OIL & GAS
PURIFICATION
With its high adsorption capacity for a wide array of molecules ranging from odorous compounds to dark color bodies, activated carbon is an excellent choice for the purification of raw materials, intermediates and end products for the oil and gas industry. Removing unwanted contaminants such as mercury, colors, odors, and sulfur components allows for the consistent production of high quality natural gas, oil and petrochemical products. Whether cleaning gas scrubber liquids to increase their longevity, decolorizing field condensates, or providing catalyst support for hydrocarbon sweetening, our activated carbons play a critical role.

We are a pioneer in innovative activated carbon applications. Since we began producing activated carbon almost 100 years ago, we have expanded our product range to keep up with ever-changing demands. Offering the broadest product portfolio in the industry, we have the capability to produce activated carbon from a variety of raw materials in ISO 9001-certified plants across the globe.

In addition to offering high quality activated carbon products for more than thirty applications in the oil and gas industry, we also provide a comprehensive service offering, including:

- Review of your anticipated activated carbon needs
- On-site carbon application training
- Basic design calculations
- Spent disposal and slurry exchanges
- Samples for testing and analysis

Our activated carbon grades offer safe and cost-effective solutions in a variety of applications.

**Gas scrubbers**
Gas scrubber liquids like amines (e.g. MEA, MDEA, DEA, Benfield solution) and glycol are used in gas absorption systems for the removal of sour gases (CO₂/H₂S) and water vapor from natural gas. This sweetens the gas in order to maintain its heating value and reduces corrosion in the process. These gas scrubber liquids are purified by granular activated carbon (GAC), which removes degradation products, surfactants, organic acids, pipeline preservatives and other corrosive contaminants. The result is reduced foaming of the amines, reduced corrosion, lower amine make-up, overall higher amine quality, and increased efficiency of the plant operation.

**Mercury removal from natural gas**
Mercury is a trace element that occurs in natural gas. Mercury is harmful to the environment and to processes and transport equipment. Natural gas requires treatment to prevent the negative implications associated with the presence of this substance. Our activated carbons high removal efficiency, low pressure drop and high hardness make it the superior technology for mercury removal.
Field condensate purification

Field condensate purification is a new trend in the midstream industry that provides gas processors with an option to convert the condensate into more valuable NGLs. Gas processors use activated carbon treatment to remove heavier hydrocarbons and other color bodies (resins and asphaltenes) to meet the NGLs pipeline specifications. This saves gas processors from the high cost of trucking field condensates to alternate pipelines and increases the value of the condensates.

Pressure swing adsorption

Pressure swing adsorption is a technology used for the separation of gasses based on their molecular characteristics and affinity for adsorbents such as activated carbon. We manufacture products for this application with flat adsorption isotherm and high working capacity for small molecules, making them highly efficient at adsorbing and regenerating gasses.

Hydrocarbon sweetening

The hydrocarbon sweetening process involves the catalytic extraction of mercaptans from refinery products. We have specially developed GAC grades as catalyst carriers for hydrocarbon sweetening. Due to its large internal surface area, these activated carbon grades have proven to be excellent carriers for the catalyst, enabling conversion of the mercaptans to disulfides.

Steam condensates

The use of steam boilers in the chemical process industry and power plants is widespread. We offer activated carbon grades with high adsorption and extremely low leachable silica content for the removal of dissolved organic compounds like mineral oil, that otherwise could diminish valuable condensate returns to steam boilers.

Gas and air purification

Most manufacturing plants are required to restrict airborne emissions of harmful or odorous components. In addition, contaminants should be removed from industrial process gases to protect catalysts and downstream equipment, and/or to yield a pure intermediate or final gas. Activated carbon is especially cost effective in meeting these challenges and removing organic and inorganic impurities at levels up to a few hundred ppm.
Vapor recovery

Hydrocarbon vapor recovery units (VRUs) have been in use since the late 1970s for vapor control at gasoline bulk storage and unloading facilities. Operating with gasoline-saturated flows and vacuum regeneration, these systems require special activated carbons. We have developed a pelletized carbon with a pore structure used for the adsorption and desorption of gasoline. Combining high gasoline adsorption characteristics with superior hardness, low density and low dust levels gives this activated carbon grade a long service life.

Wastewater

In wastewater treatment, activated carbon is mainly used for polishing purposes, following pre-treatment that includes solids removal and bio-treatment. Target compounds for the activated carbon include phenols, color bodies and non-biodegradable chemical oxygen demand (COD). Either GAC or PAC may be used. PAC is also used in biological PAC treatment, where activated carbon plays two roles as it both adsorbs contaminants from wastewaters and acts as a surface for beneficial microbes to attach to. The PAC adsorbs toxins that would be harmful to bacteria and in this way buffers the potential shock to the microbes from high concentration incoming loads of contaminants in wastewater.

CABOT

PURIFICATION FOR LIVING

Founded in 1918, Cabot Norit Activated Carbon is the world’s largest and most experienced producer of activated carbon, used to remove pollutants, contaminants and other impurities from water, air, food and beverages, pharmaceutical products and other liquids and gases in an efficient and cost-effective manner. In addition to our unparalleled product portfolio, we offer a full range of activated carbon services including rental systems, carbon reactivation, bulk delivery and change-out, carbon evaluation, as well as technical service and support to help our customers meet their specific purification needs. We provide its customers with a worldwide network of sales and service support. In fact, we manufacture activated carbon in five plants and reactivate carbon in four plants around the world. So whether you have one operation or many facilities around the globe, we’ve got you covered.
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Our sales, technical service and customer service teams are prepared to serve customers around the world. Contact us at cabotcorp.com/activatedcarboncontact.