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Materials in Contact with Food — Requirements for Packaging materials



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Foreword

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- (a) a member of International Organisation for Standardisation (ISO) and
- (b) a contact point for the WHO/FAO Codex Alimentarius Commission on Food Standards, and
- (c) the National Enquiry Point on TBT Agreement of the World Trade Organisation (WTO).

The work of preparing Uganda Standards is carried out through Technical Committees. A Technical Committee is established to deliberate on standards in a given field or area and consists of key stakeholders including government, academia, consumer groups, private sector and other interested parties.

Draft Uganda Standards adopted by the Technical Committee are widely circulated to stakeholders and the general public for comments. The committee reviews the comments before recommending the draft standards for approval and declaration as Uganda Standards by the National Standards Council.

The committee responsible for this document is Technical Committee UNBS/TC2, *[Food and Agriculture]*, Subcommittee SC 19, *[Food Packaging and Materials in Contact with Food]*.

Materials in Contact with Food — Requirements for Packaging materials

1 Scope

This draft standard provides the general requirements of packaging items for food contact and their subsequent use.

2 Normative references

The following referenced documents 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/TS 22002-4:2013(E) - *Prerequisite programs on food safety —Part 4: Food packaging manufacturing*

DUS 1675 - *Determination of overall migration of constituents of plastic materials and articles intended to come in contact with foodstuffs – method of analysis*

ISO 4531 Vitreous and porcelain enamels -- *Migration from enamelled ware in contact with food -- Method of test and permissible limit.*

ISO 3220:1975 Copper and copper alloys -- *Determination of arsenic -- Photometric method*

ISO 7086: 1 *Glass hollowware in contact with food —Release of lead and cadmium —Part 1: Test method*

3 Terms and definitions

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

3.1

biodegradable

capable of being decomposed by the action of living organisms, especially of bacteria

3.2

Additive

a material such as hardener, plasticizer, preservative etc. added to a base material to achieve a specific property.”

3.3

contamination:

all possible pollution of the finished packaging material, including microbiological, chemical and physical contaminants not intentionally added to the product and may compromise food safety.

3.4

rework material

materials intended for reprocessing

3.5 food packaging
an entity of components that predictably serves the purpose to cover a certain food product (content) in a targeted and removable fashion.

3.6 migration
transfer of substances from an external source to food

3.7 active materials and articles
materials and articles that are intended to extend the shelf-life or to maintain or improve the condition of packaged food; they are designed to deliberately incorporate components that would release or absorb substances into or from the packaged food or the environment surrounding the food.

3.8 intelligent materials and articles
materials and articles which monitor the condition of packaged food or the environment surrounding the food.

3.9 Leaching
is the process of extracting substances from a solid by dissolving them in a liquid.

3.10 food grade material.
Any material which does not contaminate food with harmful substances on coming in contact with it.

3.11 resin
a solid or highly viscous substance, typically convertible into polymers.

3.12 food contact ink
an ink solely composed of substances listed as permitted for direct food contact, permitted as food or as an additive for the food that is to be packed in the packaging material which is to be printed with these inks.

3.13 certificate of analysis
document that confirms conformance to specifications or regulations.

3.14 material safety data sheet
document that contains information on the potential hazards and how to work safely with a given chemical product.

3.15 Colourant
ingredients that alone or in combination with other ingredients impart or alter the colour of the product.”

4 Requirements

The kind of food packaging and the materials including active and intelligent materials used shall be chosen in such a way that:

- I. the packaging itself does not have an adverse effect on the food product (e.g. through chemical reactions, leaching of packaging materials or absorption);
- II. the product does not have an adverse effect on the packaging, changing its properties or affecting its protective function.
- III. does not result into unacceptable changes in the organoleptic characteristics of the food.

- IV. does not to leak, nor allow diffusion and permeation. ;
- V. is strong enough to hold the contents when subjected to normal handling;
- VI. is not altered by the ingredients of the food product in its final form.

4.1. Raw materials

Raw materials used in the manufacture of packaging items for food contact use shall be food grade and shall be accompanied with relevant certificates of analysis and material safety data sheets.

4.1.1 Colourants

Colourants used in packaging materials which are to come into contact with food shall be food grade.

4.1.2 Rework materials

Rework materials used in the manufacture of packaging items for food contact use shall be prepared from raw items that have not been used or printed and have been manufactured in compliance with Good Manufacturing Practices. Post-consumer recycled material shall not be used in direct contact with food.

4.1.3 Resins

The resins selected shall be of food grade material.

4.1.4 Identification of raw materials

The manufacturer shall ensure that the raw materials are of the correct grade and are correctly labelled for food contact use.

Packaging raw materials identified as prescribed shall be accepted only in clean, tamper proof containers.

4.3 Storage and Control

Packaging materials and rework materials intended for food contact use shall be stored separately from other materials in closed, properly identified containers.

4.4 Additives, Processing aids and Colorants

The additives selected and their dosages should be accepted as indirect food additives according their prescribed conditions of use.

