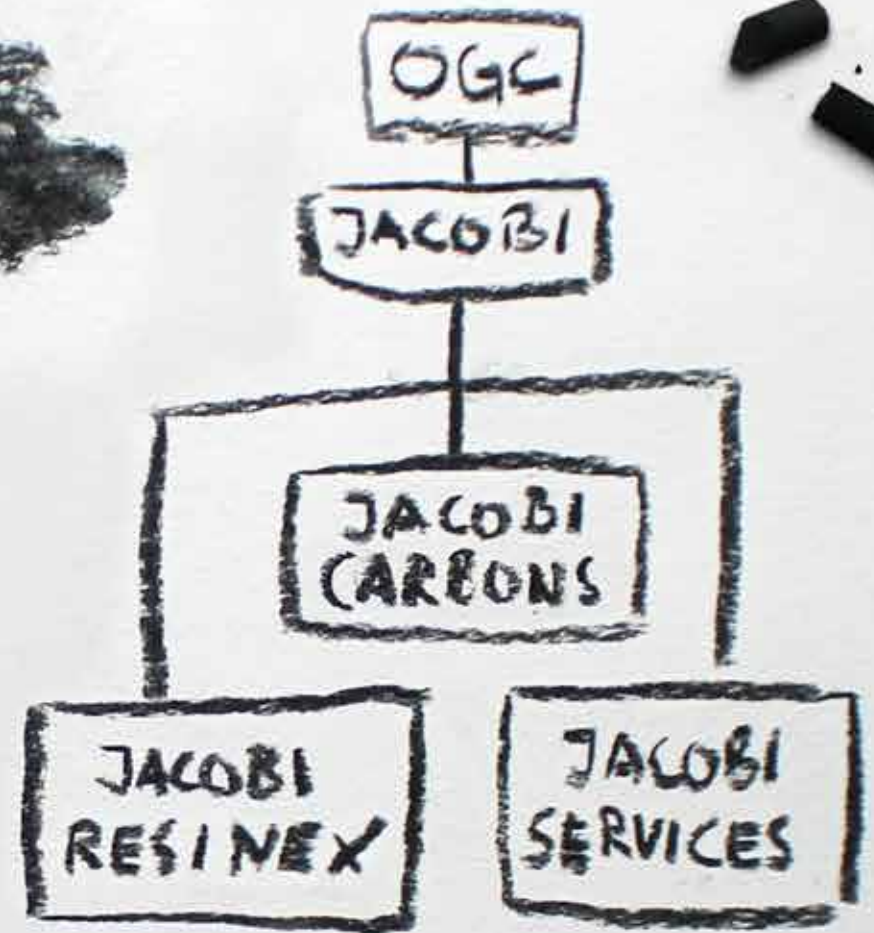


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# The Progressive Company



Ferdinand Jacobi founded the company in 1916.



Global presence with a local touch, the hallmark of our company.



Expert advice and technical support to service our customers in the best possible way.

**THE JACOBI GROUP WAS** founded in Sweden in 1916 by Ferdinand Adolph Wilhelm Jacobi. Over the years the company has grown into one of the world's largest manufacturers of activated carbons for a wide array of applications. Today the Jacobi Group consists of three divisions, and is a proud member of the Osaka Gas Chemicals Group.

The Jacobi Group is involved with production and all aspects, from innovation and best practice to customer focus and comprehensive process control. We are conscious of regulatory issues and are highly sensitive to the requirements of a changing market and our customer's need to shift perspective from ROI to environmental concerns. Through our partnerships and industry participation we play an active role in shaping the future along with our customers.

Our dedicated affiliates from around the world share one mission: To be the best value activated carbon provider and to offer our customers unrivaled technical and customer service.





# The Focused Company



Quality is not just an idea for Jacobi, it is the fundamental basis of all we do. Every grain of carbon has to meet the customer's needs.

**WITH 100 YEARS** in business, Jacobi has developed the technical expertise and knowledge to understand the difficult challenges our customers face on a daily basis.

Our collective company-wide IT platforms create a shared framework that helps us seize opportunities related to the achievement of our customer's objectives. Our cross functional, matrix type organisation, allows us to best utilise our resources and optimise our customer relations, technical support, accounting and sales activities. Understanding the customer/provider interface is facilitated by our own in-house marketing and IT management teams that lets us remain focused on the business.

