



DIN SPEC 91446

Classification of recycled plastics by Data Quality Levels for use and (digital) trading

DIN SPEC 91446
CASE STUDY

Material classification of recycled plastics

The background

There are clear deficits in the recycling of plastics – large quantities of the material do not make it into the recycling circuit, but end up in incineration or even in the world’s oceans. This is because processing plastic waste into recyclates that can be used again in products of equal or higher value remains a challenge today. Material quality varies, and for a long time there was no uniform description of recyclates of all polymer types that were graded according to the depth of information. High-quality plastic recyclates have up until now not been available in some cases, and their use is sometimes more expensive than virgin materials.

The DIN SPEC

DIN SPEC 91446 establishes a system for classifying recycled plastics according to the data depth of their description, which removes obstacles to their industrial use. This allows material to be classified according to four different data quality levels. To achieve this, the specification describes comprehensive requirements for data quantity and quality. In addition, it contains rules for terms that are not clearly defined (or are differently used) for input material, recycling processes and plastic recyclates as materials. The DIN SPEC also defines how recyclates and recyclate portions of plastic materials can be clearly identified.

The benefits

This specification is intended to serve as a common language for all actors along the value chain and enable consistent communication. “In order to establish a functioning circular economy in the

field of plastics, we need clear definitions and standards for recyclates,” says Christian Schiller, Managing Director of cirplus GmbH and initiator of the DIN SPEC. “An international market for recyclates will only be possible if the various stakeholders along the value chain know what is in the materials. DIN SPEC 91446 provides an important basis for closing the recycling loop in the field of plastics and driving the broad and economic use of high-quality recyclates.” Whether users, processors, recyclers or disposal companies, the specification is available to all stakeholders in the field of plastics, but it can also be used by researchers and policymakers.

The collaboration

DIN SPEC 91446 has been developed in accordance with the PAS procedure (Publicly Available Specification) by a consortium comprised of industry and research, representing the entire recycling value-added circuit. The following companies and organizations were involved in its development:

- STEINERT GmbH and TOMRA Systems (manufacturers of sorting systems),
- Der Grüne Punkt - Duales System Deutschland GmbH and REMONDIS Recycling GmbH & Co. KG (waste recyclers),
- MKV GmbH Kunststoffgranulate and MRS Materials Recycling Solutions GmbH (recyclers),
- Greiner Packaging GmbH and POLIFILM EXTRUSION GmbH (plastics processors),
- the Federal Association of the German Waste Management, Water and Raw Materials



“DIN SPEC 91446 provides an important basis for closing the recycling loop in the field of plastics.” Christian Schiller, Managing Director of cirplus GmbH

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- Industry (BDE) and the German Engineering Federation (VDMA),
- the Institute for Plastics Processing (IKV) in Industry and Trade at RWTH Aachen University (research institution),
 - KraussMaffei Group GmbH (plant manufacturer), and Kunststoff-Institut Lüdenscheid and SKZ - Testing GmbH (testing laboratories),
 - cirplus GmbH (trading platform for plastics recyclates).

DIN SPEC 91446 is available for download free of charge at www.beuth.de.



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