



ecôfunc
building green excellence

Mechanical recycling additives and technologies

1. The need

Mechanical recycling is a complex ensemble of technology and chemistry that allows a wide variety of everyday plastics to be used in new articles and thus close the loop. With EU legislation becoming more stringent, recyclers would benefit from new chemistries or technologies that could either dignify PCR of poor quality or make the recycling process more convenient.

2. What could be a strong fit

We would like to speak with innovators developing solutions addressing one or more of these pressing challenges:

- Easy-to-wash or easy-to-empty solutions that allow packaging contaminated by silicon products, oils or paints to be washed more effectively during the recycling process
- Additives to act as chain extenders to counteract depolymerization triggered during the recycling process and keep the mechanical properties to a high standard
- Melt flow modification in polyolefin through the use of a crosslinker or chain extender to broaden the application range of recycled resins
- Additives that can decompose the smell of PCR (odor scavengers)
- Additives or technologies that can decolorize previously colored plastics
- Technologies that make the mechanical recycling process more convenient (from the processing point of view or from the economical point of view)

3. Maturity we can work with

We would like to explore solutions that have had at least a laboratory-scale or pilot-scale proof of concept. While all solution-holders may apply, practical data will be given a higher rating.

Higher TRL solutions are appreciated, and we consider TRL 4 the starting point.

4. What will help us evaluate fit

The best way to evaluate fit would be to see some or all the below points being showcased in the pitch:

- Background of the invention
- Background of your organization
- Short explanation of why you believe that your product could improve mechanical recycling
- Data (graphs, pictures, tables...) proving your claim
- Additional materials that could strengthen your claim are welcome

5. Less relevant at this stage

Avient is a plastic solution provider and a formulator. At this stage, our attention will mostly be caught by additives, chemical components and formulations that could be added to our portfolio of masterbatches. We are less interested in mechanical recycling technologies that need a full-scale recycling plant to be proved.

We are less interested in AI tools and more in the chemical side of things.

We are not looking for solutions that employ purely chemical recycling, but we can consider innovative blends of techniques.

6. What a match could lead to

A match could lead to your organization being invited to pitch to a larger corporate audience, and to deeper discussions (a CDA may be required). Access to our state-of-the-art laboratories and pilot mechanical recycling plant could be provided to prove the efficacy of your product in our well-established protocols. Finally, after a preliminary internal validation, joint R&D and customer sampling activities may follow.