Jacobi's large R&D facility is a part of the OGC facilities in Osaka, Japan and continually creates customer-based solutions with the help of our engineering and process application groups. Custom solutions are commonplace at Jacobi and we welcome any challenge. Our dedicated team of experts are already working on the next generation of products.



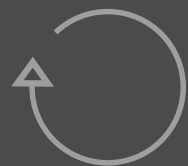
With the industry's largest research department, Jacobi is at the forefront of carbon product innovation.



Jacobi listens to our customers to ensure that every aspect of their requirements are met, everytime.



Responsibly motivated employees make all the difference.



# The Sustainable Company

**AS A GLOBAL COMPANY,** Jacobi is highly conscious of our social responsibilities regarding welfare and rights of employees and stakeholders alike. This extends to considerations for working conditions and standards in the developing countries we operate in.

Jacobi's team of specialists have over 20 years' experience in environmental sustainability and are certified to all environmental standards including ISO14001:2013. Customised solutions, superior know how and reliable services allow our customers to meet their goals while maintaining a sustainable profile.

Using sustainable raw materials, such as coconut shells and wood, are of utmost importance for Jacobi. At the same time our R&D department is constantly working to develop alternatives to non-sustainable raw materials. We also understand and strive to minimise the impact of CO<sub>2</sub> emissions that our operations can create.

Maximum utilization is also important, as is keeping waste to a minimum. We effectively reuse resources like water, steam and generated heat to a great extent. Exhausted activated carbon can be recycled, and we provide cost effective and environmentally sensitive reactivation services.



Twenty years of responsible, sustainable thinking keeps Jacobi at the leading edge.



Our factories employ system to recover energy and water for use and reuse. This provides utility services and protects the environment.

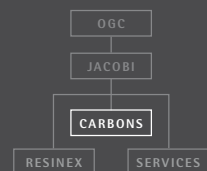


Coconuts provide a truly sustainable and carbon neutral activated carbon and this is where Jacobi leads.



Economically sound and environmentally responsible recycling of activated carbon.





# The Carbon Company

**CARBON IS THE MOST** abundant element on earth. Also, it is Jacobi's specialty; our "bread and butter". We know activated carbon and how to select the correct raw materials that will produce the most suitable end products for specific application demands.

Jacobi carefully selects the highest quality coconut shell, coal and wood. These raw materials are processed at high temperatures to remove the naturally volatile components and to create the characteristic porous nature that activated carbon is known for. The skilled control of the manufacturing parameters is second nature to Jacobi, allowing our products to out-perform those of our competitors.



Start to finish quality control.

Making activated carbon from coconut shells requires the input of many people, and our skilled teams across the world are proud of our achievements.



From humble raw materials to a highly technical adsorbent, Jacobi manages to create one the most versatile products available today.





# The Quality Company



**OUR DIVERSE OFFERING** includes carbons produced from lignite, bituminous and anthracite coals. We produce double the amount of activated carbon from coconut shells than any other supplier. The end products come in various application forms including powdered, granulated and extruded.

Some of the key factors in choosing the right activated carbon is the degree of purity, adsorption efficiency and capacity along with other individual qualities like microporosity, mesoporosity, macroporosity and ash content. Jacobi produces high quality activated carbons from a wide range of raw materials.

In line with Jacobi's aim of providing ecologically sustainable options to all our customers, all of our packaging materials are suitable for recycling.



**COCONUT**  
Coconut shell is plentiful, renewable and sustainable. Jacobi uses specially selected coconut shells that provide the precise characteristics in the activated carbon product to meet the customer's application requirements. Manufacturing specialised activated carbons from coconuts of superior quality is very complex, and we have pioneered the development of a process that makes the best use of this valuable resource.



**BITUMINOUS COAL**  
Highly durable and suitable for repeated regeneration, bituminous coal based activated carbon features a highly developed pore structure. This results in a more mesoporous product with a capacity for larger molecules including organic solutes, free chlorine and harmful gases in the air.



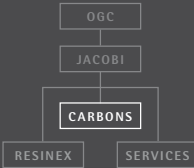
**ANTHRACITE COAL**  
Activated carbon based on anthracite coal results in a less mesoporous structure but increases the capacity to handle organics. Its highly developed porous structure and large surface area makes it ideal for both gas-phase and fluid-phase purification and adsorption applications.



