

# DRAFT UGANDA STANDARD

First Edition  
2019-mm-dd

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## Fruit juices and nectars — Specification

PUBLIC REVIEW DRAFT

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Reference number  
DUS DEAS 77-1: 2019

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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.

This Draft Uganda Standard, DUS DEAS 77-1: 2019, *Fruit juices and nectars — Specification*, is identical with and has been reproduced from an International Standard, DEAS 77-1: 2019, *Fruit juices and nectars — Specification*, and is being proposed for adoption as a Uganda Standard.

The committee responsible for this document is Technical Committee UNBS/TC 2, *Food and agriculture*, Subcommittee SC 4, *Fruits, vegetables, spices, and processed products*.

Wherever the words, "East African Standard " appear, they should be replaced by "Uganda Standard."



DEAS 77-1: 2018:

ICS 67.160.20

## DRAFT EAST AFRICAN STANDARD

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Fruit juices and nectars — Specification

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.

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.

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This *second/third/...* edition cancels and replaces the *first/second/...* edition (EAS nnn-n:yyyy), which has been technically revised.

*EAS nnn consists of the following parts, under the general title **Introductory element — Main element**:*



PUBLIC REVIEW DRAFT JANUARY 2019



## Fruit juices and nectars — Specification

### 1 Scope

This Draft East Africa Standard specifies requirements and methods of sampling and test for fruit juices, nectars, concentrated fruit juices, Fruit juice from concentrate, Water extracted fruit juice, dehydrated fruit juice, powdered fruit juice, Fruit puree and concentrated fruit puree intended for direct human consumption or for further processing

### 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.

EAS 38, *General standard for labeling of prepackaged foods*

EAS 39, *Code of practice for hygiene in the food and drink manufacturing industry*

Codex stan 192, *General standard for food additives*

EAS 153, *Drinking water — Specification*

EAS 803, *Nutrition labelling — Requirements*

EAS 804, *Claims on food — Requirements*

EAS 805, *Use of nutrition and health claims — Requirements*

ISO 874, *Fresh fruits and vegetables -- Sampling*

EAS , *Code of hygienic practice for dried fruits*

Codex Stan 193, *General standard for contaminants and toxins in foods* ISO 4833 - 2, *Methods for the microbiological examination of foods — Part 2: General Guidance for the Enumeration of Micro-Organisms- Colony Count Technique at 30 °C*

ISO 21527-1, *Microbiology of food and animal feeding stuffs -- Horizontal method for the enumeration of yeasts and moulds -- Part 1: Colony count technique in products with water activity greater than 0,95* ISO 7251, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive Escherichia coli — Most probable number technique*

ISO 763, *Fruits and vegetable products — Determination of ash insoluble in hydrochloric acid*

ISO 2448, *Fruit and vegetable products — Determination of ethanol content*

ISO 2172, *Fruit juice — Determination of solids content — Pycnometric method*

ISO 2173, *Fruit and vegetable products — Determination of soluble solids — Refractometric method*

ISO 5522, *Fruits, vegetables and derived products — Determination of total sulphur dioxide content*

ISO 5523, *Liquid fruit and vegetable products — Determination of sulphur dioxide content — (Routine method)*

ISO 6636-2, *Fruits, vegetables and derived products -- Determination of zinc content -- Part 2: Atomic absorption spectrometric method*

ISO 6634, *Fruits, vegetables and derived products -- Determination of arsenic content -- Silver diethyldithiocarbamate spectrophotometric method*

ISO 7952, *Fruits, vegetables and derived products -- Determination of copper content -- Method using flame atomic absorption spectrometry*

ISO 6633 *Fruits, vegetables and derived products -- Determination of lead content -- Flameless atomic absorption spectrometric method*

### **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**

##### **fruit Juice**

Fruit juice is the unfermented but fermentable liquid obtained from the edible part of sound, appropriately mature and fresh fruit or of fruit maintained in sound condition by suitable means including post harvest surface treatments

#### **3.2**

##### **authenticity**

maintenance of the product's essential physical, chemical, organoleptic, and nutritional characteristics of the fruit(s) from which it comes

#### **3.3**

##### **brix**

soluble solids content of the juice

#### **3.4**

##### **fruit puree**

the unfermented but fermentable product obtained by suitable processes for example, by sieving, grinding, and milling the edible part of the whole or peeled fruit without removing the juice.

