

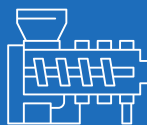
Chemistry without solvents

Mechanochemistry uses mechanical force to drive chemical reactions. With techniques like grinding and milling, mechanochemistry gets rid of solvents, reducing the overall environmental impact, especially by minimising the amount of waste and unnecessary by-products.

Previously overlooked by most industries, mechanochemistry now experiences a resurgence thanks to its greener approach to synthesis. We apply techniques like ball milling and extrusion to the synthesis of different Active Pharmaceutical Ingredients (APIs)



Ball milling



Extrusion




Resonant acoustic mixing




...and much more!

Find out more!*

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*Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or HADEA. Neither the European Union nor the granting authority can be held responsible for them.

Our partners

Coordinated by:



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Impactive

Mechanochemistry towards greener pharmaceuticals

www.mechanochemistry.eu



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Our project

We gather experts from 17 institutions in academia, SMEs and industry, including leading pharma companies like Novartis and Merck.

Three key targets

Our objective is to demonstrate the viability of mechanochemistry to manufacture key products and intermediates for the pharmaceutical industry.

For this reason we tackle the production of three API families:



Antidiabetics



Anticancer



Antihypertensives

Working with industry

We count on key partners in the pharmaceutical industry, to ensure efficient technology transfer and an early adoption of the mechanochemical solutions.



Scaling up solutions

We want to scale up mechanochemical processes of API production, to reach productions up to 0.5 kg. This will put our techniques in a TRL 5, ready for the next step: test them in a pilot manufacturing plant.

In numbers

€7.7 million

17 partners

11 countries

4 years



Scan this to view our animated video!

Reducing industry's pollution (and costs)

-85%
CO₂ & ecotoxicity

-12%
production costs

Recent data published by our consortium members shows that switching to mechanochemistry for the production of a single API can reduce ecotoxicity and carbon emissions by over 85%, while also reducing the production costs by 12%