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EAST AFRICAN STANDARD

Plastics — Codes for resin identification on plastic containers

EAST AFRICAN COMMUNITY

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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. XXXXXX.

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.

Introduction

Plastic waste is one of the main components in Municipal Solid Waste (MSW). It constitutes about 15 % to 20 % by weight and around one-third by volume in the waste stream. Compared with other recyclable materials such as paper, metals and aluminium cans, the recycling and recovery rates of plastic waste in East Africa is fairly low.

To facilitate the development of a sustainable plastic waste recycling industry appropriate to local conditions, measures under the Waste Reduction Framework Plan are developed to promote and support the current recycling industry. Recycling of waste materials is preferable to incinerating or landfilling because recycling conserves valuable resources, saves energy in the manufacturing process and extends the life of disposal facilities. Increased recycling is necessary because it will lead to reduction of the solid waste stream, and plastics have been found to be recyclable.

One of the barriers to increased recycling of plastics is the necessity of keeping the various types of plastics separate, based on the resin from which they are made, thus a need to develop a coding system that can be used to label plastic containers so as to identify the type of resin from which they are made. This standard therefore is intended to facilitate the recycling of plastic containers by requiring that these containers be labelled according to resin type.

Plastics — Codes for resin identification on plastic containers

1 Scope

This Draft East African Standard specifies codes for identifying the resin content of plastic containers used by the public and for facilitating sorting as prerequisites for successful plastic recovery and recycling.

The codes are not intended to be a guarantee to consumers that a given item bearing the code will be readily accepted for recycling. Users of the codes are encouraged to adhere to the guidelines of this standard.

2 Normative references.

There are no normative references in this document.

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:

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

3.1

degradable

able to undergo physical, biological and chemical decomposition in any way into component parts within three hundred sixty days under exposure to break down elements

3.2

label

moulded, imprinted, or raised symbol on a plastic product, rigid plastic container or plastic bottle

3.3

container

object such as a box, jar, bag, or bottle including a wrapper film that is used to hold something, especially when its being stored, transported or wrapped

3.4

plastic

synthetic material made from polymerisation of organic compounds and additives that can be moulded in many different forms for use

3.5

plastic product

product made of synthetic material from polymerisation of organic compounds and additives

3.6

plastic container

object made of a synthetic material that is intended for holding something

3.7

recycle

process used on waste material so that it can be used again

4 Symbols (and abbreviated terms)

— <i>D</i>	Degradable
— <i>HDPE</i>	High Density Polyethylene
— <i>LDPE</i>	Low Density Polyethylene
— <i>PETE (PET)</i>	Polyethylene Terephthalate
— <i>PP</i>	Polypropylene
— <i>PS</i>	Polystyrene
— <i>V (PVC)</i>	Vinyl (Polyvinyl Chloride)
— <i>OTHER</i>	Multilayer
— <i>ABS</i>	Acrylonitrile-Butadiene-Styrene
— <i>PC</i>	Polycarbonate
— <i>PMMA</i>	poly(methyl methacrylate)
— <i>PU</i>	Polyurethane

NOTE Other is either Nylon (polyamide), ABS, PC, PMMA, PU or phenolics.

5 General requirements

5.1 The code shall confirm the type of resin in the products.

5.2 The coding system shall offer a means of identifying the resin material of plastic containers used by the public.

5.3 The plastic material coded shall be of the following resins:

- a) polyethylene terephthalate (PET or PETE);
- b) high-density polyethylene (HDPE);
- c) polyvinyl chloride (PVC or V);
- d) low-density polyethylene (LDPE);
- e) polypropylene (PP); and
- f) polystyrene (PS).

5.4 Each of the resin types shall be represented by a number under the coding system as specified under 6.4.

5.5 The coding system shall include a seventh code, identified as "other" but specified. The use of this code indicates that the product in question is made of a resin other than the six listed above, or is made of more than one resin used in combination.

