HOMEKA
Cleaner Environment, Better Life.

# Homeka Ion Exchange Resins

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## More than just a product supplier

# Ion Exchange Resins

Ion exchange resins are polymer materials capable of exchanging ions, typically presented as small, spherical beads with specific physical structures and chemical properties. They consist of three primary components, an insoluble three-dimensional mesh structure, functional groups attached to the structure, and exchangeable ions of opposite charges carried by these functional groups. Due to their high efficiency, environmental friendliness, and ease of operation, ion exchange resins play a crucial role across various industries. They contribute to the rational use of resources and environmental protection, aligning with the principles of sustainable development.

Homeka offers three main types of ion exchange resins: cation exchange resins, anion exchange resins and chelating exchange resins.To meet diverse customer needs, Homeka also offers adsorption tanks and automatic control systems. These products are widely regarded as economical and effective solutions across various applications, including: Water treatment,Water purification,Pharmaceuticals industry,Food industry,Metal recovery and fermentation industry.

- A hundred range of specifications to choose;
- High-quality and economical resins;
- Focused solutions for Customers

## 1 Cation exchange resins

Homeka offers three main categories of cation exchange resins, including poly(St-DVB)-based gel type resins **(SG-SAC)** , macroporous type strong acidic cation exchange resins（**SM-SAC**）and polyacrylate based gel（**PG-WAC**）and macroporous type weak acidic cation **(PM-WAC**）exchange resins.

- Excellent resistance to oxidation and physical breakage.
- High capacity, superior selectivity and easy elution.
- Optimized for floating bed with high flow rate.

## 2 Anion exchange resins

Homeka offers four categories of anion exchange resins,including poly(St-DVB)-based gel type resins（**SG-SBA**）, macroporous type strong base anion exchange resins**(SM-SBA)**,weak base anion exchange resins**(WBA)**,and polyacrylate-based gel **(G-SBA)**and macroporous type **(M-SBA)** strong base and weak base anion exchange resins.

- Excellent kinetic properties and high working capacity.
- Uniform particle sizes and low pressure drop.
- Superior resistance to oxidation and physical breakage.

## 3 Chelating exchange resins

Homeka specializes in selective and chelating ion exchange resins with specially designed functional groups（**SCI**）,such as -SH groups,thiouronium, and iminodiacetate.

- High thermal stability
- With specially designed functional groups
- Highly selective for multi-valence metals and High capacity

## 1.1 Water treatment

Ion exchange resins are extensively used in water treatment for diverse applications. Homeka’s ion exchange resin systems are designed to be highly efficient and can be customizable, meeting specific water treatment needs and proving to be a versatile solution in the water treatment industry.

- Suitable for floating bed with high flow rate.
- High resistance to oxidation, physical breakage, osmotic shock fracture and organic fouling.
- High selectivity and high thermal stability.

More detail:

| Homeka | Specification | Ionic form | Mass capacity meg/g | Volume capacity meq/m | Moisture % | Bulk density g/ml | Specific density g/ml | Particle size % | Effective diameter mm | Uniformity coefficient | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SG-SAC | 001x8 | Na | ≥4.5 | ≥2.0 | 43-48 | 0.78-0.88 | 1.26-1.30 | 0.315-1.25 mm ≥95 | 0.4-0.7 | | softening and demineralization |
| SG-SAC | 001x8FC | Na | ≥4.5 | ≥2.0 | 43-48 | 0.78-0.88 | 1.26-1.30 | 0.45-1.25 mm ≥95 | ≥0.5 | ≤1.6 | |
| SG-SAC | 001x8MB | Na | ≥4.5 | ≥2.0 | 43-48 | 0.78-0.88 | 1.26-1.30 | 0.5-1.25 mm ≥95 | 0.55-0.9 | ≤1.4 | |
| SM-SAC | D001 | Na | ≥4.35 | ≥1.8 | 45-50 | 0.77-0.85 | 1.25-1.28 | 0.315-1.25mm ≥95 | ≥0.5 | ≤1.6 | water and chemical treatment |
| SM-SAC | D001H | H | ≥4.80 | ≥1.7 | 48-58 | 0.74-0.80 | 1.16-1.24 | | ≥0.5 | | |
| SM-SAC | D001FC | Na | ≥4.35 | ≥1.8 | 45-50 | 0.77-0.85 | 1.25-1.28 | 0.45-1.25 mm ≥95 | ≥0.5 | | |
| SM-SAC | D001MB | Na | ≥4.35 | ≥1.8 | 45-50 | 0.77-0.85 | 1.25-1.28 | 0.5-1.25 mm ≥95 | 0.4-0.7 | ≤1.4 | |
| SCI | D401 | Na | 1.95 $Cu^{(2+)}$ | 0.6 $Cu^{(2+)}$ | 52-58 | 0.72-0.78 | 1.15-1.25 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | Highly selective for multi-valence metals. |
| SCI | D406 | Al | 1.5 | 0.5 | 50-55 | 0.72-0.80 | 1.15-1.25 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | F(-) removal. |
| SCI | D407 | Cl | 3.0 | 0.8 | 52-60 | 0.65-0.75 | 1.05-1.1 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | nitrate removal from fresh water. |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SCI | D411 | - | - | 35g $Cu^{(2+)}$ | 40-50 | 0.65-0.75 | 1.05-1.15 | 0.45-1.25mm | 0.5-0.7 | ≤1.6 | capture transition metal ions from solutions |
| PM-WAC | D113 | H → Na 65% | ≥10.8 | ≥4.3 | 42-52 | 0.72-0.8 | 1.14-1.20 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | Excellent resistance to physical breakage, osmotic shock fracture and organic fouling. High total and working capacity |