#### **3.5 Nectar**

fruit Nectar is the unfermented but fermentable product obtained by adding water with or without the addition of sugars

### 3.6

#### **Concentrated fruit juice**

product that complies with the definition given in Section 3.1 above, except water has been physically removed in an amount sufficient to increase the Brix level to a value at least 50% greater than the Brix value established for reconstituted juice from the same fruit.

### 3.7

#### **food grade material**

material that will safeguard the hygienic, safety, nutritional, technological, and organoleptic qualities of the product.

## **4 Description**

### **4.1 Product description**

#### **4.1.1 Fruit juice**

Fruit juice is the unfermented liquid obtained from the edible part of sound, appropriately mature and fresh fruit or of fruit maintained in sound condition by suitable means.

Some juices may be processed with pips, seeds and peel, which are not usually incorporated in the juice, but some parts or components of pips, seeds and peel, which cannot be removed by Good Manufacturing Practices (GMP) will be acceptable.

The juice is prepared by suitable processes, which maintain the essential physical, chemical, organoleptic and nutritional characteristics of the juices of the fruit from which it comes. The juice may be cloudy or clear and may have restored aromatic substances and volatile flavour components, all of which shall be obtained by suitable physical means, and all of which shall be recovered from the same kind of fruit.

Pulp and cells obtained by suitable physical means from the same kind of fruit may be added.

A single juice is obtained from one kind of fruit. A mixed juice is obtained by blending two or more juices or juices and purées, from different kinds of fruit.

Fruit juice is obtained as follows:

- a) fruit juice directly expressed by mechanical extraction processes; and
- b) b) fruit juice from concentrate by reconstituting concentrated fruit juice (4.2.2) with potable water that meets the requirements of EAS 12.

#### **4.1.2 Concentrated fruit juice**

Concentrated fruit juice is the product that complies with the definition given in 4.2.1, except water has been physically removed in an amount sufficient to increase the Brix level to a value at least 50% greater than the Brix value established for reconstituted juice from the same fruit, as indicated in the Table 1.

In the production of juice that is to be concentrated, suitable processes are used and may be combined with simultaneous diffusion of the pulp cells or fruit pulp by water provided that the water extracted soluble fruit solids are added in-line to the primary juice, before the concentration procedure.

Fruit juice concentrates may have restored (see Note 1 in Clause 4.2.6) aromatic substances and volatile flavour components, all of which shall be obtained by suitable physical means, and all of which shall be recovered from the same kind of fruit. Pulp and cells (see Note 2 in Clause 4.2.6) obtained by suitable physical means from the same kind of fruit may be added.

#### **4.1.3 Water extracted fruit juice**

Water extracted fruit juice is the product obtained by diffusion with water of:

- pulpy whole fruit whose juice cannot be extracted by any physical means,
- dehydrated whole fruit; or
- dehydrated/powdered fruit juice

Water extracted fruit juice may be concentrated and reconstituted.

The solids content of the finished product shall meet the minimum Brix level for reconstituted juice specified in the Table 1.

#### **4.1.4 Fruit purée**

Fruit purée for use in the manufacture of fruit juices and nectars is the unfermented but fermentable product obtained by suitable processes for example, by sieving, grinding, and milling the edible part of the whole or peeled fruit without removing the juice. The fruit shall be sound, appropriately mature, and fresh or preserved by physical means or by treatment(s) applied in accordance with the applicable provisions of the Codex Alimentarius Commission.

Fruit purée may have restored aromatic substances and volatile flavour components, all of which shall be obtained by suitable physical means, and all of which shall be recovered from the same kind of fruit. Pulp and cells obtained by suitable physical means from the same kind of fruit may be added.

