

Char

BIOREFINING PROCESS SOURCE

Pyrolysis of biomass, either by combustion, fast pyrolysis or thermochemical liquefaction

DESCRIPTION

Char is that portion of biomass that was not fully reacted during pyrolysis. The composition of char and its applicability to the following product opportunities are functions of the original feedstock and the method of pyrolysis.

REPRESENTATIVE BIOBASED PRODUCT OPPORTUNITIES

BIOBASED PRODUCT	CLASSIFICATIONS	MARKET OPPORTUNITY	MARKET SIZE
Char	Solid fuel	Char is a product of incomplete combustion. It can be re-burned in kilns and boiler. ¹	Large
Activated carbon	Filtration agent	Activated carbon is heavily used in both liquid and gas filtration. Conversion of char to activated carbon can be performed with steam or acid. The activation process alters the porosity of the carbon, which is why it such a successful filtering agent: Its surface area ranges from 500-1500 m ² /g. ² Production of activated carbon from char is being investigated. ³	364 million pounds of activated carbon are sold annually.
Briquettes	Solid fuel for food production	Pyrolysis char has been successfully converted into charcoal briquettes in lab trials. ⁴	Large

REFERENCES

¹ DynaMotive. 2001. <http://www.dynamotive.com/biooil/technology.html> (27 April 2004).

² Activated Carbon: An Introduction. Norit Activated Carbon. [http://www.norit.com/files/brochures/NORIT_brochure AC_introduction.pdf](http://www.norit.com/files/brochures/NORIT_brochure_AC_introduction.pdf) (27 April 2004).

³ “University of Saskatchewan and DynaMotive to Research Activated Carbon Production from Pyrolysis Char Program Aims to Develop High Value Derivative Product and Enhance DynaMotive’s Value Proposition.” September 17, 2003. DynaMotive. <http://www.dynamotive.com/news/newsreleases/030917.html> (27 April 2004).

⁴ “DynaMotive Announces Completion of Successful Industrial Tests on Char by Leading US Briquette Manufacturer. Long-Term Supply Agreement Planned.” December 10, 2001. DynaMotive. <http://www.dynamotive.com/news/newsreleases/011210.html> (27 April 2004).