



Product Stewardship and Hazardous Substance Management

Petkim manages hazardous substances through its Product Stewardship approach by integrating regulatory compliance, product safety and research & development activities throughout the product lifecycle. The Company evaluates opportunities to develop and introduce safer alternatives where required by evolving regulations, customer expectations and technical feasibility.

Product Compliance

Petkim conducts product compliance studies for products supplied to domestic and international markets. Product formulations developed through R&D are evaluated for compliance with relevant national and international chemical regulations, particularly EU REACH, UK REACH, and KKDIK, as well as international conventions such as the Rotterdam, Stockholm, and Minamata Conventions. Product-specific compliance assessments and formulation reviews are performed before commercialization. Within its Product Stewardship framework, Petkim evaluates opportunities to reduce the use of hazardous substances by assessing alternative materials and technologies through product compliance and research & development activities. These evaluations are driven by regulatory developments, product safety considerations and technical feasibility.

Research and development activities support product safety and regulatory compliance by evaluating alternative materials, additives and catalyst technologies where appropriate. Current R&D activities include:

- **Development of PFAS-Free Polymer Processing Aid (PPA) Masterbatch Grades**

Regulation (EU) 2025/40 on packaging and packaging waste, dated 19 December 2024, was published in the Official Journal of the European Union on 22 January 2025. The Regulation includes restrictions on the use of PFAS substances in food contact packaging materials, which are set to become applicable on 12 August 2026. PFAS are highly persistent chemicals that can accumulate in the environment and living organisms, and long-term exposure has been associated with potential adverse effects on human health. In response to these upcoming regulatory requirements, we initiated a R&D project to develop a PFAS-free Polymer Processing Aid (PPA) Masterbatch.

- **Next-Generation Catalyst and Pilot Reactor Development Project for Polymer Process**

Through this R&D project focused on polypropylene (PP) and high-density polyethylene (HDPE) production, we aim to develop polymer production processes at pilot scale and evaluate the industrial applicability of sixth-generation catalysts. Within the scope of the project, we established a fully automated pilot reactor infrastructure and commissioned systems enabling the controlled feeding of different raw materials, achieving the targeted polypropylene product properties with existing catalysts. In addition, we conducted production trials using next-generation, phthalate-free catalysts that are environmentally accepted by industry. The project, which was initiated in 2024, is targeted for completion in 2026.



Monitoring Regulatory Developments

Petkim continuously monitors developments in national and international chemical regulations and incorporates relevant regulatory requirements into product development, compliance and product stewardship activities.

R&D Resources

Dedicated research and development resources are allocated to projects supporting product safety, regulatory compliance and the evaluation of safer alternatives where technically feasible.