

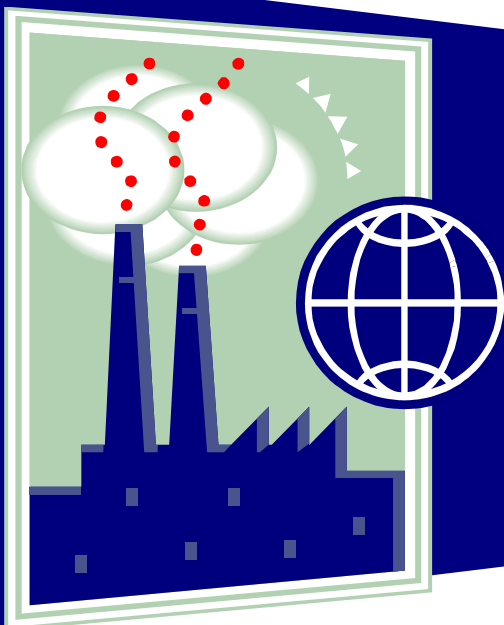
## SERVICE AND PRODUCT CAPABILITIES

- High-quality Ion Exchange Resins
- Large Varieties of Activated Carbon Products
- Industrial and Commercial Water Treatment Chemicals
- Custom-designed and Standard-packaged Water Treatment Systems and Components
- Electric Power Generation Facilities, Industrial Process Plants and Auxiliary Equipment

## GENERAL TECHNOLOGIES, A SERVICES & PRODUCTS CO.

*- High-Quality Services and Products*

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## ION EXCHANGE RESIN

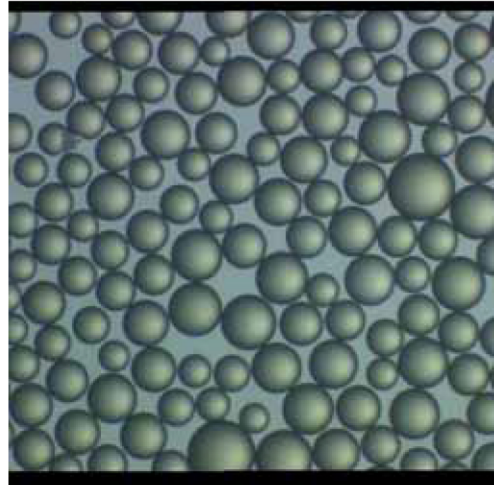
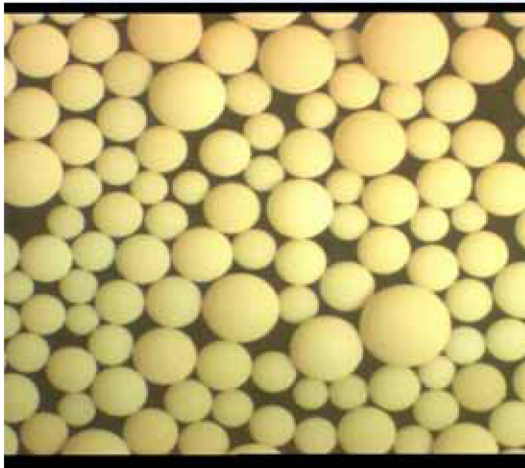
### PRODUCTS:

General Technologies, SPC (GTSPC) offers premium ion exchange resin products for a wide range of applications including the following industrial sectors:

- Drinking water treatment (residential and commercial)
- Electrical power generation
- Steel and heavy-machinery manufacturing
- Chemical and petroleum
- R&D, Laboratories
- Electronics and microelectronics
- Food and beverage
- Consumer products
- Metallurgy
- Environmental protection, etc.

Our ion exchange products include the following commonly used types of resins:

- Poly-styrene-DVB strongly-acidic cation resins, both gel type and macroporous beads.
- Poly-styrene-DVB strongly-basic anion resins, gel, porous gel, and macroporous types of beads, Type I & II.
- Poly-styrene-DVB weakly-basic anion resins, gel and macroporous beads.
- Poly-acrylic-DVB weakly-acidic cations resins, both gel and macroporous beads.
- Poly-acrylic-DVB strongly or weakly basic anion resins, gel and macroporous beads.