#### **4.1.5 Concentrated fruit purée**

Concentrated fruit purée for use in the manufacture of fruit juices and nectars is obtained by the physical removal of water from the fruit purée in an amount sufficient to increase the Brix level to a value at least 50 % greater than the Brix value established for reconstituted juice from the same fruit, as indicated in Table 1.

Concentrated fruit purée may have restored aromatic substances and volatile flavour components, all of which shall be obtained by suitable physical means, and all of which shall be recovered from the same kind of fruit

#### **4.1.6 Dehydrated/powdered fruit juice (fruit juice powder)**

Dehydrated/powdered fruit juice is the product obtained from fruit juice of one or more kinds by the physical removal of virtually all the water content.

#### **4.1.7 Fruit nectar**

Unfermented but fermentable product obtained by adding water with or without the addition of either nutritive sweeteners or non-nutritive sweeteners to products described in 4.1.1, 4.1.2, 4.1.3, 4.1.4, 4.1.5 or to a mixture of those products.

Aromatic substances, volatile flavour components, pulp and cells all of which shall be recovered from the same kind of fruit and be obtained by suitable physical means may be added. That product moreover shall conform to the requirements defined for fruit nectars in Table 1.

#### **4.2.8 Fruit Pulp**

Edible portions of the fruit, mashed, or cut into pieces, but not reduced to a puree'

#### **4.2.9 Blended or mixed fruit juice and nectar**

Blended or mixed fruit juice and nectar is the unfermented but fermentable product obtained by adding water with or without the addition of sugars, syrups and/or honey, and/or sweeteners, obtained from two or more different kinds of fruits. The blend can be obtained from the following;

- i. Fruit juice,
- ii. Fruit juice from concentrate,
- iii. concentrated fruit juice,
- iv. Water extracted fruit juice,
- v. dehydrated fruit juice,
- vi. Powdered fruit juice,
- vii. Fruit puree,
- viii. Concentrated fruit puree.

#### **4.2.10 Fresh fruit Juices**

Fresh Fruit juice is the unfermented but fermentable liquid obtained from the edible part of sound, appropriately mature, ripe and fresh fruit, freshly squeezed or extracted and packaged as appropriate and which;

- a) Contains no additives
- b) Has not been subjected to any preserving process other than chilling
- c) Clean and free from exogenous foreign matter
- d) Is practically free from endogenous foreign matter like seeds and bits of peel
- e) Is intended to be sold for consumption within two hours of extraction or six hour with refrigeration

NOTE 1 Introduction of aromas and flavours are allowed to restore the level of aromatic substances and volatile flavour components in accordance with good manufacturing practices (GMP).

NOTE 2 For citrus fruits, pulp or cells are the juice sacs obtained from the endocarp.

#### **4.2 Species description**

The species indicated as the botanical name in the Table 1 shall be used in the preparation of fruit juices, fruit purées and fruit nectars bearing the product name for the applicable fruit.

For fruit species not included in the Table 1, the correct botanical or common name shall apply.

## 5 REQUIREMENTS

### 5.1 General requirements

#### 5.1.1 Basic Ingredients

##### 5.1.1.1 Directly expressed fruit juices

The Brix level for directly expressed fruit juices shall be the Brix as expressed from the fruit and the soluble solids content of the single strength juice shall not be modified, except by blendings with the juice of the same kind of fruit.

##### 5.1.1.2 Reconstituted juice and nectar

#### 5.1.2 Other permitted ingredients

##### 5.1.2.1 Sugars

Sucrose, glucose (dextrose anhydrous) or fructose with less than 2% moisture may be added only to products intended for sale to the consumer or for catering purposes.

