Technology to recycle all type of plastics without using water

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Traditionally, plastic recycling processes involve using a lot of water. In order to avoid this waste, Ak Inovex from Mexico developed a new green technology that doesn't require liquids, and has the capacity to process materials such as styrofoam, polystyrene and ABS (Acrylonitrile butadiene styrene) using the same type of customizable machinery.

The technology developed by Marco Adame, founder of Ak Inovex, can process more than 90 percent of any type of plastic, avoids water waste and reduces production costs by half without reducing the quality of the pellets (small beads of recycled plastic) by avoiding stages with severe changes in temperature.

Marco Adame said than the original process of obtaining recycled beads involves washing and then grinding plastic containers. However, this type of plastic has the distinction of being hygroscopic (when it comes in contact with water it retains moisture at a molecular level), so it has to be dehydrated so it can be crystallized; this involves applying heat at 180º C and then cooling the material with water.

However, the development of AK Inovex performs this process without water, so it goes directly to the formation of recycled beads. As a result, the energy consumption is reduced by half, plus the physical space required to perform the operation is reduced because the system is smaller. Similarly, the pellets are of better quality, which makes the recycling process more profitable.

"Ak Inovex has a pending patent registration for the three technologies that integrate the development, which are responsible for cooling the plastic through contact with special walls and forming the plastic beads," the founder of the company explained.

The advantage of this technology is its ability to process any type of plastic, such as styrofoam, polystyrene, PET and ABS; the difference lies in the mechanism, because there is a special piece for each type of material. The production capacity of plastic beads is two tons and the team is currently working on increasing it to ten.

For next year, the company wants to change its business strategy and add an ecological washing machine for plastics that uses a special

biodetergent, which will reduce the cost of operation even more.

Marco Adame commented that during their participation in the Cleantech Challenge Mexico, a contest to promote the development of green companies, he had contact with the ALINSA group, which is engaged in the manufacture of environmentally friendly cleaning products using biodegradable chemicals.

After the competition, the two companies started talking and joined efforts with the aim of integrating the ecological washing machine system using degradable plastic substances in less than 28 days without affecting the environment, hence replacing lye, which is the current substance used for washing the materials.

Provided by Investigación y Desarrollo

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