Examples of typical products and some applications are as follows:

- **C108**, 8% cross-linked strongly-acidic cation resin, gel type, equivalent to, or exceeding the specifications of, **Purolite C100E, R&H IR120, Sybron C-249, etc.** Common applications include water softening and de-ionization (removal of cations in water) in a variety of different industrial applications.
- **A307**, 7% cross-linked strongly-basic Type I anion resins, gel type, equivalent to **Purolite A-600, R&H IRA-400, etc.** Common applications include removal of anions in water and de-ionization, including weak anions such as bicarbonate and silica.
- **D890**, strongly-basic anion resins with macroporous poly-styrene-DVB bead structure and triethylamine Type I functional group, equivalent to **Purolite A-520E, Sybron SR-7, etc.** Highly selective for nitrate and perchlorate even in high-sulfate content water.
- **MB-1U**, mixed **C108 (black beads)** and **A307** resins (at a volumetric ration of 1:1.5) that are specially processed for mixed-bed polishing applications. Highly regenerated, suitable for ultra-pure ( $18^+$  Mega-ohms) water treatment.
- **Resin for food and sugar processing**, Uniform Particle Size resins, macroporous strong acid, C151, and weak base resins, A451, etc.



## ACTIVATED CARBON PRODUCTS:

GTSPC offers high-quality activated carbon products made from selected, premium-grade bituminous, lignite or anthracite coals, or wood and nut shells. GTSPC's activated carbon products are highly porous carbon materials with highly developed porous structures and huge specific surface areas. These characteristics give the products **very high adsorption capacities**. Also, by selecting different raw materials and manufacturing processes, various pore sizes can be developed, including micropores, mesopores and macropores with mean diameters from 20 Å up to 2000 Å. The different pore sizes have demonstrated enhanced adsorption capacity depending on the chemical compound of concern.

Additionally, the surface areas of GTSPC's activated carbon products can be modified to add various functional groups designed for special applications. These resulted in functionally-modified activated carbon products, or **impregnated activated carbon and catalytic activated carbon**. Examples of these products include impregnated carbon for sulfur and mercury removal from flue gas.

GTSPC's activated carbon products are provided in various **standard or customer-specified particle size range**, any where from powdered activated carbon (<325 mesh) to reagglomerated carbon (typically 3 to 6 mm diameter cylindrical shapes, up to 40 mm briquettes). For many water filtration applications, crushed products of **both directly activated carbon and pulverized and palletized activated carbon** are available. The manufacturing facility is **NSF certified** for drinking water treatment products.

GTSPC's activated carbon products are widely used in the following applications:

- Industrial processes and chemical productions
- Agricultural applications
- Environmental protection (air and water pollution control, etc.)
- Personnel protection (gas masks)
- Water and air purification
- Decoloration of food, sugar, pharmaceutical intermediate and final products, etc.

Examples of typical products and applications:

- **FJ(PC) series**, powdered activated carbon, most widely used in water and wastewater treatment to removal organics, widely used in toxin removal from flue gas.
- **PJ, ZPJ and PJ-AW Series**, granular (regular or acid washed) carbon, mostly used in water and wastewater treatment.
- **ZK and DK Series**, palletized carbon, mostly used for air-borne compound removal, also used in water treatment.
- **Wood and Nut Shell-Based**, used in both air and water treatment.



## WATER TREATMENT CHEMICALS:

GTSPC offers concentrate, high-performance water treatment chemicals for a wide range of applications including the following:

### Organo-Phosphonates and Polymers:

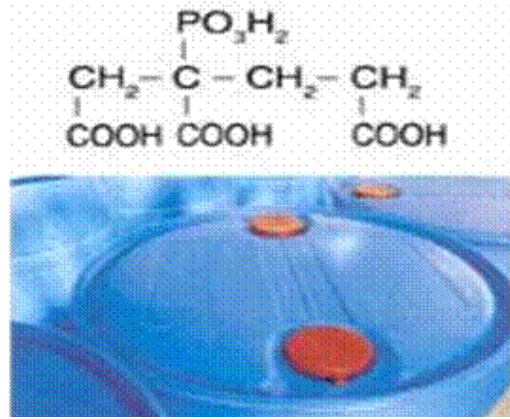
- Scale and corrosion control in cooling water, oilfield water, evaporative desalination and reverse osmosis.
- Sludge modification in boiler water, stabilization of chemical compounds which are decomposed by trace metals (for example, hydrogen peroxide).
- Surface treatment for dairy, metal finishing and industrial operations.
- Regeneration and cleaning of ion exchange resins.
- Detergent formulation components.
- Corrosion inhibition for water-containing systems. **We also offer Sodium Molybdate.**

### Biocides and Preservatives:

- THPS, CMI or MI, TCCA, DMDMH, and Organo-bromine based, with environmental friendly degradation products.
- General biological growth control, biofilm suppressants, algae and fungi eliminators.
- Widely used in most industrial and commercial water treatment for biological related contaminations.

