

PRESS-ON EPOXY

Help us make the epoxy feel the pressure



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Technological Offers type

[Technological solutions](#)

Research and innovation areas

- [Climate, Energy and Mobility](#)
- [Industry, Materials and Circular Economy](#)

ODS



Available from: 2019

Where?

ME-RG: Machine Engineering Research Group

Keywords: | [Materials](#) | [resins](#)

Brief description of the solution and the added value it delivers

Improves the fracture energy of epoxy resins by means of mechanical processes.

Description of the technological basis

Epoxy resins have excellent mechanical properties, they are inexpensive and are easy to apply compared to other plastics. However, their fracture energy limits them in certain applications. With Press-On Epoxy, we propose a simple, low-cost method for improving the fracture energy of epoxy resins, without it having a negative effect on their other mechanical properties.

‘It is a purely mechanical process; it does not require chemical modifications or the addition of nanoparticles’

Business needs / application

General:

- Currently, improving the fracture energy of epoxy resins requires the use of ‘fillers’ that significantly increase the final price or chemical modifications that diminish some of the resin’s other properties.

Transport:

- One of the greatest challenges in this sector is weight reduction. Therefore, consideration is being given to replacing metal parts with lighter materials. However, when it comes to using plastics, fracture energy is a problem.

Electronics:

- The problems of reliability with printed circuit boards (PCBs) are due, principally, to cracking in epoxy resins caused by poor adhesion to the copper.
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Competitive advantages

- Large increase in the fracture energy without diminishing other mechanical properties.
 - Low-cost and does not require chemical modifications or the addition of nanoparticles.
 - The process does not require the epoxy resin production line to be modified. It is an intermediate process in the current value chain.
 - The use of epoxy resins is not only limited to transport and circuit boards; its field of application is very broad.
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Past performance references

- Triboblend spin-off
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Protection

- **Patent:** 'Method for mixing and delamination, deinterlacing, dispersion and adhesion of nanoparticles.' ES P201831123.
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Stage of development

CONCEPT

RESEARCH

LAB PROTOTYPE

INDUSTRIAL
PROTOTYPE

PRODUCTION

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