Both sugars and acidifying agents shall not be added to the same fruit juice

**Table 1— Requirements for name and Brix content of common fruit juices and nectars**

Botanical Name	Fruit's Common Name	Minimum Brix level for reconstituted fruit juices and reconstituted purée	Minimum Juice and/or purée content (% v/v) <sup>b)</sup> for fruit nectars
<i>Actinidia deliciosa</i> (A. Chev.) C. F. Liang & A. R. Ferguson	Kiwi	( * ) <sup>b)</sup>	( * ) <sup>c)</sup>
<i>Anacardium occidentale</i> L.	Cashewapple	11.5	25.0
<i>Ananas comosus</i> (L.) Merrill <i>Ananas sativus</i> L. Schult. f.	Pineapple	10	40.0
<i>Annona muricata</i> L.	Soursop	14.5	25.0
<i>Annona squamosa</i> L.	Sugar Apple	14.5	25.0
<i>Averrhoa carambola</i> L.	Carambola / Starfruit	7.5	25.0
<i>Carica papaya</i> L.	Papaya	( * ) <sup>b)</sup>	25.0
<i>Chrysophyllum cainito</i>	Star Apple	( * ) <sup>b)</sup>	( * ) <sup>c)</sup>
<i>Citrullus lanatus</i> (Thunb.) Matsum. & Nakai var. Lanatus	Water Melon	8.0	40.0
<i>Citrus aurantifolia</i> (Christm.) (swingle)	Lime	8.0 <sup>c)</sup>	According to the legislation of the importing country
<i>Citrus aurantium</i> L.	Sour Orange	( * ) <sup>b)</sup>	50.0
<i>Citrus limon</i> (L.) Burm. f. <i>Citrus limonum</i> Rissa	Lemon	8.0 <sup>c)</sup>	According to the legislation of the importing country
<i>Citrus paradisi</i> Macfad	Grapefruit	10.0 <sup>c)</sup>	50.0
<i>Citrus paradisi</i> , <i>Citrus grandis</i>	Sweetie grapefruit	10.0	50.0
<i>Citrus reticulata</i> Blanca	Mandarine/ Tangerine	11.8 <sup>c)</sup>	50.0
<i>Citrus sinensis</i> (L.)	Orange	10.	50.0
<i>Cocos nucifera</i> L. <sup>d)</sup>	Coconut	5.0	25.0



<i>Cucumis melo</i> L.	Melon	8.0	35.0
<i>Cucumis melo</i> L. subsp. <i>melo</i> var. <i>inodorus</i> H. Jacq.	Casaba Melon	7.5	25.0
<i>Cucumis melo</i> L. subsp. <i>melo</i> var. <i>inodorus</i> H. Jacq.	Honeydew Melon	10.0	25.0
<i>Cydonia oblonga</i> Mill.	Quince	11.2	25.0
<i>Diospyros khaki</i> Thunb.	Persimmon	(*) <sup>b)</sup>	40.0
<i>Empetrum nigrum</i> L.	Crowberry	6.0	25.0
<i>Eriobotrya japonica</i>	Loquat	(*) <sup>b)</sup>	(*) <sup>c)</sup>
<i>Eugenia syriaca</i>	Guavaberry Birchberry	(*) <sup>b)</sup>	(*) <sup>c)</sup>
<i>Eugenia uniflora</i> Rich.	Suriname Cherry	6.0	25.0

a) If a juice is manufactured from a fruit not mentioned in the above list, it shall, nevertheless, comply with all the provisions of the Standard, except that the minimum Brix level of the reconstituted juice shall be the Brix level as expressed from the fruit used to make the concentrate.

b) No data currently available. The minimum Brix level of the reconstituted juice shall be the Brix level as expressed from the fruit used to make the concentrate.

c) Acid corrected as determined by the method for total titratable acids in Clause 10 on Methods of Analysis.

d) For mixed and blended fruit juices the brix of the product shall be declared in the label

