

Eco-friendly blowing agent

Kumyang introduces KY-ECO

Kumyang introduces an eco-friendly blowing agent, which is the world's first blowing agent that is naturally environmentally friendly after the foaming process. These substances are an integral part of shoe soles, mats for sports & children and various foams which can be used in every-day, industrial and medical applications.



KY-ECO has excellent physical properties for the production of environmentally friendly foams that are free of hazardous gases. © Kumyang

A blowing agent is a substance, which is capable of producing a cellular structure by means of a foaming process in a variety of materials that undergo a hardening or phase transition, such as polymers, plastics, and rubbers. They usually contain some gaseous and solid components, which are harmful to the environment. The issue is that gases such as ammonia and formamide result in an unpleasant odor, respiratory diseases or local skin and mucous membrane irritation.

These substances are an integral part of mats for sports & children, shoe soles and various foams, which can be used in every-day, industrial and medical applications.

To protect health and meet the ecological requirements, Kumyang has developed a new blowing agent KY-ECO which is the world's first blowing agent that is naturally environmentally friendly after the foaming process.

First, Cellcom KY-ECO contributes to carbon neutrality. Although Azodicarbonamide decomposes, it produces

about 11% of CO₂ and CO, the KY-ECO entirely makes nitrogen gas and it is CO₂ free.

Second, Cellcom KY-ECO can also reduce carbon emission during foaming process. Because the decomposition temperature of the KY-ECO (150°C) is lower around 50°C than that of Azodicarbonamide (200°C), it can accomplish the lower temperature processing and save energy, especially, electricity. According to one of PVC floor-covering producers in South Korea, if processing temperature is lower around 50°C, it can save 20 % of electricity and result in about 13 % reduction of CO₂ emission as well.

Third, Cellcom KY-ECO is an eco-friendly blowing agent. It is shown from SGS analysis that 211 chemicals of SVHC candidate in ECHA are not detected in the EVA foam with irradiation cross-linking using the KY-ECO as blowing agent. The KY-ECO also shows free of hazardous gases such as ammonia, formamide and sulfur dioxide. The result of the analysis for hazardous gases of KY-ECO

in comparison with two representative blowing agents (ADCA and OBSH) is done.

Cellcom KY-ECO is in pellet form, the carrier resin of which is EVA and the active blowing agent content is 50%. KY-ECO makes no powder dust on use and is evenly dispersible in the polymers using most conventional mixing equipment. It is also able to reduce the loss of chemicals during processing. As KY-ECO only generates nitrogen gas, this can be useful for the manufacture of a variety of eco-friendly foams such as EVA shoe soles, mats made of EVA and rubbers using conventional methods. Cellcom KY-ECO has been recently used for EVA puzzle mats and neoprene sports & yoga mats free from ammonia and formamide gases. ■

About Kumyang

Kumyang has become a global leader in the field of chemical blowing agents with constant innovation and a challenging spirit since the company's founding in 1955. The company is providing new and differentiated products and services based on 2,000 sales networks in 78 countries around the world.

Kumyang continues to step towards a better future from the world's first eco-friendly blowing agents to hydrogen fuel cells.

Kumyang is taking another leap forward as a global chemical company that manufactures and distributes a comprehensive range of eco-friendly chemical materials to create a prosperous future for customers and enhance customer satisfaction based on accumulated technological advancement and production know-how. For more information, visit

www.kyc.co.kr / www.ky-europe.com