

A new generation of PFAS-free polymer processing aids

1. The need

Fluorinated additives and polymers have long been known to provide outstanding performances in the thermoplastic industry for various functions.

Key functions include processing aids, flow enhancers, lubricants, anti-scratch additives, anti-dripping systems for flame retardants, water and oil repellents, and more.

Due to increasing regulatory pressure in Europe and globally, the industry is actively looking for alternatives to PFAS-based additives. The most technically challenging replacement remains polyolefin processing aids for shark-skin control, because few non-fluorinated technologies provide the same combination of wall slip, thermal stability, low dosage, reduction of gross melt fracture, reduction of die buildup, higher throughput and broad resin compatibility.

2. What could be a strong fit

We are looking for innovative and out-of-the-box solutions to replace conventional PFAS-containing products in the field of polymer processing aids. We already have a portfolio of existing solutions, but we would like to try your solution next.

The solution you are developing:

- May be a single additive or a formulation
- May be a solid or a liquid
- Should provide benefits as a polymer processing aid: shark skin decrease, melt fracture decrease, die buildup prevention
- Should be compatible with the use in polyolefin films
- Should prove efficacy at reasonably low dosage
- Should be suitable for food contact applications (or its nature and safety profile should make food contact a likely use, after certification)

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 act as an effective polymer processing aid for polyolefin films
- Data (graphs, pictures, tables...) proving your claim. We especially appreciate seeing capillary rheometer data, pictures for die build up and melt fracture, blown film production parameters and pictures, and contact angle data in different media.
- 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 AI tools and more in the chemical side of things.

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 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.