shorten the migration rate. Therefore, it is not necessary to add diatomaceous earth or other similar substances.

Applicational Characteristics

(approximate values)

Support:	glass
Binder:	inert, organic
Sulfuric Acid Resistance:	120°C
Resistance to Iodine Reagents:	no reaction
Activation:	130°C
Fluroescent Indicator:	see individual listings
Benzene Migration Time:	20 minutes cat.no. 04614 in 11minutes
Water Migration Time:	30 minutes cat.no. 04614 in 15 minutes

Cat. No.	Product	Qty.
04629	ICN Silica Plates 10cm x 20 cm x 0.25mm	50 each
04613	ICN Silica Plates 20cm x 20cm x 0.25mm	25 each
04618	ICN Silica Plates F254 20cm x 20cm x 0.25mm	25 each
04616	ICN Silica Plates F254/366 20cm x 20cm x 0.25mm	25 each
04621	ICN Silica Plates F254 20cm x 20cm x 0.5mm	20 each
04614	ICN Silica Rapid Plates F254 20cm x 20cm x 0.25mm	25 each
04685	ICN Silica Sheets 20cm x 20cm x 0.2mm	25 each
04688	ICN Silica Sheets F254/366 20cm x 20cm x 0.2mm	25 each

ICN Silica Sheets for Thin-Layer Chromatography

ICN produces large quantities of high quality pre-coated aluminum backed Silica sheets. They are resistant to abrasion and are easily bent or cut into smaller sizes. This versatility allows them to be used conveniently in all types of developing chambers. They can be used for both screening purposes in the field and for sophisticated tracking in the laboratory.

Applicational Characteristics

(approximate values)

Support:	aluminum
Layer Thickness:	0.2mm
Binder:	inert, organic
Sulfuric Acid Resistance:	sensitive on heating
Resistance to Iodine Reagents:	no reaction
Activation:	up to 120°C
Fluroescent Indicator:	see individual listings
Benzene Migration Time:	27 minutes

ICN Polyamide

Applicational Characteristics

(approximate values)

pH Value:	7.0
Polyamide Particle Size:	50-160 μm
PolyamideTLC Particle Size:	5-20 μm
Bulk Weight (g/ml):	0.2
Color:	white to transparent
Formula:	polyamide-6

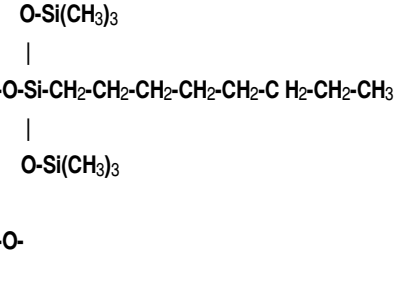
Cat. No.	Product	Qty.
09602	ICN Polyamide For Column Chromatography	250 g
09603	ICN Polyamide TLC For Thin-Layer Chromatography	250 g

ICN Reversed Phase Silica

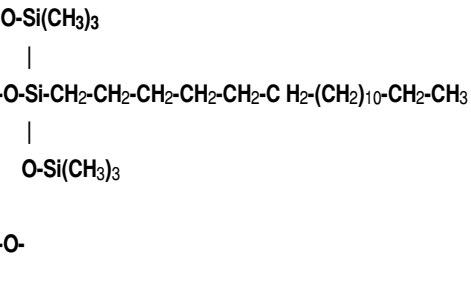
As a starting material for the production of all the ICN Reversed Phase Silica, ICN uses exactly the same types of Silica which are utilized for Straight Phase Chromatography. Accordingly, particle sizing and the adjustment of pore size are done before the modification reaction. This ensures a high quality and high reproducibility standard of the particle distribution. Therefore, the subsequent coating is done on a well suited and homogenous microscopic surface. Residual polarities are almost completely removed by a thorough endcapping procedure. These benefits make ICN Reversed Phase Silica a useful tool for economic and quality improvement of chromatographic procedures which can easily substitute the usual crystallization and/or extraction processes.

ICN Reversed Phase Silica products show a very long life span and behave highly reproducible over a large number of separation and regeneration cycles. Their absolute catalytic inactivity makes them well suited to fully automatic chromatographic separations and it is easy to scale up these procedures for the production of industrial quantities.

ICN Reversed Phase Silica RP 8:



ICN Reversed Phase Silica RP 18:



Applications

ICN Reversed Phase Silica products are suitable for both analytical and industrial scale applications. In contrast to the widely used straight phase adsorbents such as plain Silica and Alumina which generally attract polar substances, ICN Reversed Phase Silica attracts non-polar compounds generally due to a partitioning system. This specific property enables separations to be performed on a technical scale and with samples where chromatography formerly seemed to be prohibitive. Areas of applications are systems where preferably polar solvents, such as water and alcohols are used.

