



ACTIVATED CARBONS FOR THE FERTILIZER INDUSTRY

ESSENTIAL PRODUCTS FOR THE REMOVAL OF ORGANIC IMPURITIES DURING THE PRODUCTION OF FERTILIZERS

CARBOTECH: The company is Germany's leading supplier of powdered, granulated, and extruded activated carbons. In the very heart of the Ruhr industrial area, CarboTech operates integrated production plants for the manufacture, processing and packaging of customised activated carbons, activated cokes and Carbon Molecular Sieves from bituminous coal, coconut shell coke, brown coal and charcoal.

TRADITION: CarboTech has its roots in Germany's institutional mining research and to the coal industry. The company sees itself as being part of the tradition of all those companies who extract knowledge from Science and Technology in order to use it for the benefit of people and their environment in an economically practical way. They are doing this every day, all over the world.

QUALITY: As successor to CarboTech Aktivkohlen GmbH, CarboTech today presents itself as a modern, small-to-medium-sized company. Since CarboTech works consistently with its customers interests at heart, our top priority is to constantly improve operational achievements. High demands of product and service quality go without saying for every employee.

EXPERIENCE: CarboTech brings together experiences from production, application and process engineering. From a strategic point of view, it has traditional requirements as much in its sights as it does innovative services. The commitment of experts with a precise knowledge of practical conditions is highly prized by our customers.

COST-EFFECTIVENESS: The use of special activated carbon products from CarboTech makes permanently reliable and cost-effective solutions possible. To achieve this, particularly with complex, demanding tasks, is the daily challenge for the experienced specialists from CarboTech.



WHY DO YOU NEED ACTIVATED CARBON FOR THE REMOVAL OF ORGANIC IMPURITIES?

CO₂ emission has the greatest negative impact on the observed greenhouse effect, causing approximately 55 % of the global warming (IPCC, 2005). Currently, it is a mission for the whole world to control and reduce the emission of CO₂.

CO₂ capture based on monoethanolamine (MEA) is one of the most mature chemical absorption methods of post-combustion technologies. There has been extensive research on CO₂ capture system based on MEA.

Chemical Fertilizers are essential for the agricultural sector due to the world-wide increase in demands of food supplies and the fertilizer industry mainly supply Nitrogen, Phosphorous and Potash. Urea, Ammonium Chloride, Ammonium Sulphate and Ammonium Nitrate contribute to the major portion of the nitrogenous fertilizers. Ammonia is an intermediate product during the production of Urea and it is produced by various technologies, one of which is by using the HALDOR TOPSOE, DENMARK process.

Over 80 % of the ammonia produced worldwide is currently utilized in fertilizers for food production, and these demands on the ammonia industry will only continue owing to the current trend of global population growth.

CO₂ REMOVAL PROCESS

During the production of Urea, CO₂ is eliminated from synthesis gas. The most common way applied for the removal of CO₂ are:

- Amine gas treatment
- Hot Potassium Carbonate solution treatment

Industrial plants commonly use MEA, DEA and MDEA as amines for the removal of CO₂ using the amine gas treatment method. Some industrial plants have a conventional design for the CO₂ removal based on the GV (Giammarco-Vetrocoke) dual activator process. This process involves a single-stage absorption and two-stage regeneration.

Carbon dioxide is removed by absorption in hot aqueous potassium carbonate solution containing approximately 30 wt% potash (K₂CO₃) partly converted into bicarbonate (KHCO₃). The solution further contains dual activators (Glycine and DMEA) to effectively improve the overall performance of the system. Vanadium oxide is used as corrosion inhibitor.

The use of activated carbon is recommended to remove the organic impurities and to maintain the CO₂ absorption. Also the activated carbon helps in the removal of organic impurities from the KS-1 solution (sterically hindered amine) in Carbon-Dioxide recovery unit.

CHOOSING THE PERFECT PRODUCT

CarboTech has year-long experience in supplying activated carbons for the Fertilizer Industry. Our know-how in this sector is enormous and we offer cost-effective products & solutions.

For choosing the most suitable product, you need to:

- Know the organic impurities that you would like to eliminate
- Select a suitable activated carbon
- Test the best suitable activated carbon

As we have wide references in the Fertilizer sector, the selection of the activated carbon would become quite easy and our recommendation is highly acceptable.

An agglomerated bituminous coal-based steam activated carbon is normally preferred for the Fertilizer Industry.

TECHNICAL SUPPORT

CarboTech doesn't only supply the activated carbon but also offers technical support regarding the product. In fact, this is a tradition at CarboTech to support the customer with the required technical information.

REFERENCES

CarboTech has been supplying to many Fertilizers locally and internationally since the last decade. The brand name 'CarboTech' is well-known in the Fertilizer sector for its quality, service and cost-effectiveness.

INTERESTED TO KNOW MORE INFORMATION?

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Contact us **NOW!**

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