

AIMPLAS PLASTICS TECHNOLOGY CENTRE

# RECYCLING

# INNOVATION in PLASTICS

At AIMPLAS, we work to meet the main challenges of companies applying the circular economy model by turning waste into valuable resources thanks to recycling.

We provide customized solutions, according to the needs of each company, through the following technologies:

### **MECHANICAL AND CHEMICAL RECYCLING TECHNOLOGIES**

Grinding, washing, sorting by density during washing and elutriation, zigzag and centrifugal sorting by size and density, NIR optical sorting, triboelectrostatic separation, additivation processes and reprocessing of thermoplastic materials for **high value-added applications.**  **Depolymerization** by solvolysis, solution/precipitation and delamination of multilayer structures, and biological (microbiological and enzymatic) and thermal cracking through pyrolysis and pre-treatment using microwaves.



### **TECHNOLOGICAL SOLUTIONS**

**Recovery and recycling** of plastic materials.

Fibre recovery.

Obtaining substances and products of interest for industry.

Fuel production.



### CRITICAL WASTE AND WASTE STREAM RECYCLING

Assessment of complex waste, optimization of the mechanical or chemical recycling process and waste stream assessment (resulting materials and products)

Highly degraded waste.

Mixed waste streams of different materials.

Multilayers and products with coatings.

### Reinforced materials.

IMPROVEMENT OF RECYCLING PROCESSES AND THE MATERIAL OBTAINED **Selective sorting** of complex materials: mixed waste, mixed plastics, very dirty and degraded plastics (marine litter), thermoset plastics, tyres, etc.

**Reduction and reuse** of manufacturing scrap and rejects.

**Optimization of recycling** processes and the properties of recycled plastics.

Improving the properties of recycled plastics through additivation and compounding.

Obtaining and developing compounds from **recycled fibres and fillers.** 

Search for new applications for **recycled plastics** (e.g. food packaging, automotive and construction industries).



### ELIMINATION OF CONTAMINANTS AND ODOURS

**Decontamination of recycled plastics** to remove/reduce inherited substances and odours through different processes such as additi-

Technical and legal advice on using

recycled plastic products in contact

with food in the **EFSA authorization** 

vation, use of oxidizing agents, supercritical fluid extraction processes (sc-CO2) and biological treatment.



## USE OF RECYCLED MATERIALS IN CONTACT WITH FOOD

Control and characterization of **recycled raw materials** (e.g. fluidity index, density, impurities).

Test laboratory accredited by **ENAC** in accordance with UNE-EN ISO/ IEC 17025 standard to test recycled plastic materials in accordance with European standards.

Audits on the use/content of recycled material.

Advice on compliance with product legislation on the use of **recycled material.** 

process and the development of products with functional barriers.

**EuCertPlast** audits for plastic recycling plants.

Ecolabelling of recycled products (e.g. **Blue Angel**, Distintiu de Garantia Qualitat Ambiental).

Advice on packaging recyclability based on ISO 18604:2013 and **UNE-EN** 13430:2005.

**Technological validation of the recyclability of PE films** in accordance with RecyClass. Product recycling content audit (RecyClass).



**COMPLIANCE WITH** 

**REGULATIONS AND** 

**LEGISLATION** 

## TRAINING

Face-to-face and online courses of different duration. **Customized courses on recycling** are also offered to meet the specific needs of each company. Webinar on using recycled plastic in food-contact packaging.



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