

SABIC's input to the public consultation Comments to Annex XV PFAS restriction proposal

to:

Question number 6: Missing uses –. Polymeric PFAS is used as processing aids for manufacturing of metallocene linear low density polyethylene (mLLDPE) granules, including LLDPE films for packaging applications.

Executive Summary

The use of poly(vinylidene fluoride-co-hexafluoropropylene), hereinafter PVDF-HFP, has a key functionality as polymer processing aids (PPAs) in the production of metallocene linear low density polyethylene (mLLDPE) granules including (m)-LLDPE films for packaging applications.

In scope are (m)LLDPE materials with a melt index below 1.5 g/10 min @ 2.16kg/190 °C and densities from 0.90 up to 0.94 g/cm³.

Manufacturing of (m)-LLDPE granules is not possible without PVDF-HFP because the surface of the extrudate and hence the granules will become rough due to melt fracture. After quenching this extrudate in water and pelletizing, the granules with a rough surface stay wet which subsequently will negatively influence the processing of the granules into its final product, i.e. blown film. The properties of the blown films made with these granules will be adversely affected, poor optics and less good thickness uniformity.

The Society of Environmental Toxicology and Chemistry publishes an Environmental Toxicology and Chemistry and Integrated Environmental Assessment on fluoroelastomers (June 2022) , provide new evidence that PVDF-HFP meets the criteria to be considered Polymer of Low Concern (PLC). In that report, they state that emissions during the use phase of final articles are negligible, because PVDF-HFP is intermingled amongst the polymer. The emissions in the waste stage depend on the pre-treatment method. Data shows

that fluoropolymers are stable and not expected to transform to dispersive nonpolymeric PFAS.

Up to now, potential alternatives are not technically feasible as substitutes for manufacturing of (m)-LLDPE granules with a smooth surface. Furthermore, they are not currently commercially available and approved for food contact applications.

More time is required to substitute PVDF-HFP to keep high yields and good product quality for thin film plastic extrusion.

Therefore, we request a **5-year derogation** for the use of poly(vinylidene fluoride-co-hexafluoropropylene) as processing aids for manufacturing of (m)-LLDPE granules including (m)-LLDPE films for packaging applications.

Substance information

Substance Name: poly(vinylidene fluoride-co-hexafluoropropylene)

Synonyms: PVDF-HFP

Molecular formula: (C₃ F₆ . C₂ H₂ F₂)_x

EC Name: 618-470-6

CAS number: 9011-17-0