## 1.2 Pharmaceuticals industry

Ion exchange resins play a pivotal role in the pharmaceutical industry for processes such as separation, purification, decolorization, removal of impurities, and pH adjustment.

- Excellent kinetic properties and organic fouling resistance
- High capacity, superior selectivity and easy elution
- High color adsorption capacity

More detail:

| Homeka | Specification | Ionic form | Mass capacity meg/g | Volume capacity meq/m | Moisture % | Bulk density g/ml | Specific density g/ml | Particle size % | Effective diameter mm | Uniformity coefficient | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SG-SAC | 001x4H | H | ≥5.0 | ≥1.25 | 58-65 | 0.72-0.78 | 1.10-1.20 | 0.315-1.25 mm ≥95 | 0.4-0.7 | ≤1.6 | antibiotic extraction , glutamate and other amino acids recovery |
| SG-SAC | 001x7H | H | ≥5.0 | ≥1.8 | 51-56 | 0.73-0.83 | 1.17-1.22 | 0.315-1.25 mm ≥95 | 0.4-0.7 | ≤1.6 | |
| SG-SAC | 001x16 | Na | ≥4.0 | ≥2.4 | 28-38 | 0.83-0.93 | 1.30-1.35 | 0.315-1.25 mm ≥95 | 0.4-0.7 | ≤1.6 | |
| PM-WAC | SQD-85 | H | ≥10.5 | - | 50-60 | 0.7-0.8 | 1.10-1.20 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | antibiotic adsorption. |
| PM-WAC | SQD-88 | H | ≥10.0 | - | 42-52 | 0.7-0.8 | 1.10-1.20 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | vitamin B12 extraction. |
| PM-WAC | SQD-112 | H | ≥10.5 | - | 50-60 | 0.7-0.8 | 1.10-1.20 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | extraction of co listine sulfate |
| SG-SBA | 201x4 | Cl | ≥3.7(3.9) | ≥1.2 | 50-60 | 0.66-0.71 | 1.06-1.10 | 0.315-1.25 mm ≥95 | 0.45-0.7 | ≤1.6 | pharmaceutical and Food industries either. |
| SG-SBA | 201x4OH | OH | ≥3.8(4.0) | ≥1.00 | 60-70 | 0.65-0.70 | 1.05-1.09 | 0.315-1.25 mm ≥95 | 0.45-0.7 | ≤1.6 | |
| P-WAC | SQ-122 | H | ≥4.0 | 0.9 | 60-80 | 0.70-0.80 | 1.05-1.15 | 0.315-2.0 mm ≥95 | 0.4-1.0 | ≤2.0 | discoloration and purification of streptomycin, terramycin, tetracycline and etc. |

## 1.3 Food industry：

The application of ion exchange resins in the food industry enhances product quality, extends shelf life, and ensures compliance with stringent food safety regulations.

