

Cool bottles and cans without ice or electricity through the power of Urea

Everywhere Cool technology works with a solution of these salts in water
The mixture is cooled in seconds reaching temperatures close to 0°C

While Paola Fatás chemical engineer working on his thesis, he could not take his mind off the idea of undertaking. "I did not know if it was investigating finally reach the people," he recalls. She wanted to "change things" and spent the best option to create their own company. In his role as very interesting doctoral acquired skills that have later applied his entrepreneurial stage. "Incredibly a thesis serves more things to investigate," he says. So he learned to seek resources, distinguish relevant information or know where to begin their work.

But his desire might have come to nothing if one day I had not had an idea. And not a clue either, but something "that did not exist" in the market. It was a very hot day and Fatás had decided to make a bike path. When I was thirsty he was to pull the leading beverage can, but could not take it because it was hot. At that time he decided to investigate a system that would allow to cool a drink in seconds anywhere, anytime, without ice or electricity.

He has succeeded. His company, Cool Everywhere, 'startup' from the University of Zaragoza, just released Aisber. It is cooler cans and bottles that reduces the temperature 20° drink in record time. You can use it anytime, anywhere. Just open it, press it and automatically put the package to 0°. Then, keep the soda inside and in 10 minutes, is ready. The mixture is kept cool about 30 minutes. The product reminds wine coolers, with the difference that "does not require the use of the freezer".

Aisber is formed on the inside for bags with separate cavities, containing an aqueous solution and salts. Pressing on the cavity containing liquid, the seal separating both is open, producing the mixture of active cooling components. Dissolving the compounds in water requires energy, which is absorbed



from the outside as heat, rapidly reducing the temperature. This type of process where the energy of the final system is greater than the initial system are called "endothermic" and so far have not been implemented in beverages, although they are common in sectors such as drug.

The key to the technology developed from scratch by Fatás, is urea. The system is based on the dissolution of a solid in water and this chemical containing all necessary to drastically reduce

the temperature properties. Used in various applications, from fertilizers to diesel, urea has "a high positive enthalpy value". Or what is the same, when dissolved in water absorbs the energy as heat and cooling occurs.

Urea also is safe, so that it does not generate toxicity. It also has a "high solubility", allowing temperatures of 0°.

Another important aspect is the packaging of the product itself. Cardboard cover can take Aisber folded without occupying space and preventing them from being accidentally activated. Once powered, its hexagonal shape, can be adapted to the shape of the bottle or can.

Cool Everywhere has obtained the European patent system, the Spanish utility model and now locks in industrial design. The company, which has already put on sale the product on their website and in some sports shops, is negotiating with major distributors. "The 'feedback' is good," says Fatás. Aisber is single use, and a 'pack' 12 coolers costs 42 euros.