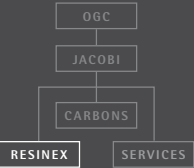
**LIGNITE COAL**  
Lignite based activated carbon tends to have a larger pore diameter and higher total pore volume. This makes it well suited for removal of complex organics from water.



**WOOD**  
With wood as the raw material various types of activated carbons can be produced through physical and chemical means. Wood based carbon is characterised by a more meso and macroporous pore structure, depending on the method of activation. Large surface area, excellent colour removal properties and high purity are other key features. Primary areas of use include potable water, industrial and residential wastewater treatment as well as the chemical and medical fields of application.







**PROVEN MANUFACTURING TECHNOLOGY** is used in combination with technically advanced processing techniques to produce Resinex™ ion exchange resins for use in a wide range of applications.



- Water softening
- Water purification
- High purity water
- Decarbonization



- Catalysis
- Decolourization
- Demineralization
- Dealkalization



- Removal of contaminants in effluent, waste water treatment
- Steam condensate polishing
- Selective metal removal



- Decationization
- Drinking water treatment
- Purification of liquid
- Sweeteners



- Food processing
- Ultrapure water production
- Removal of heavy metals, boron and nitrates

# Resinex™

**RESINEX™ IS A LINE OF** ion exchange resins designed to ensure the consistent high water quality required in today's industrial manufacturing processes, from water purification to the development of chemical and pharmaceutical products. Proven to have minimal effect on the treated liquid, either in terms of organic leaching or bacteriologically.

Jacobi supplies a broad range of high quality ion exchange resins worldwide to cover all the most important applications in water and wastewater treatment. The highest quality raw materials are used to manufacture Resinex™ and every stage of the production is closely monitored.

Many industrial manufacturing plants operate high pressure steam boilers for power generation and other applications. The quality of the feed water required for high pressure steam boilers is critical and requires stringent control. Resinex™ ion exchange resins may be installed in filter operations as the principal treatment stage, or form part of a multi-stage water treatment facility.



Jacobi Resinex is a division of the group dedicated to ion exchange resin technology and products.

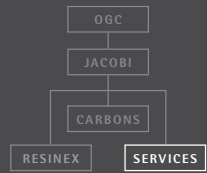


Ion exchange resins help to purify the water we drink and use for the generation of energy. Without the Resinex™ products, the minerals present in water would be unpalatable or cause damage to expensive equipment.

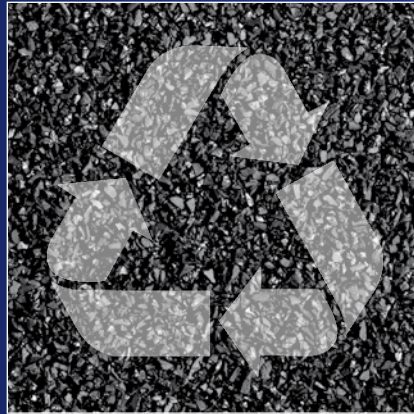


# The Purifying Company





Jacobi has the equipment, experience and expertise to ensure maximum effectiveness and return on investment.



Recycled or regenerated activated carbon can be a cost effective answer.



Close control of logistics operations, and using dedicated vehicles makes Jacobi a market leading service provider.

# The Service Company

Modular design allows multiple filter units to be used in parallel, which decreases energy consumption.

**PROVIDING THE HIGHEST** quality activated carbon and ion exchange resins to our customers is not the only thing we do well. We also have a full range of related services, from modular filtration units to carbon exchange and reactivation, that meet and exceed the demands of the many different industries we serve.

Dealing with spent carbon requires complex handling, and regulatory compliance, while ensuring minimum downtime. Our highly trained experts can handle the entire process – from removal, packaging, transportation and disposal to replacement with reactivated or fresh carbon.

Recycling is a responsible method for reducing CO<sub>2</sub> emissions. Jacobi places high importance on the environment and has invested in facilities that will regenerate activated carbon while considering the environment. Our reactivation plants allow an effective option to media replacement.

When removal and exchange of spent activated carbon is required, our modular filter units AquaFlow™ and EcoFlow™ provide great flexibility. These units reduce capital outlay and are available on a purchase or rental basis. Our Resinex™ ion exchange services include media removal and placement as well as in-service testing.



