

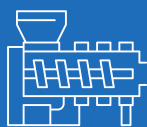
Chemistry without solvents

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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Our partners

Coordinated by:



UNIVERSITÉ
DE MONTPELLIER

Partners & Associated Partners

Radboud Universiteit, Université Catholique de Louvain, TalTech, BAM Institut, RWTH Aachen University, Max Planck Institute für Kohlenforschung, Trinity College Dublin, Technion, Center for Colloid and Surface Science, IST-ID, DES Solutio, Agata Comunicación Científica, SATT Axlr, HES-SO, Merck, Novartis

Impactive

Mechanochemistry towards greener pharmaceuticals



Co-funded by
the European Union

www.mechanochemistry.eu

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

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%