### Oxygen Scavenger and Copper-Corrosion Inhibitors:

- Carbohydrazide and other hydrazine-containing compounds for complete oxygen removal from water.
- TTA and BTA, for yellow metal based system corrosion control programs. Prolong the service life and fully utilize the benefits of these metals.



### Commonly-Used Phosphonates and polymers for corrosion and scale inhibition control:

- **PBTC**
- **HEDP**
- **ATMP**
- **DTPMPA**
- **DTPMPA Sodium Salts**
- **CPMA**
- **PAA**
- **AMPS**
- **HPMA**
- **Sodium Molybdate**

## CHEMICAL CLEANING REAGENTS:

GTSPC offers high-quality, concentrate chemical cleaning reagents including EDTA citric acid, hydroxyacetic-formic acid, ammoniated forms of these organic acids, other organic and inorganic acids. The chemicals are ready to be used out-of-container for field chemical cleaning projects for power generation facilities, chemical and processing plants, pipelines, and other industrial and commercial systems.

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## WATER TREATMENT SYSTEMS ENGINEERING, MANUFACTURING AND COMMISSIONING:

GTSPC is capable of providing standard-packaged or custom-designed water and wastewater treatment systems. We offer conceptual design as well as detailed engineering, and sub-contract first-class OEM facilities to provide complete systems as well as high-quality system components. The equipment we provide are commonly used in the following applications:

- **Screen and depth filtration**, including strainers, bag filters, cartridge filters, pre-coat filters, etc.
- **Medium filtration**, such as sand, multi-layered gravel, activated carbon, greensand, diatomaceous earth, organo-clay, synthetic polymer beads, oil/water separation, etc.
- **Membrane filtration** including microfiltration, ultrafiltration, nano- and reverse osmosis filtration systems.
- **Ion exchange resin systems** for water softening, de-ionization and selective ionic removal processes. Equipment types include single-bed, multi-bed, packed bed, float-bed, mixed-bed systems.
- **Electrodialysis (ED or EDR) and Electro-deionization (EDI) systems**, electro-membrane based water purification systems for wastewater treatment and high-purity water treatment.
- We provide **services** from installation and start-up assistance to turn-key solutions to post-sales services, complete design documents and drawings, operating and maintenance manuals and training, and after all, **we deliver customer satisfaction.**



Our capabilities in membrane-based treatment are very strong, and include applications for varieties of water sources including ground water, surface water, recycled wastewater, seawater, brackish water, etc.

As part of GTSPC's equipment capabilities, we also supply systems components and auxiliary items, including the following:

- **Valves,**
- **Pumps,**
- **Instrumentation and controls,**
- **RO membranes,**
- **ED/EDR and EDI modules,**
- **Filter media, ion exchange resin, activated carbon media,**
- **Pressure vessels,**
- **Tank internal or external piping systems,**
- **Portable exchange tanks and accessories, etc.**



## POWER GENERATION FACILITIES, CHEMICAL AND PROCESSING PLANTS, AND AUXILIARY EQUIPMENT:

GTSPC is proud to represent several leading OEM companies in **China** for power generation and chemical processing facilities, and auxiliary equipment. These manufacturers are all **ASME certified** (ASME “U” and “S” stamps – see certifications below) and government-approved manufacturers for high-pressure boilers and pressure vessels as well.

The primary equipment we can supply include industrial and utility fossil-fuel boilers, trash burners/incinerators and heat-recovery steam generators, steam turbine-generators and turbine drives, heat exchangers, oil and hotwater heaters, condensers, fuel oil and natural gas conditioning equipment, pressured and ambient-pressure storage vessels, water treatment equipment and components, lined chemical processing and storage vessels, and our scope of work can be **from skid-mounted equipment to field-erected equipment to complete turn-key (EPC) systems or plants.**

Our manufacturers also provide complete construction and field services capabilities depending on the location and geopolitical environment of the job site. Currently we are capable of working in the **Mid-eastern and South-east Asian countries, as well other regions.**

Our engineering and service capabilities include **English-version** shop drawings to detailed construction drawings to Operating & Maintenance Manuals. We also provide English-speaking field service representatives to your job sites. Again, **OUR GOAL IS TO DELIVER COMPLETE CUSTOMER SATISFACTION.**

