Irish Standard
I.S. EN 16766:2017

Bio-based solvents - Requirements and test methods

I.S. EN 16766:2017

Incorporating amendments/corrigenda/National Annexes issued since publication:

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National Foreword

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 16766

November 2017

ICS 13.020.55; 87.060.30

Supersedes CEN/TS 16766:2015

English Version

Bio-based solvents - Requirements and test methods

Solvants biosourcés - Exigences et méthodes d'essais

Biobasierte Lösemittel - Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 6 September 2017.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN 16766:2017) has been prepared by Technical Committee CEN/TC 411 “Bio-based products”, the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2018, and conflicting national standards shall be withdrawn at the latest by May 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

This document supersedes CEN/TS 16766:2015.

M/491 [1] requested the development of European Standards for solvents and surfactants in relation to bio-based product aspects. This document has been prepared by CEN/TC 411/WG 2 “Bio based solvents”, the secretariat of which is held by the European Solvents Industry Group and NEN.

The following is a list of significant technical changes between this European Standard and the Technical Specification:

— introduction of the (final) publications on bio-based content determination, sustainability and life-cycle assessment developed under CEN/TC 411;

— change of the requirement that a bio-based solvent shall comply to similar sustainability criteria as comparable regular solvents towards an option, because this is very hard to determine for a solvents' producer and basically the task of the user;

— expanding the classification in Table 1 to fulfilling either bio-based carbon or bio-based content minima;

— further clarification of the sustainability requirements.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

Bio-based products from forestry and agriculture have a long history of application, such as paper, board and various chemicals and materials. The last decades have seen the emergence of new bio-based products in the market. Some of the reasons for the increased interest lie in the bio-based products' benefits in relation to the depletion of fossil resources and climate change. Bio-based products may also provide additional product functionalities. This has triggered a wave of innovation with the development of knowledge and technologies allowing new transformation processes and product development.

Acknowledging the need for common standards for bio-based products, the European Commission issued mandate M/492[1)], resulting in a series of standards developed by CEN/TC 411, with a focus on bio-based products other than food, feed and biomass for energy applications.

The standards of CEN/TC 411 "Bio-based products" provide a common basis on the following aspects:

— common terminology;

— bio-based content determination;

— life Cycle Assessment (LCA);

— sustainability aspects;

— declaration tools.

It is important to understand what the term bio-based product covers and how it is being used. The term 'bio-based' means 'derived from biomass' [2]. Bio-based products (bottles, insulation materials, wood and wood products, paper, solvents, chemical intermediates, composite materials, etc.) are products which are wholly or partly derived from biomass. It is essential to characterize the amount of biomass contained in the product by for instance its bio-based content or bio-based carbon content.

The bio-based content of a product does not provide information on its environmental impact or sustainability, which may be assessed through LCA and sustainability criteria. In addition, transparent and unambiguous communication within bio-based value chains is facilitated by a harmonized framework for certification and declaration. This European Standard has been developed with the aim to fulfil part of a Mandate [1] to describe the technical requirements of bio-based solvents in relation to bio-based product aspects.

Solvents are liquids which have the ability to dissolve, suspend or extract other materials. In Europe, thousands of producers and manufacturers and more than 10 million workers use solvents every day. The solvent producing industry is composed of both small and medium-sized enterprises (SMEs) as well as multinationals. Downstream users generally tend to be SMEs and micro-SMEs.

Solvents are today mainly produced from fossil feedstock. There are efforts to replace these with solvents produced from renewable resources, i.e. bio-based solvents.

The criteria of the Regulation on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) [3] have been considered in the discussions that have led to this European Standard.

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1) A Mandate is a standardization task embedded in European trade laws. Mandate M/492 is addressed to the European Standardization bodies, CEN, CENELEC and ETSI, for the development of horizontal European Standards for bio-based products.

This document provides an approach that can be taken to describe the technical requirements of bio-based solvents in relation to bio-based product. The purpose of this document is to define how the criteria of performance, health, safety and environment can be determined (measured and calculated) for the bio-based solvent placed on the market. This approach intends to strengthen the reputation of "bio-based solvents" and customer confidence.

Future work by the solvents' industry is planned to enable a comparison between bio-based and fossil-based solvents they intend to replace in terms of the impact on the three pillars of sustainability as in EN 16751. This information is essential to check the sustainability impact of the use of all solvents over their whole life cycle.

This European Standard builds upon the horizontal standards on bio-based products developed by CEN/TC 411. It provides additional, product specific, details relevant for bio-based solvents.

1 Scope

This European Standard sets the requirements for bio-based solvents in terms of their bio-based content, their technical properties and test methods. It lays down the characteristics and details for assessment of bio-based solvents that:

— are fit for purpose in terms of performance related properties;

— comply with the health, safety and environmental requirements which apply generally to solvents; and

— are derived from biomass.

This European Standard specifies solvent classes, based on the percentage of bio-based carbon content and bio-based content.

NOTE EN 16575 defines the term “bio-based” as derived from biomass and clarifies that “bio-based” does not imply “biodegradable”. In addition, “biodegradable” does not necessarily imply the use of “bio-based” material.

In addition, this document sets requirements on information to be provided regarding sustainability aspects.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 16640, *Bio-based products - Bio-based carbon content - Determination of the bio-based carbon content using the radiocarbon method*

EN 16575, *Bio-based products - Vocabulary*

EN 16751, *Bio-based products - Sustainability criteria*

EN 16760, *Bio-based products - Life Cycle Assessment*

EN 16785-1, *Bio-based products - Bio-based content - Part 1: Determination of the bio-based content using the radiocarbon analysis and elemental analysis*

prEN 16785-2:2016, *Bio-based products - Bio-based content - Part 2: Determination of the bio-based content using the material balance method*

EN 16848, *Bio-based products - Requirements for Business to Business communication of characteristics using a Data Sheet*

EN 16935, *Bio-based products - Requirements for Business-to-Consumer communication and claims*

EN ISO 12185, *Crude petroleum and petroleum products - Determination of density - Oscillating U-tube method (ISO 12185:1996)*