

Plastic packaging – Assessment of recycled content within polyethylene terephthalate (PET) virgin material and recyclate blended packaging materials produced from mechanical recycling methods – Specification and test methods

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Foreword

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Acknowledgement is given to Alan McNicol, Ealanach Limited, as the technical author, and the following organizations that were involved in the development of this BSI Flex as members of the Advisory Group:

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The provisions of this BSI Flex are presented in roman (i.e. upright) type. Its methods are expressed as a set of instructions, a description, or in sentences in which the principal auxiliary verb is "shall".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. "organization" rather than "organisation").

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0 Introduction

With the introduction of The Finance Act 2021, Part 2 [1], legislation mandates that a tax is levied where there is less than 30% of recycled plastic content in plastic packaging. It has become necessary for industry to develop methods in order to verify the recycled plastic content of packaging materials. This standard provides two such methods so that, in conjunction with other standards and methods, evidence of the recycled plastic content of PET packaging can be assembled. It is intended to supplement supply chain auditing; it does not and cannot replace it. The methods provided support the supply chain approach by providing screening methods, which can be used to help verify whether the properties of samples are consistent with the claimed supply chain audit/mass balance level of recycle.

The methods supplied are based on measurements that can be performed easily using relatively inexpensive instruments.

1 Scope

This BSI Flex specifies requirements for determining recycled content that has been produced through mechanical recycling methods from plastic waste streams. This recycled content is contained within PET packaging products.

While this standard covers recyclate (polymer that has been used commercially and returned for re-use through waste collection), it does not cover regrind (material that has been used during processing and recycled internally within a production facility for blending with virgin polymers). Where the standard is applied to packaging products, it covers rigid forms of packaging which includes translucent or transparent packaging.

This standard covers the criteria and testing for the levels of recycled content present in the applicable plastic pellets or the applicable packaging products, and reporting requirements.

The test methods covered in this standard indicate the presence and levels of recycled PET (rPET) present in PET packaging products through the following test methods:

- Thermal (DSC/TGA);
- Colourimetry; and
- UV-visible spectrophotometry.

The standard does not cover packaging materials produced from chemical recycling methods, nor does it cover coloured, opaque or laminated PET products or any other polymers. Further, the standard does not provide methods to determine the quality of the packaging, and/or its suitability for a specific purpose, such as containing food or drink.

The standard is for use by plastic packaging pellet and packaging manufacturers, importers and those wishing to assess the recycled content of PET plastic packaging. The standard might also be of interest to business customers of producers and importers of plastic packaging, and those with plastic packaging forming part of their supply chain. The standard might be beneficial to policy setters, consumers of goods containing plastic packaging and those with an interest in sustainability or environmental concerns.