

OUR ACTIVATED CARBON PORTFOLIO FOR BIOGAS PURIFICATION

Benefits of our high performance biogas solutions

- ◆ Reduction in media purchased/year
- ◆ Reduction in media change outs and disposal
- ◆ Increase in gas processed
- ◆ Lower operations and maintenance costs
- ◆ Improved life and performance of engines, fuel cells, membranes, etc.

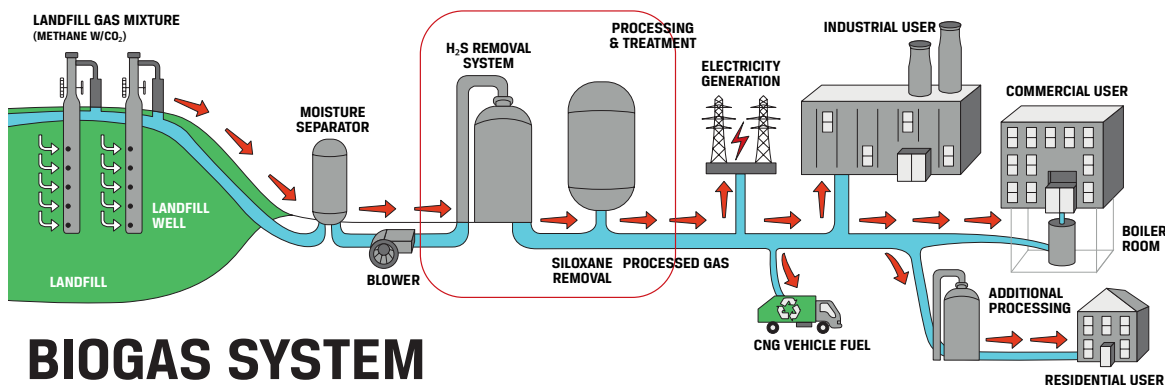
A full suite of activated carbons for all of your biogas needs

Unwanted impurities must be removed from biogas in order to reduce equipment damage and downtime, ensuring emission targets are met, and to meet gas purity specifications. We have a complete suite of high performance activated carbon products to meet all of your biogas purification needs.

We use steam or chemical thermal activation processes to convert carbonaceous raw materials into powdered, granular and extruded forms of activated carbon with high porosity and surface area. We manufacture activated carbon with a broad range of functionalities and adsorptive capabilities tailored to remove the following damaging and unwanted impurities in biogas:



Impurity	What is it?	Why remove it?
Hydrogen Sulfide (H ₂ S)	A hazardous chemical compound present in biogas derived from agriculture, wastewater treatment, and landfills	Carries a foul odor, poisonous, corrosive, and flammable
Siloxanes	Man-made organic compounds often found in landfills and wastewater treatment facilities	Cause significant damage, destruction, and reduced efficiency to engines, turbines, fuel cells, and catalysts
Volatile Organic Compounds (VOCs)	Organic chemical compounds often found in biogas derived from agriculture, landfills, and wastewater treatment facilities	Cause significant damage to membranes and contributes to SO _x and NO _x emissions



BIOGAS SYSTEM

— GAS COLLECTION — | — GAS CONTROL AND PROCESSING — | — GAS UTILIZATION —

Example of our optimized purification process

Selection of the most effective activated carbon

1. Determine the biogas purification requirements
2. Understand the biogas site's operating conditions
3. Review an updated gas analysis
4. Consult with our applications specialists to optimize the purification method
5. Decide on which product will offer the greatest value based on site conditions and gas purification objectives

Our product portfolio Biogas – H₂S removal

Product	H ₂ S loading %	Pressure drop	Performance at < 60% relative humidity	Cost/kg of H ₂ S removed
DARCO® BG 1 activated carbon				
DARCO BGH activated carbon				
NORIT® ROZ 3 activated carbon				

Our product portfolio Biogas – Siloxane/VOC removal

Product	Application	Siloxane loading %	VOC loading %	Pressure drop	Reduction in operational costs
NORIT SILPURE activated carbon	Engine site				
NORIT RB 4W activated carbon	Biomethane				
NRS CARBON EA 3-4*)	Biomethane				

*1) NRS CARBON EA 3-4 is a reactivated product and is recommended based on customer location

Best Better Good Fair Poor

*2) For optimal removal efficiency of H₂S, siloxanes, and VOCs in a single filter, we recommend a layered media approach. Please contact your local application engineer for support.

Over the years we have developed a great expertise in treating biogas from all different types of applications. We pride ourselves on offering some of the industry's most advanced materials for H₂S, siloxane, and VOC control, while maintaining a deep understanding of our customers' process requirements.

Our sales, technical service and customer service teams are prepared to serve customers around the world. Contact us at cabotcorp.com/activatedcarboncontact



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