DEAS 1366:2026

ICS 83.080.01

DRAFT EAST AFRICAN STANDARD

Biodegradable plastics — Specification

EAST AFRICAN COMMUNITY

First Edition 2026

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Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in the East African Community. It is envisaged that through harmonized standardization, trade barriers that are encountered when goods and services are exchanged within the Community will be removed.

The Community has established an East African Standards Committee (EASC) mandated to develop and issue East African Standards (EAS). The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the public and private sector organizations in the community.

East African Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the Principles and procedures for development of East African Standards.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

The committee responsible for this document is Technical Committee EASC/TC *072, Plastics and Related Products.*

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

Biodegradable plastics — Specification

1 Scope

This standard specifies requirements, and test methods for biodegradable plastics.

This standard shall not be applied in isolation but in conjunction with other applicable product Standards, as relevant and available.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 20200, *Plastics — Determination of the degree of disintegration of plastic materials under composting conditions in a laboratory-scale test*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
biodegradable plastic
plastic material that can be broken down by micro-organisms in the presence of oxygen to carbon

dioxide, water, and mineral salts of any other elements present (mineralization) and new biomass or in

the absence of oxygen to carbon dioxide, methane, mineral salts, and new biomass

3.2
disintegration
physical breakdown of a material into very small fragments physical breakdown of plastic into fragments < 2 mm that are no longer visually distinguishable.

4 General requirements

4.1 Biodegradable plastics may be derived from bio-based or fossil sources, but shall demonstrate biodegradability.

4.2 Additives must not hinder biodegradation or release harmful substances.

4.3 No toxic residues or colorants shall leach during degradation.

5 Specific requirements

5.1 Plastic materials shall demonstrate a minimum of 90% physical disintegration within 12 weeks under industrial composting conditions, as determined in accordance with ISO 20200.

5.2 Plastic materials shall demonstrate a minimum of 90% conversion of their organic carbon content to carbon dioxide within 180 days under controlled composting conditions, as determined in accordance with ISO 14855.

5.3 Chemical, physical and mechanical properties shall be specified and determined in accordance with the applicable product standards.

6 Marking

Biodegradable plastics, in addition to the product-specific marking requirements prescribed in the relevant product standard, shall be legibly and indelibly marked in English and/or in any other official language (such as French or Kiswahili) recognized by the importing East African Partner State, with the following information:

a) Disposal instructions

b) Biodegradable certification mark

Bibliography

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[2] Ghosh, K. & Jones, B.H. (2021), *Roadmap to biodegradable plastics – Current state and research needs. ACS Sustainable Chemistry & Engineering, 9, 6170–6187. DOI: https://doi.org/10.1021/acssuschemeng.1c00801. Retrieved from [ACS Publications]*.

[3] Tokiwa, Y., Calabia, B.P., *Ugwu, C.U. & Aiba, S. (2009), Biodegradability of plastics. International Journal of Molecular Sciences, 10, 3722–3742. DOI: https://doi.org/10.3390/ijms10093722. Retrieved from [MDPI].*

[4] Narayan, R. (1993), *Biodegradable plastics. Draft chapter in monograph Opportunities for Innovation in Biotechnology. National Institute of Standards & Technology (NIST). Retrieved from [NIST Publication].*

[5] ISO 18606:2013(en), Packaging and the environment — Organic recycling

[6] ISO 14855-1:2012(en),Determination of the ultimate aerobic biodegradability of plastic materials under controlled composting conditions — Method by analysis of evolved carbon dioxide — Part 1: General method