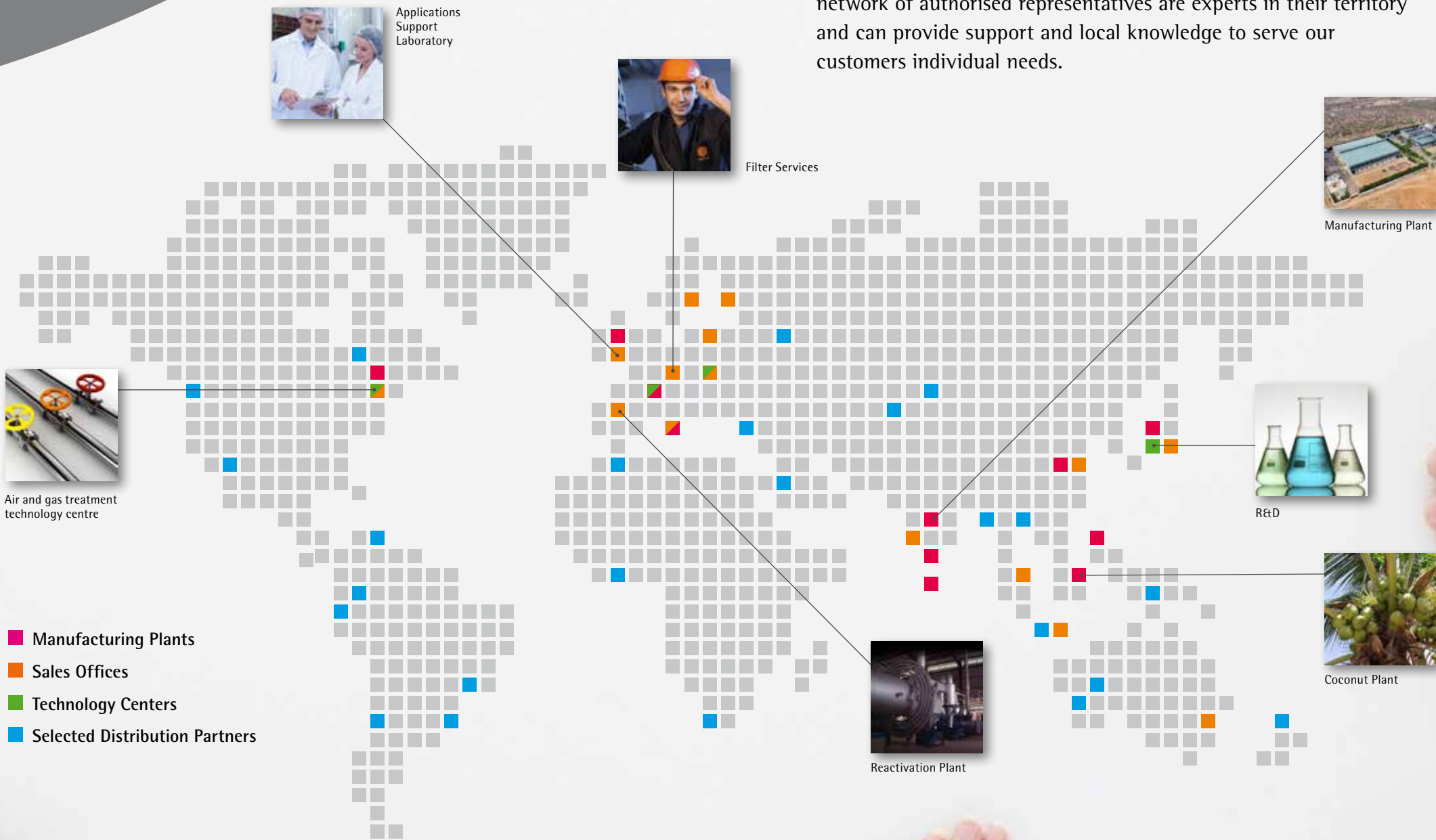




# The World Wide Company

## GLOBAL PRESENCE WITH A LOCAL TOUCH

With manufacturing hubs on three continents and sales offices on four, Jacobi Carbons is a truly global company. However, our philosophy has always been to think global and act local. Our network of authorised representatives are experts in their territory and can provide support and local knowledge to serve our customers individual needs.





