

Recycling: Registration form 5: Novel Technology

Fields marked with * are mandatory.

Section 1: General information of the applicant

* A. Name and Surname of the contact person (s) *

Michael Roth

* B. Contact information (address) of the contact person (s) *

Gewerbegebiet Ihne 2 / DE-58540 Meinerzhagen

* C. E-mail address of the contact person (s)*

michael.roth@fernholz.biz

* D. Indicate the decontamination installations linked with the current technology (in case applicable)

Extruder 14 (Meinerzhagen site) / Extruder 18 (Schkopau site) / Extruder 19 (Schkopau site)

* E. Indicate the facilities linked with the current technology (in case applicable)

Site DE-58540 Meinerzhagen / Site DE-06258 Schkopau both in Germany

Section 2: Registration of Novel Technology

* 1. Name of the developer of the novel technology (in case different from section 1A)

Michael Roth

2. Address of the facility (in case different from section 1B)

Gewerbegebiet Ihne 2 / DE-58540 Meinerzhagen

3. Contact (s) Person (ex.name/e-mail/role in the organisation, to be completed only in case different from section 1B)

Michael Roth / michael.roth@fernholz.biz / CEO

* 4. Name of the novel technology

post-consumer polystyrene (PS) in food packaging by using recycle PS behind a functional barrier of virgin PS in an ABA sheet structure

* 5. Summary of the Novel Technology (up to 300 words)

The company Fernholz, Meinerzhagen Germany, introduce post-consumer polystyrene (PS) in food packagings. The recycle is used in PS behind a functional barrier of virgin high impact polystyrene (HIPS) in an ABA sheet structure. The functional barrier is applied in a co-extrusion process. The ABA sheet has 60% post-consumer recycle content in the core layer with 10% of virgin HIPS as functional barrier on both sides. The overall post-consumer recycle content is 48%. The overall thickness is >0.65 mm. The intended application of the sheet is the production of cups for yoghurt, etc. for storage of maximum 40 days at 8 °C.

The Fernholz process includes the following process steps:

- step 1: sourcing suitable post-consumer PS material
- step 2: ABA sheet extrusion with vacuum degassing

The functional barrier properties of the virgin layer was tested in a worst-case scenario by used of contamination of the core layer (B) similar to a challenge test. Within this challenge test the whole sheet manufacturing process was investigated by use of artificially introduced model substances within a worst-case scenario with initial concentrations in the washed flake between 390 mg/kg and 1410 mg/kg. The manufactured sheet was further investigated in migration experiments (simulants 10% ethanol and 50% ethanol at 20 °C and 40 °C for 10 d as well as migration kinetics with 360 kinetic points for 10 d at 40 °C. In conclusion, it was shown that high concentrations of artificially introduced contaminants into the feedstock material lead to a migration of the ABA multilayer sheet far below of 10 µg/kg. This is due to the cleaning efficiency of the ABA manufacturing process as well as due to the functional barrier, which reduces significantly the migration.

* 6. URL locating the reports to be published in accordance with paragraph 5 and Article 13 (4) .

<https://www.fernholz.biz/nachhaltigkeit/efsa-anmeldung/>

* 7. Names and addresses or numbers of any recycling facilities at which the development of the technology is foreseen to take place

Site DE-58540 Meinerzhagen / Site DE-06258 Schkopau both in Germany

Please upload your file(s) related to field 7, in case you have a list (e.g. excel/word/pdf) of contact information to be provided.

* 8. Please include a detailed report, containing the information required under Article 10(3) (a)-(g)

please find the upload

Please upload your file or dossier referred to field 8. When the information is contained in several files, please provide them together as a dossier contained in a ZIP file.

IMPORTANT:

*The information in field 1-7 (except information in field 3) will be made public in the Union Register

**You need to notify the information included in this form to the competent authority

Contact

Apostolos.KAPSALIS@ec.europa.eu