Mixing up the cenospheres market – EKO Export to bring new capacity on-stream

Alumo-silicate microspheres, or cenospheres, are an important raw material for a number of industries, but are mainly used as a lightweight filler for plastics. Polish manufacturer EKO Export foresees tightening global supply of these products, which are a recycling market for alumina and silica-containing fly ash.

Cenospheres

Cenospheres are low-density, alumino-silicate microspheres. They are hollow, lightweight, have a very hard shell and tend to have a good flow rate, due to their sphericity. Cenospheres are a recycled product made of the pulverised ash from coal-fired power stations.

The field of application for cenospheres is wide, from paints and coatings, to refractories, construction and automotive. It is the oil and gas industry, however, which appears destined to become the most dominant market for cenospheres worldwide.

The landscape of producers is fractured. There are many players, several of which are small and very specialised as to which industries and custom applications they serve.

One of the biggest challenges of the cenospheres and microspheres industry is the limited source of raw materials from coal-fired power stations. Furthermore, the quality of cenospheres and microspheres tends to be anything but constant. Quality control across countries and producers varies, which makes it challenging for users to find alternative sources and suppliers.

For this reason, the development project of EKO Export, one of the major players in the cenospheres market, is particularly interesting.

The company focuses on the import of raw materials from regions such as Russia, Ukraine and Kazakhstan, mainly for the European and US markets.

Currently, EKO Export has a drying and sieving plant in Biedko-Biala, Poland, from where it produces and supplies cenospheres to many countries with the assistance of German technical marketing and engineering company, Mine Freierfes.

In 2014, EKO invested in a greenfield project in Kazakhstan, near the country’s capital Astana, where it constructed a recycling-production plant for cenospheres, based on the latest technology and patented knowledge of EKO Export in this field.

The new cenospheres plant, the first of its kind in the world, is situated directly adjacent to a coal power station and is closed-circuit, as opposed to the traditional method of using settling ponds.

This arrangement makes the difference in terms of stable quality.

Another big motivation behind this new approach was to be climatically independent from the geographical circumstances of the plant’s location. A very modern, semi-automatic, high performance drying plant also forms part of the process.

As a result, EKO Export will be able to produce large quantities of cenospheres with higher purity and more constant, controlled and reproducible quality.

The conventional methods of cenospheres production often saw the possibility of organic contaminants entering the product stream, a problem which EKO Export has managed to solve due to its closed-circuit processing plant.

Another advantage of this new plant and process is the fact that the power station runs on higher level output in winter. It leads to larger supply volumes of cenospheres during this period of traditionally short cenosphere supply.

The plant was commissioned in the second half of 2014, and has been optimised since then. Volumes for trial shipments are expected to become available throughout the first quarter of 2015, and EKO Export believes that the new grade and added capacity will be welcomed by users of cenospheres, as global supply is projected to be tighter in the coming years.

Design image of EKO Export’s new cenosphere plant in Kazakhstan.

Alumo-silicate microspheres made from recycled fly ash remove the need for using mined minerals.