# *The* Versatile Company

**ACTIVATED CARBONS IN** their various forms are used in many diverse markets. Jacobi makes a substantial effort to know the inner workings of every market, and how to provide the most suitable solutions for our customers.



## AIR & GAS

The use of activated carbon for the purification of air is widespread. Originally used in industrial equipment for regulatory compliance of emissions the recovery of solvents has been both an environmental and economic benefit to a variety of industries. Through the use in clean rooms, for whole building filtration and now in the growing sector of home air filtration (HAF), Jacobi has been a leader in provision of clean air. Similarly, our activated carbon products both purify and separate critical gases, such as CO<sub>2</sub>, H<sub>2</sub>, O<sub>2</sub> and CH<sub>4</sub>.



## AUTOMOTIVE

The ultra-competitive vehicle manufacturing market poses a variety of challenges for this dynamic industry. Stringent emission regulations require efficient removal of volatile organic compounds from the vehicle. Fuel mileage standards mean weight must be minimised, which impacts on how air and fuel filters are designed. Activated carbon plays an important role in the filtration systems of almost all motor vehicles.



## FLUE GAS & MERCURY

It is common practice to use incineration methods for waste disposal in many industrialised countries. If correctly done, there are opportunities to recover energy from this process. However, operating an incinerator requires strict adherence to environmental regulations. Jacobi has a line of specially designed activated carbon that effectively adsorbs unwanted compounds from flue gasses.



## FOOD & BEVERAGE

In the food and beverage industry it is very important to be able to deal with unwanted impurities that require removal. Beverage producers especially need to maintain high water purity levels and sometimes water from local sources needs treatment before use. Public health and safety is at the top of the list. Jacobi has activated carbons with a diverse range of pore properties that are ideal for adsorption of numerous unwanted chemical compounds.





**HOME WATER FILTERS**  
People in developed and developing nations alike, are experiencing higher standards of living. That includes higher quality water from the tap. Activated carbon is the tried and tested filtration solution to meet the challenge. Jacobi offers a full selection of water treatment products designed for use in Point of Entry and Point of Use filters.



**MINING**  
Jacobi is the world's largest manufacturer of activated carbons for the gold mining industry. Nearly 50% of all adsorption-desorption recovery plants worldwide use our line of activated carbons. Ore of diminishing quality needs to be processed cost effectively and environmental responsibility needs to be considered. Technical support is critical for the industry. Our carbon management program includes audits of carbon circuits, analytical testing of carbon samples, and on-site troubleshooting of carbon adsorption systems.



**PETROCHEMICAL**  
Challenges for operators of petrochemical facilities are varied. Optimizing the refinery to maximise profits while complying with increasingly stringent regulations governing air and water emissions can be difficult to accomplish. Jacobi fully understands the scale and nuances of refinery operations and has developed an extensive range of activated carbons to meet all treatment challenges. Whether for gas sweetening, amine and glycol purification, condensate recovery or final product refining, Jacobi has the activated carbon solution.



**PERSONAL PROTECTION**  
Working in hazardous environments requires personal protection equipment to ensure worker's safety. Removing airborne contaminants becomes more complicated when required to meet technical challenges and navigating complicated health and safety regulations. Protection from chemical, biological and radiological materials is required and effects from toxic industrial chemicals are increasingly monitored. Activated carbon is the principal means of providing respiratory protection for military and police applications. And they are also used in the nuclear industry to guard against radioactive iodine compounds and other toxic gases.



**PHARMACEUTICAL & MEDICINAL**  
Activated carbons can be incorporated into medicinal products that act as aids to digestion and relieve the symptoms of cholestasis. They are also used in abdominal radiography procedures and during blood dialysis to absorb toxins and potentially life threatening contaminations. Carbons are included in certain over the counter stomach remedies and in veterinary medicine. For pharmaceuticals, activated carbons can eliminate unwanted by-products without chemical modification. Purity and performance are key factors.



**SUPERCAPACITORS**  
Today's society demands more electrical power for a huge array of applications. Simultaneously, energy storage has become more problematic, especially when it comes to short term accumulation for immediate and rapid reuse. Supercapacitors are able to supply peak bursts of power for many applications when required and are able to recharge quickly. Activated carbon plays an important role in this process enabling stored energy to discharge without significant power loss, and restoring optimal capacity to the supercapacitor cell.