- Superior kinetic properties and color adsorption capacity
- Excellent organic fouling resistance
- High exchange capacity and chemical stability

**More detail:**

| Homeka | Specification | Ionic form | Mass capacity meg/g | Volume capacity meq/m | Moisture % | Bulk density g/ml | Specific density g/ml | Particle size % | Effective diameter mm | Uniformity coefficient | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SG-SBA | 201x4 | Cl | ≥3.7(3.9) | ≥1.2 | 50-60 | 0.66-0.71 | 1.06-1.10 | 0.315-1.25 mm ≥95 | 0.45-0.7 | ≤1.6 | pharmaceutical and Food industries either. |
| SG-SBA | 201x4OH | OH | ≥3.8(4.0) | ≥1.00 | 60-70 | 0.65-0.70 | 1.05-1.09 | 0.315-1.25 mm ≥95 | 0.45-0.7 | ≤1.6 | |
| SM-SBA | D296 | Cl | ≥3.5 | ≥1.1 | 50-60 | 0.65-0.75 | 1.05-1.10 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | used as organic scavenger. |
| SM-SBA | DOC2001 | Cl | ≥3.8 | ≥0.8 | 55-65 | 0.63-0.73 | 1.03-1.08 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | Suitable for food processing. |
| SM-SBA | D208 | Cl | ≥3.5 | ≥0.55 | 70-85 | 0.6-0.7 | 1.04-1.08 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | separation and purification of Heparin. |
| PG-WBA | SQD-816 | Free amine | (≥7.0) | ≥2.2 | 55-65 | 0.65-0.75 | 1.05-1.12 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | used in food industries to de-acidify. |
| G-WBA | SQ-338 | Free amine | ≥9.5 | ≥2.5 | 75-85 | 0.63-0.73 | 1.02-1.10 | 0.315-2.0 mm ≥95 | 0.4-1.0 | ≤2.0 | used to remove acid and colors in food and pharmaceutical industries. |

## 1.4 Water Purification

Ion exchange resins are instrumental in water purification processes, such as softening, selective ion removal, demineralization , organic contaminant adsorption, and pH adjustment. They ensure high-quality water for various uses.

- Low contamination
- Excellent mechanical strenght and no oligo-agglomeration
- Superior kinetic properties and high working capacity

**More detail:**

| Homeka | Specification | Ionic form | Mass capacity meg/g | Volume capacity meq/m | Moisture % | Bulk density g/ml | Specific density g/ml | Particle size % | Effective diameter mm | Uniformity coefficient | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SG-SAC | SQ-68 | Na | ≥4.35 | ≥1.9 | 45-50 | 0.78-0.88 | 1.25-1.29 | 0.315-1.25 mm ≥95 | 0.4-0.7 | ≤1.6 | suitable for drinking water softening |
| PG-WAC | 112 | H | ≥10.0 | 4.3 | 40-50 | 0.72-0.82 | 1.15-1.25 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | |
| SG-SBA | 201x4 | Cl | ≥3.7(3.9) | ≥1.2 | 50-60 | 0.66-0.71 | 1.06-1.10 | 0.315-1.25 mm ≥95 | 0.45-0.7 | ≤1.6 | For demineralization and silica removal. |
| SG-SBA | 201x4OH | OH | ≥3.8(4.0) | ≥1.00 | 60-70 | 0.65-0.70 | 1.05-1.09 | 0.315-1.25 mm ≥95 | 0.45-0.7 | ≤1.6 | |
| SCI | D407 | Cl | 3.0 | 0.8 | 52-60 | 0.65-0.75 | 1.05-1.1 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | Specific for nitrate removal from fresh water. |
| SCI | SQ407 | FeO (OH) | - | 0.5 | 55-65 | 0.75-0.85 | 1.2-1.3 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | drinking water treatment,Specific for Arsenic removal. |
| PM-WAC | D113 | H → Na 65% | ≥10.8 | ≥4.3 | 42-52 | 0.72-0.8 | 1.14-1.20 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | Suitable for softening and dealkalization |
| PM-WBA | D301 | OH → Cl 20% | ≥4.8 | ≥1.45 | 48-58 | 0.65-0.72 | 1.03-1.06 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | Very high working capacity for demineralization. |

## 1.5 Metal recovery

Ion exchange resins are widely used for the selective extraction and concentration of valuable metals from industrial wastewater, process streams, and spent solutions，making them essential in metal recovery.

