Testing of plastics and recyclates

A large percentage of all plastic waste produced worldwide is incinerated, dumped at landfill facilities or ends up in the environment. To conserve resources and protect the environment, a circular economy with plastic recyclates is therefore essential. The EU Packaging and Packaging Waste Regulation (PPWR) requires almost all packaging to be recyclable and demands gradually increasing minimum percentages of recyclates. At the same time it is necessary to ensure that no impurities/pollutants are introduced into material cycles and that all regulatory/certification requirements are met. Together with you DEKRA creates test concepts that match your individual requirements - for a circular economy free from hazardous substances!

Chemical safety

All recyclates and plastics must fulfill the EU regulations depending on the field of application, e.g.:

- REACH (Annex XVII, SVHC list)
- POP (Persistent Organic Pollutants)
- RoHS (Restriction of Hazardous Substances Directive; electrical devices)
- LFGB (German Food, Commodities and Feed Code)
- Cosmetic Products Regulation
- MDR (Medical Device Regulation)

Even if the end product is unknown, it is a key competitive advantage to identify hazardous substances for potential applications:

- Per- and polyfluoroalkyl substances (PFAS)
- Plasticizers (pthalates, SCCPs/MCCPs)
- Flame retardants (brominated, organophosphorous)
- Catalyst traces
- Emissions of hazardous substances, VOC measurements
- Migration of hazardous substances
- Textile parameters according to REACH Annex 17
- GADSL substances list

In addition we support you with our expertise in the area of certifications, e.g.:

- Halogen-free (e.g. IEC 61249-2-21, DIN EN 60754-1)
- Blue Angel certification
- C2C (Cradle-to-cradle)
- Geoplastics/textiles

We can offer you the right concepts, advices and analyses for all of these topics - benefit from our individual test plans for your product.

Individual test plans

A widespread problem with recyclates are the batch-dependent fluctuations of their properties. We work with you to identify key parameters for your product quality and develop **customized, risk-based test plans.**

This means that the critical parameters can be tested as soon as the goods are received (regrinds, pellets, flakes, granulates or agglomerates) to recognize problems at an early stage and take appropriate actions. Less critical parameters are checked randomly at longer intervals.

Finally the full test, e.g. once per year, proves the compliance and absence of harmful substances for your end product.

This way you ensure a **high standard of quality** and **reduce your costs and workload** to a necessary minimum.

Everything from one single source

In addition to chemical tests, in close collaboration with our materials laboratories, all the necessary **mechanical and physical tests** can be covered, e.g.:

- Characterization and classification (e.g. DIN EN 1534x, DIN SPEC 91446)
- Material identity and comparisons (DSC, FT-IR, TGA...)
- Compression and bending tests (DIN EN ISO 178), hardness tests (DIN EN ISO 48), tensile tests (DIN EN ISO 527-2)...
- Burn rate (DIN 75200), viscosity index (DIN EN ISO 307), thermogravimetry (DIN EN ISO 11358-01)...

Complex interdisciplinary enquiries are also no problem due to our combinable service of chemical analysis, materials technology and material testing, e.g.:

- Suitability of materials for special applications
- Investigations to estimate recyclate percentages
- Cases of damage with plastics/recyclates

Use the DEKRA plastics and recyclates check: For a circular economy free from hazardous substances!

Other services you can benefit from

As a central and international DEKRA laboratory service provider, our experts offer an interdisciplinary range of tests surrounding chemical safety and material quality.

These include environmental and hazardous material analyses, pollutant and emission tests of consumer goods and technical products, tests of operating materials and components, material analyses of plastics and metals, material tests, environmental simulation tests and damage analyses.

The DIN EN ISO/IEC 17025-accredited laboratories of DEKRA Automobil GmbH in Germany are located in Bretten, Halle, Saarbrücken and Stuttgart.

We also offer a variety of additional testing and certification options in our worldwide DEKRA laboratory network.

Details of the DEKRA laboratory sites:

testlab@dekra.com
dekra.com

AM41 • 11/2024