6 Labelling

6.1 Any plastic container shall be labelled with a code identifying the appropriate resin type used to produce the structure of the container. The code shall consist of a number placed within three triangulated arrows and a letter corresponding to the number specified in 6.4 shall be placed below the triangle of arrows as illustrated in 7.2.

6.2 The triangulated arrows shall be equilateral, formed by three arrows with the apex of each point of the triangle at the midpoint of each arrow, rounded with a short radius.

6.3 The pointer (arrowhead) of each arrow shall be at the midpoint of each side of the triangle with a short gap separating the pointer from the base of the adjacent arrow.

6.4 The triangle, formed by the three arrows curved at their midpoints, shall depict a clockwise path around the code number. The numbers and letters used shall be as follows:

- 1 — PETE/PET;
- 2 — HDPE;
- 3 — V/PVC;
- 4 — LDPE;
- 5 — PP;
- 6 — PS; and
- 7 — Other [specified as either Nylon (polyamide), ABS, PC, PMMA, PU, phenolic].

7 Guidelines for coding



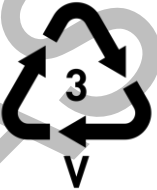
7.1 General





The following are general guidelines for coding:

- a) The code should be used on plastic containers and plastic products solely to identify resin material;
- b) The code should appear on the container, and shall be visible;
- c) The design of the code should not be modified (the resin acronym in the code shall not be replaced and other types of chasing arrows should not be used); and
- d) There should not be any recyclability or other environmental claims in close proximity to the code, even if such claims are properly qualified. Specifically, do not use the term "recyclable" in proximity to the code.

7.2 Identification codes, properties and application

Table 1 — Identification codes, properties and applications

Type of plastic material	Identification code	Properties	Packaging applications
PETE/PET		<ul style="list-style-type: none"> • Clarity • Toughness • Barrier to gas and moisture • Heat resistance • Resistance to grease/oil 	<ul style="list-style-type: none"> • Water and beverage bottles and jars • Cooking oil bottles • Powder detergent jars • Ovenable food trays • Vinegar bottles
HDPE		<ul style="list-style-type: none"> • Rigidity • Strength • Toughness • Water barrier • Chemical resistance • Ease of forming • Low cost • Permeable to gas • Natural milky white colour 	<ul style="list-style-type: none"> • Jerricans and bottles • Detergents, bleach cosmetics, lubricants and milk • Rigid pipe • Buckets, basins, crates • Crinkly shopping bags • Plastic flower pots • Bottle caps • Garbage bins
PVC/V		<ul style="list-style-type: none"> • Clarity/transparency strength • Toughness • Resistance to lubricants • Can be solvent welded • Electrical insulation • Non flammability 	<ul style="list-style-type: none"> • Floor tiles • Wire and cable insulation • Garden hoses • Electrical conducts • Blood bags • Surgical gloves • Medical tubing • Bottles for disinfectants • Shoe soles and uppers • Water pipes and fittings • Carpet backing • Window frames • Wall cladding • Outdoor furniture • Shrink wrap

LDPE		<ul style="list-style-type: none"> • Strength • Toughness • Ease of processing • Flexibility • Moisture barrier • Low melting point allows heat sealing 	<ul style="list-style-type: none"> • Bags for dry cleaning, groceries, retail, frozen foods • Trash cans • Bread • Squeezable bottles • Polyethylene sheets and film • Wire and cable insulation
PP		<ul style="list-style-type: none"> • Hard but flexible • Resistant to heat • Translucent 	<ul style="list-style-type: none"> • Crisp bags • Drinking straws • Hinged lunch boxes • Margarine tubs • Yoghurt containers • Medicine bottles • Car battery cases • Brooms and brushes • Bottle caps
PS		<ul style="list-style-type: none"> • Hardness • Can be blown (expanded) 	<ul style="list-style-type: none"> • Packing pellets • Clear coffee/tea cups • Clam shell take away containers • Plastic cutlery • Video tape cases (CD) • Meat trays • Protective packing for computers and electronics, • Egg trays
Other		Not available in sufficient quantities for recycling	

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