- Outstanding oxidation resistance
- High thermal and chemical stabilities
- Highly selective for multi-valence metals

**More detail:**

| Homeka | Specification | Ionic form | Mass capacity meg/g | Volume capacity meq/m | Moisture % | Bulk density g/ml | Specific density g/ml | Particle size % | Effective diameter mm | Uniformity coefficient | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SM-SAC | SQD-69 | H | ≥4.60 | ≥2.2 | 35-45 | 0.8-0.9 | 1.20-1.30 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | recover Cu and V from the production of dicarboxyl. |
| SM-WBA | SQD-96 | amine | ≥7.5 | ≥2.20 | 55-65 | 0.65-0.72 | 1.03-1.06 | 0.315-1.25 mm ≥95 | 0.4-0.7 | ≤1.6 | acid removal and heavy metal adsorptions. |
| SCI | D401 | Na | 1.95 $Cu^{(2+)}$ | 0.6 $Cu^{(2+)}$ | 52-58 | 0.72-0.78 | 1.15-1.25 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | Highly selective for multi-valence metals. |
| SCI | D405 | H | - | 0.8 $Hg^{(2+)}$ | 45-50 | 0.72-0.78 | 1.02-1.08 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | highly selective for various kinds of Mercury removal. |
| SCI | D405- II | Cl | - | 1.0 | 52-60 | 0.65-0.77 | 1.03-1.10 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | |
| SCI | SQ407 | FeO (OH) | - | 0.5 | 55-65 | 0.75-0.85 | 1.2-1.3 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | Specific for Arsenic removal. Mainly used in drinking water treatment. |
| SCI | D409 | Cl | 3.5-4.0 | 0.8 | 55-66 | 0.68-0.78 | 1.05-1.15 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | Adsorb Gallium from aqueous solution |
| SCI | SQD-74 | Cl | 3.0 | 0.8 | 52-60 | 0.66-0.73 | 1.04-1.10 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | Selectively remove $Fe^{(3+)}$ from concentrated hydrochloric acid |
| SCI | D411 | - | - | 35g $Cu^{(2+)}$ | 40-50 | 0.65-0.75 | 1.05-1.15 | 0.45-1.25mm | 0.5-0.7 | ≤1.6 | capture transition metal ions from solutions |

## 1.6 Fermentation industry

In the fermentation industry, ion exchange resins are primarily used for feedwater purification, nutrient solution preparation, product purification, wastewater treatment and strain mutation prevention , enhancing product quality and ensuring fermentation process stability.

- High-quality glucose treatment
- High capacity and easy elution.
- Excellent resistance to organic fouling?

**More detail:**

| Homeka | Specification | Ionic form | Mass capacity meg/g | Volume capacity meq/m | Moisture % | Bulk density g/ml | Specific density g/ml | Particle size % | Effective diameter mm | Uniformity coefficient | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SG-SAC | SQ-605 | H | ≥5.0 | ≥1.75 | 51-56 | 0.70-0.80 | 1.17-1.22 | 0.315-1.25 mm ≥95 | 0.4-0.7 | ≤1.6 | amino acid recovery, |
| SM-WBA | D301-M | amine | ≥4.8 | ≥1.60 | 45-55 | 0.65-0.72 | 1.03-1.07 | 0.315-1.25 mm ≥95 | 0.4-0.7 | ≤1.6 | high quality Glucose treatment. |
| PM-SBA | D319 | amine | (≥8.5) | ≥2.6 | 50-60 | 0.65-0.75 | 1.05-1.15 | 0.315-1.25mm ≥95 | 0.4-0.7 | ≤1.6 | L-lactic acid & other organic acid adorption |
| SM-WBA | D301-FD | amine | ≥4.7 | ≥1.4 | 50-60 | 0.65-0.72 | 1.03-1.09 | 0.315-1.25 mm ≥95 | 0.4-0.7 | ≤1.6 | remove acid and color from natural extracts or fermentation broth. |
| NPA | DA201-A | - | - | - | 50-60 | 0.65-0.70 | 1.03-1.07 | 0.315-1.25 mm ≥95 | 0.4-0.7 | ≤1.6 | enzyme adsorption and purification. |