Additional benefits are evident for those industrial scale applications of pharmaceutical industries where straight phase systems either did not give the desired grade of purity or were economically prohibitive. In this context, it is important to know that reversed phase systems frequently give excellent results with purification procedures in the food industries where purity requirements similar to pharmaceuticals are beginning to have rigorous requirements. At the same time, chromatographic methods will become state-of-the-art for these industries as many applications in these fields already exist.

Our RP phase fixed to 60 Å Silica supports have proved very effective for the separation of compounds with a molecular weight smaller than 1000, whereas, the phases on 100 Å supports are useful for larger molecular weights.

Applicational Characteristics

(approximate values)

Specific Surface (m^2/g):	380-500* (100 for Silica RP 6-8)
Color:	white to light gray
Mean Pore Size:	60 or 100 Å
Particle Size:	see product listings

*when properly activated

Cat. No.	Product	Qty.
05012 05013	ICN Silica RP8 60Å 7 µm	10 g 100 g
05005 05006	ICN Silica RP 8 60 Å 18-32 µm,carbon content: 9.5%	100 g 1 kg
05081	ICN Silica RP C8 60Å 20 µm	100 g 1 kg
05010 05011	ICN Silica RP 8 60Å 32-63 µm, carbon content: 9.5%	100 g 1 kg
05027 05028	ICN Silica RP8 100 Å 7 µm	10 g 100 g
05015 05016 05017	ICN Silica RP 8 100Å 10 µm carbon content: 8%	10 g 100 g 1 kg
05020 05021	ICN Silica RP 8 100Å 18-32 µm carbon content: 8%	100 g 1 kg
05087 05088	ICN Silica RP C8 100Å 20 µm	100 g 1 kg
05025 05026	ICN Silica RP 8 100Å 32-63 µm, carbon content: 8%	100 g 1 kg
05030 05031 05032	ICN Silica RP 18 60Å 10 µm carbon content: 16.5%	10 g 100 g 1 kg
05035 05036	ICN Silica RP 18 60Å 18-32 µm, carbon cont.: 16.5%	100 g 1 kg
05084	ICN Silica RP C18 60Å 20 µm	100 g
05040 05041	ICN Silica RP 18 60Å 32-63 µm, carbon cont.: 16.5%	100 g 1 kg
05067 05068	ICN Silica RP C18 100Å 7 µm	10 g 100 g

Cat. No.	Product	Qty.
05050 05051 05052	ICN Silica RP 18 100Å 7-12 µm, carbon content 12.5%	10 g 100 g 1 kg
05060 05061	ICN Silica RP 18 100Å 18-32 µm, carbon content 12.5%	100 g 1 kg
05090 05091	ICN Silica RP C18 100Å 20 µm	100 g 1 kg
05065 05066	ICN Silica RP 18 100Å 32-63 µm, carbon content 12.5%	100 g 1 kg

ICN Bio RP Silica

ICN Bio RP Silicas are acid-washed for a very low metal ion content to avoid disturbing adsorptions when separating proteins and bases.

Cat. No.	Product	Qty.
05327 05328	ICN Silica BioRP C8 100Å 7 µm	10 g 100 g
05387	ICN Silica BioRP C8 100Å 20 µm	100 g
05367 05368	ICN Silica BioRP C18 100Å 7 µm	10 g 100 g
05350	ICN Silica BioRP C18 100Å 10 µm	10 g
05390 05391	ICN Silica BioRP C18 100Å 20 µm	100 g 1 kg
05360 05361	ICN Silica BioRP C18 100Å 18-32 µm	100 g 1 kg
05340	ICN SIlica BioRP C18 60Å 32-63 µm	100 g

ICN RP Alumina

ICN RP Aluminas are specifically designed for chromatography in very high pH ranges (> 8). Please contact your local ICN office for detailed product information.

