



PET EUROPE
PRODUCERS' ASSOCIATION

Petcore Europe - Depolymerisation WG

Webinar 19th October 2023

PET EUROPE FI Technology - Draft

- ❑ PET EUROPE Members are working on a Chemical Recycling Technology known as Flake injection (FI).
- ❑ The FI technology takes PET post-consumer flakes and feeds them directly into a PET manufacturing plant.
- ❑ The flakes are depolymerised to low polymers between 3 and 15 repeat units (RU's).
- ❑ The low polymers are further polymerised in the closed process to around 150 RU's as final PET polymer.
- ❑ Importantly during the process, the PET flakes are subjected to a very vigorous cleaning/decontamination process and when these processes are completed the resultant polymer is at virgin quality.
- ❑ Key point - due to the FI process, FI PET is a much higher quality than Mech Recycled PET.



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- ❑ The FI process typically takes several hours whilst holding the polymer at very high temperatures and very high vacuum.
- ❑ These severe conditions result in the removal of all volatile substances and any non-volatile substances are encapsulated and cannot easily migrate from the polymer matrix.
- ❑ The Flake Injection Process is recorded as a novel technology process as is described in regulation 1616/2022.
- ❑ All Novel Technology processes must be examined by the European Food Safety Authority (EFSA) to ensure they are safe and receive a positive opinion and the PET manufacturing industry is gathering data.
- ❑ To facilitate the data gathering process PET EUROPE has formed a multi-partner common interest group which meets on a regular basis.



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Important Points to Note:

- ❑ PET is safely recycled in various ways using Mechanical and Chemical depolymerisation technologies.
- ❑ The PET FI Process and PET Mech recycling are complementary & in principle can use the same feedstock material.
- ❑ There are a significant number of suppliers of suitable feedstock for Mech recycle and FI processes (see EFSA opinions).
- ❑ Other PET Chemical depolymerisation processes can handle a much lower quality of PET feedstock and through the PET manufacturing processes, improve this low quality to near virgin status.

It is vitally important that The EU recognises that PET can be safely depolymerised and recovered to **virgin quality** simply and efficiently and this will support sustainability of resource for Europe.

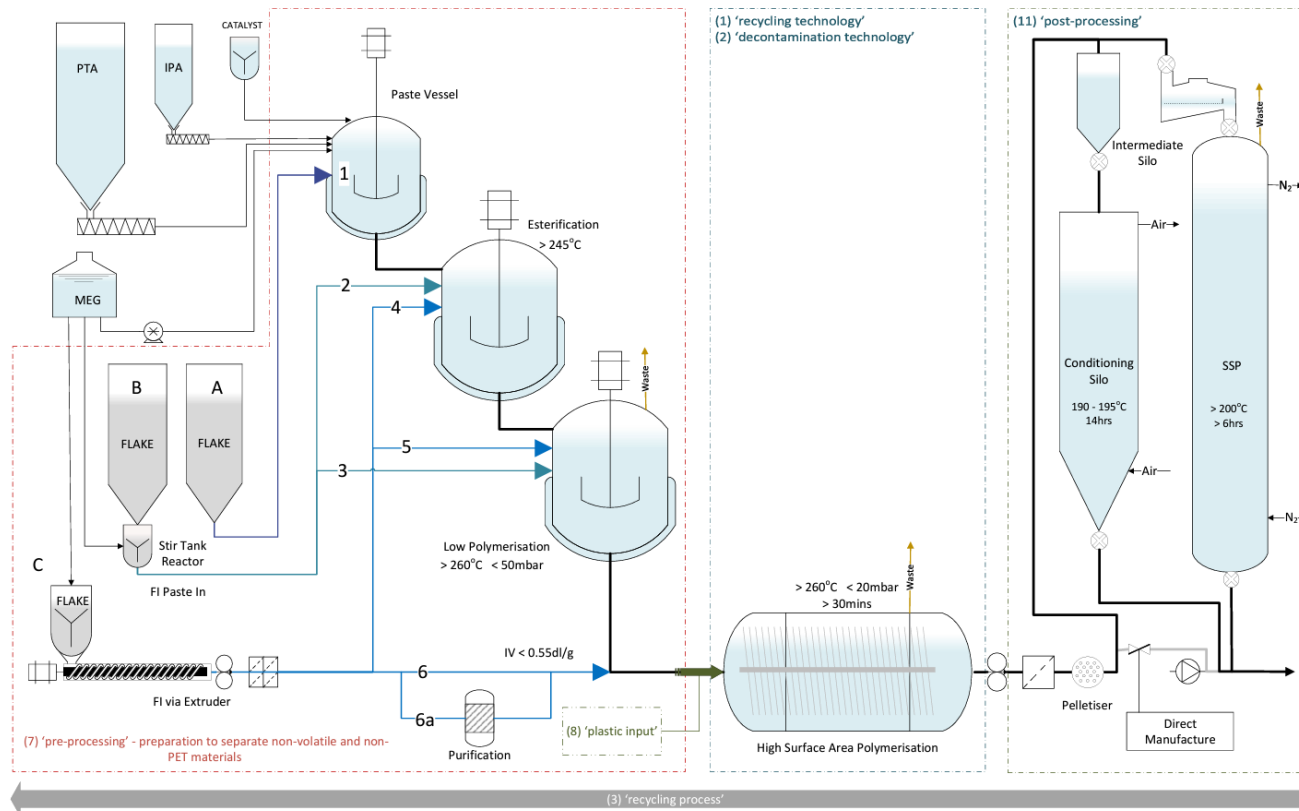


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Key:
Flake – Pre-processed PET material
(Post Consumer, Post Industrial, Pellets, Regrind)

FLAKE INJECTION – PET Production Process



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About PET EUROPE

PET EUROPE is a non-profit trade association based in Brussels, Belgium. It represents the European PET resin producers and an industry with a capacity of 3.5 million tonnes of Virgin PET (vPET) per year. European Terephthalic Acid (PTA) producers – the major PET feedstock – are associate members. PET EUROPE supports sustainable growth of PET manufacturing in Europe.



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Thank You