

Cleaning agent safely locked, thanks to igus plain bearing in child safety device

Innovative student projects such as "EMKindersicherung" is supported by igus as part of the "young engineers support"

Detergents in the home pose a real danger to many toddlers. Therefore, a team of seven students of TU Darmstadt, supported by igus, has now developed a child safety lock for cleaning agent bottles. The device is simply screwed onto the bottle. Access is ensured via an app. An iglidur plain bearing from igus ensures the lubrication-free and reliable locking mechanism in the child safety lock. The idea also convinced the jury at the Cosima competition, a student competition for microsystems, where the team took second place.

The 94,000 calls made to the Poison Information Centre for burns and intoxications of children every year show that household cleaners constitute a real threat. To prevent these accidents, seven students of the TU Darmstadt at the Faculty of Electrical and Information Technology have developed the EMKindersicherung. The device allows personalised access to household chemicals via a smartphone app. The idea and implementation of the project not only convinced the young engineers support (yes) of igus, which promotes innovative technical projects of students, but also the jury of the 2017 Cosima Competition. The student competition in the field of microsystems technology awards applications that improve the interaction between humans and technology in everyday life. The Darmstadt team secured second place with its child safety device.

igidur plain bearing ensures secure access

The students' child safety device is 3D printed for the most part and consists of a housing which is placed over the lid of the cleaning agent bottle and engages with cover plate under the plastic ring of the bottle. Using a lever the cover plate can be moved manually and the device can be secured. The closing mechanism consists of an electrothermal actuator. Its current feed heats and deforms so that the safety device opens and can be removed from the bottle. The actuator is attached to a pin. By turning the lever the pin

mounted with an iglidur plain bearing engages and prevents an unauthorised opening. "We approached the young engineers support from igus with our project because we were looking for a bearing that has a low coefficient of friction and that is resistant to acids and alcohol," explains Ida Blum from the development team of the EMKindersicherung. "In addition, the bearing must withstand temperatures of up to 125 degrees Celsius due to the heating of the actuator. That's why we chose iglidur A350." The plain bearing material is UV-resistant and also suitable for use in medical technology as well as in the food and packaging industry.

The young engineers support from igus promotes innovative projects

Innovative projects such as EMKindersicherung are supported by igus as part of the "young engineers support" programme. The initiative supports young pupils, students and inventors in the development and execution of their technical projects. Further information on yes can be found at www.igus.eu/yes.

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ABOUT IGUS:

igus GmbH is a globally leading manufacturer of energy chain systems and polymer plain bearings. The Cologne-based family business has offices in 35 countries and employs around 4,150 people around the world. In 2018, igus generated a turnover of 748 million euros with motion plastics, plastic components for moving applications. igus operates the largest test laboratories and factories in its sector to offer customers quick turnaround times on innovative products and solutions tailored to their needs.

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Caption:



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A lubrication-free iglidur A350 plain bearing provides a reliable closing mechanism in the igus-supported cleaning agent child safety lock. (Source: igus GmbH)