Cat. No.	Product	Qty.
05900 05901 05902	ICN Alumina RP C18 50Å 20 µm 1 kg	20 g 100 g 500.00

Adsorbents for Specific Applications

Cat. No.	Product	Qty.
09680 09685	ICN Silica Blue 2.5 - 7µm	1 kg 10 kg
02084 02087	ICN Alumina N, Act. I for Pyrogen Removal	500 g 1 kg
02090 02135	ICN Alumina N, Act. I for PCB protocols (as described in U.S. EPA Method 5.002)	5 kg 50 kg
100255	ICN Alumina C for Enzyme Purification (as described in Methods in Enzymology, Vol. 1)	100 g
101233	ICN Calcium Phosphate Gel for Enzyme Purification (as described in Methods in Enzymology, Vol. 1)	50 g
06034 06031	ICN Alumina R for Isolating Technicium	500 g 50 kg
04627 04632	ICN Silica SCC 60Å 10-35 µm for Short Column Chromatography	2.5 kg 25 kg

ICN Desiccant Silica * NEW *

For use in desiccators, this ICN Silica "blue" has a humidity indicator. The color changes from blue (dry) to pink (wet).

Applicational Characteristics

(approximate values)

Particle Size:	2.5 - 7mm
Color/Loading:	blue: 0% loading light blue: 5% loading purple/pink: 10% loading
pH Value:	~ 4
Tamped weight:	0.7 g/ml
Specific Surface:	700 m^2/g
Mean Pore Diameter:	20 Å

Cat. No.	Product	Qty.
09680	ICN Silica Blue	1 kg
09685	2.5 - 7mm	10 kg

Cation Exchange Resins

Strongly Acidic, Sulfonic Acid Functionality Standard-Type Resins

Gel-Type Resins

Cat. No.	Product	Qty.
150294	Amberlite IR-120 Plus (H)	100 g 500 g 1 kg
150295	Amberlite IR-120 Plus (Na)	100 g 500g 1 kg
150296	Amberlite IR-122 (Na)	100 g 500 g 1kg
150297	Amberlite IR-124 (Na)	100 g 500 g 1 kg

Macroreticular-Type Resins

Cat. No.	Product	Qty.
150278	Amberlite 200 (Na)	100 g 500 g 1 kg
150281	Amberlite 252 (Na)	100 g 500 g 1 kg
150282	Amberlite 252 C (Na) High Flow Rates	100 g 500 g 1 kg

Amberlyst Catalysts

Cat. No.	Product	Qty.
150336	Amberlyst 15 (H)	100 g 500 g 1 kg
150337	Amberlyst 15 (H) Wet	100 g 500 g 1 kg

Weakly Acidic, Carboxylic Acid Functionality Standard-Type Resins

Amberlite CG-50 (H)

Cat. No.	Product	Qty.
150283	Amberlite 100-200 Mesh	50 g 100 g 500 g
150285	Amberlite 400-600 Mesh	100 g 500 g 1 kg

Macroreticular-Type Resins

Cat. No.	Product	Qty.
150327	Amberlite IRC-50 (H)	100 g 500 g 1 kg

Gel-Type Resins

Cat. No.	Product	Qty.
150292	Amberlite DP-1	100 g 500 g 1 kg
150329	Amberlite IRC-84	100 g 500 g 1 kg

Anion Exchange Resins

Strongly Basic, Quarternary Ammonium Functionality Standard-Type Resins

Macroreticular-Type Resins

Cat. No.	Product	Qty.
150319	Amberlite IRA-900 (Cl)	100 g 500 g 1 kg
150320	Amberlite IRA-900 C (Cl) High Flow Rates	100 g 500 g 1 kg
150321	Amberlite IRA-900 C (OH)	100 g 500 g 1 kg
150322	Amberlite IRA-904 (Cl)	100 g 500 g 1 kg
150323	Amberlite IRA-910 (Cl)	100 g 500 g 1 kg
150325	Amberlite IRA-928 (OH)	100 g 500 g 1 kg

Weakly Basic, Free Base, Polystyrene Polyamine Functionality

Macroreticular-Type Resins

Cat. No.	Product	Qty.
150305	Amberlite IRA-93	100 g 500 g 1 kg
150306	Amberlite IRA-94	100 g 500 g 1 kg

Weakly Basic, Free Base, Polyamine Functionality

Gel-Type Resins

Cat. No.	Product	Qty.
150304	Amberlite IRA-68	100 g 500 g 1 kg

Selective Ion Exchange Resins

Cat. No.	Product	Qty.
150318	Amberlite IRA-73 Free Base	100 g 500 g

Cat. No.	Product	Qty.
150317	Amberlite IRC-718 Sodium Form Carboxylic Acid Functionality Specific for Transition Metal Cations	100 g 500 g 1 kg

Monobed Resins- Mixtures of Strongly Acidic and Strongly Basic Gel-Type Resins

Cat. No.	Product	Qty.
198581	Amberlite MB-150 Contains 40 % strong acid cation and 60% basic anion resins.	100 g 500 g 1 kg

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