**TOBACCO**  
Tobacco users are highly selective when it comes to taste and odour, and the tobacco industry modifies these sensory perceptions by using activated carbon in their delivery devices. Activated carbon with high surface area is used as filter media in most cases. Jacobi has developed a range of carbons that exceed industry requirements for performance, cleanliness and is sensitive to the unique manufacturing requirements of tobacco companies.



**WATER TREATMENT**  
The need for pure, clean water will never cease and the demand grows every day. Stringent water quality regulations add further challenges to manage possible contaminants in drinking water supplies. For a long time, activated carbons have been used to provide cleaner water, and the surrounding technology continues to develop. From purification of municipal water, effluent water treatment, providing clean feed water for industry to filters for home aquariums, swimming pools and more, Jacobi has the activated solutions to handle any application.





## STANDARD PRODUCTS



### AddSorb™

Product line providing specialised high performance impregnated activated carbons.



### AquaSorb™

Activated carbons for water treatment.



### ColorSorb™

Activated carbons for highly effective decolourisation for food, chemical and pharmaceutical products.



### EcoSorb™

A range of air and gas filtration products, including a specific line of activated carbons for flue gas treatment.

**JACOBI IS PROUD** to offer the broadest line of activated carbons in the industry, with hundreds of standard products in granular, powdered, and extruded forms, made from diverse raw materials including coconut shell, various grades of coal, and wood.

# The Complete Company

## SPECIAL PRODUCTS



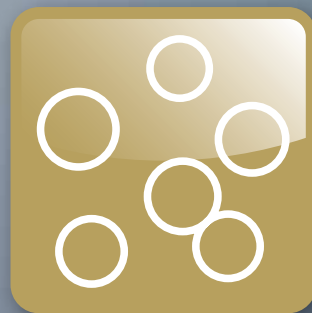
### GoldSorb™/Picagold™

Integration of the industry-leading Picagold™ precious metal recovery carbons with high performance GoldSorb™.



### PetroSorb™

Activated carbons specially designed for treatment of liquid and gas streams in the extraction, refining and downstream processes.



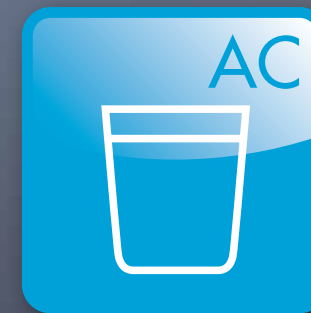
### Resinex™

A complementary and stand-alone treatment media for ion exchange processes in water and food applications.



### Reactivated Carbon

Environmentally responsible and cost effective carbon reactivation services utilizing high temperature furnaces can greatly reduce CO<sub>2</sub> footprint of treatment processes.



### Actitex™

A novel adsorbent based on an activated carbon fibre media for gas and water filtration purposes, offered in either a felt or cloth form.



### EcoSorb QS-Advanta™

Unique liquid treatment for the removal of toxic mercury. Ensures compliance with current and proposed standards.



### AquaFlow™/EcoFlow™

Modular filter units offering an easy to use solution for remediation, treatment and purification of water.



# The Global Company

Jacobi Carbons has developed the most diverse production base in the industry with manufacturing plants, reactivation plants and sales offices located in 19 countries around the world.



## MANUFACTURING PLANTS

China	The Philippines
France	United Kingdom
Germany	United States
India	Vietnam
Italy	
Japan	
Sri Lanka	



## SALES OFFICES

Australia	Poland
China	Singapore
Finland	Spain
France	Sweden
Germany	Switzerland
India	United Kingdom
Italy	United States
Japan	
Malaysia	



## TECHNOLOGY CENTERS

France
Germany
Japan
United Kingdom
USA



## SELECTED DISTRIBUTION PARTNERS

Algeria	Mexico
Argentina	Myanmar
Australia	New Zealand
Brazil	Papua New Guinea
Canada	Peru
Colombia	Saudi Arabia
Ghana	Russia
Chile	South Africa
Ecuador	Turkey
Indonesia	United States
Kazakhstan	Uzbekistan

## JACOBI CARBONS HEAD OFFICE

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JACOBI CARBONS IS  
A PROUD MEMBER OF THE  
OSAKA GAS CHEMICALS GROUP