For the mass content of any additive which exceeds 1%, the specific name or the chemical structure of the additive shall be indicated.

4.5 Printing Ink and Coating

Printing inks and or coatings shall not be placed on any part of a packaging item that normally comes into contact with foodstuffs. If such contact is unavoidable the printing ink and or coatings shall be of food grade and shall conform to the requirements of the materials accepted as food additives and shall comply with the relevant Codex standards.

4.6 Performance of the packaging materials

The performance of the packaging material shall be identified clearly during the manufacturing and the following subjects shall at least be considered

- i. the nature of the food product to be packaged

- ii. the surface/volume ratio
- iii. the expected maximum shelf-life of the food product
- iv. the filling, sealing and storage methods to be used
- v. the heating, cooling, sterilization and pasteurization processes to which the packaging material and contents may be exposed

The required performance shall, wherever possible, be translated into technical specifications such as permeability, mechanical strength, barrier properties and specific organoleptic tests to be performed.

4.7 Migration

Packaging materials for food contact use shall not transfer their constituents to foodstuffs in quantities exceeding Specific Migration Limits and or Overall Migration Limits when tested according to relevant standards.

This shall be attained by either:

- i. obtaining and verifying information received from supplier about the compliance with specific restrictions
- ii. controlling or verifying the composition of the raw materials,
- iii. controlling or verifying the migration features of the raw materials
- iv. the use of functional barriers
- v. testing directly the intermediate or finished products.

Where migration analysis is not considered necessary and thus not conducted, a justification shall be provided.

4.7.1 Plastic Materials

Plastic packaging materials intended to come into contact with food when sampled and tested according to DUS 1675 shall not exceed 60 milligrams of the constituents released per kilogram of foodstuff or food simulant (mg/kg) (overall migration limit). However, this limit shall be 10 milligrams per square decimetre of surface area of material or article (mg/dm²) in the case of the following:

- i. articles which are containers or are comparable to containers or which can be filled, with a capacity of less than 500 millilitres (ml) or more than 10 litres (l);
- ii. sheet, film or other material or articles which cannot be filled or for which it is impracticable to estimate the relationship between the surface area of such material or article and the quantity of food in contact therewith.

4.7.2 Packaging Materials made of Alloys

Packaging Alloys for food contact shall contain only aluminium, chromium, Copper, gold, iron, magnesium, manganese, molybdenum, nickel, silicone, silver, tin titanium, zinc, cobalt, vanadium and carbon.

Alloys used for solders which may come into contact with food shall contain a maximum of 0.5% cadmium.

4.7.3 Glass Packaging Materials

Permissible limits shall be 0.5 mg/ kg for Lead and 0.25 mg/ kg for Cadmium when tested according to ISO 7086:1

4.7.4 Ceramic Packaging materials

Quantities of lead and cadmium transferred from ceramics when tested according to shall not exceed the limits given in table 1

Table 1 shows the permissible limits for lead and cadmium for ceramic items intended to come into contact with food.

Category	Description	Lead	Cadmium	Methods of Test
1	Items which cannot be filled and items which can be filled, the internal depth of which measured from the lowest point to the horizontal plane passing through the upper rim does not exceed 25 mm. Max (mg/dm ²)	0.8	0.07	ISO 6486:1
2	All other items which can be filled, Max (mg/l)	4.0	0.3	
3	Items having a capacity of more than 3 litres Max, (mg/l)	1.5	0.1	

4.7.5 Non-regulated substances

In instances where substances used in raw materials for packaging may not be covered by any of the available legislation, guidelines or recommendations, confirmation shall be obtained from the suppliers that they have identified and made a safety assessment of the non-regulated substances, in order to avoid the exposure of consumers to migrating substances at levels that could potentially pose a risk to consumer health.

5 Hygiene

Food grade packaging materials shall be produced and handled in hygienic manner in accordance with DUS ISO 22000-4 to prevent contamination putting into consideration that most packaging items may not be sterilized before use.

6 Packaging

Packaging items for food contact shall be packaged in such a manner as to ensure that the items do not become contaminated during storage and handling.

The contents of each package shall be uniform and contain only Packaging items of the same origin, quality, and size (if sized).

7 Weights and Measures

The weight of the package of the product shall comply with the Weights and Measures regulations.

8 Labelling

The following specific requirements shall apply and shall be legibly and indelibly marked:

- i. name of the packaging material"
- ii. name and physical address of manufacturer and/or distributor
- iii. type of food suitable for the packaging

- iv. temperature at which the food should be packaged
- v. net weight or length in metric units
- vi. lot identification (batch number)
- vii. Storage conditions
- viii. Words “ for food contact use” or the following symbol shall appear on the labelling



When labelling non-retail packages, information for non-retail packages shall either be given on the packages or in accompanying documents, except that the name of the produce, lot identification and the name and address of the manufacturer or packer shall appear on the package.

Bibliography

- [1] Regulation (EC) No 1935/2004 – *Materials and Articles in Contact with Food*.
- [2] CFR 21 - *Code of Federal Regulations Title 21*

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