Botanical Name	Fruit's Common Name	Minimum Brix level for reconstituted fruit juices and reconstituted purée	Minimum Juice and/or Purée Content (% v/v) <sup>b)</sup> for Fruit Nectars
<i>Ficus carica</i> L.	Fig	18.0	25.0
<i>Fortunella</i> Swingle sp.	Kumquat	(*) <sup>b)</sup>	(*) <sup>c)</sup>
<i>Fragaria x. ananassa</i> Duchense ( <i>Fragaria chiloensis</i> Duchesne x <i>Fragaria virginiana</i> Duchesne)	Strawberry	7.5	40.0
<i>Genipa americana</i>	"Genipap"	17.0	25.0
<i>Hippophae elaeagnaceae</i>	Sea Buckthorn	(*) <sup>b)</sup>	25.0
<i>Hippophae rhamnoides</i> L.	Buckthornberry = Sallow-thornberry	6.0	25.0
<i>Litchi chinensis</i> Sonn.	Litchi/Lychee	11.2	20.0
<i>Lycopersicon esculentum</i> L.	Tomato	5.0	50.0
<i>Malpighia</i> sp. (Moc. & Sesse)	Acerola (West Indian Cherry)	6.5	25.0
<i>Malus domestica</i> Borkh.	Apple	10	50.0
<i>Malus prunifolia</i> (Willd.) Borkh. <i>Malus sylvestris</i> Mill.	Crab Apple	15.4	25.0
<i>Mammea americana</i>	Mammee Apple	(*) <sup>b)</sup>	(*) <sup>c)</sup>
<i>Mangifera indica</i> L.	Mango	13.	25.0
<i>Morus</i> sp.	Mulberry	(*) <sup>b)</sup>	30.0
<i>Musa</i> species including <i>M. acuminata</i> and <i>M. paradisiaca</i> but excluding other plantains	Banana	12	25.0
<i>Passiflora edulis</i>	Yellow Passion Fruit	(*) <sup>b)</sup>	(*) <sup>c)</sup>
<i>Passiflora edulis</i> Sims. f. <i>edulis</i> <i>Passiflora edulis</i> Sims. f. <i>Flavicarpa</i> O. Def.	Passion Fruit	12 <sup>c)</sup>	25.0

<i>Passiflora quadrangularis</i>	Passion Fruit	(*) <sup>b)</sup>	(*) <sup>c)</sup>
<i>Phoenix dactylifera</i> L.	Date	18.5	25.0
<i>Pouteria sapota</i>	Sapote	(*) <sup>b)</sup>	(*) <sup>c)</sup>
<i>Prunus armeniaca</i> L.	Apricot	11.5	40.0
<i>Prunus avium</i> L.	Sweet Cherry	20.0	25.0
<i>Prunus cerasus</i> L.	Sour Cherry	14.0	25.0
<i>Prunus cerasus</i> L. cv. Stevensbaer	Stonesbaer	17.0	25.0
<i>Prunus domestica</i> L. subsp. <i>domestica</i>	Plum	12.0	50.0
<i>Prunus domestica</i> L. subsp. <i>domestica</i>	Prune	18.5	25.0
<i>Prunus domestica</i> L. subsp. <i>domestica</i>	Quetsche	12.0	25.0
<p>a) If a juice is manufactured from a fruit not mentioned in the above list, it shall, nevertheless, comply with all the provisions of the standard, except that the minimum Brix level of the reconstituted juice shall be the Brix level as expressed from the fruit used to make the concentrate.</p> <p>b) No data currently available. The minimum Brix level of the reconstituted juice shall be the Brix level as expressed from the fruit used to make the concentrate.</p> <p>c) Acid corrected as determined by the method for total titratable acids in the Section on Methods of Analysis.</p> <p>d) For mixed and blended fruit juices the brix of the product shall be declared in the label</p>			

Botanical Name	Fruit's Common Name	Minimum Brix level for reconstituted fruit juices and reconstituted purée	Minimum Juice and/or Purée Content (% v/v) <sup>b)</sup> for Fruit Nectars
<i>Prunus persica</i> (L.) Batsch var. <i>nucipersica</i> (Suckow) c. K. Schneid.	Nectarine	10.5	40.0
<i>Prunus persica</i> (L.) Batsch var. <i>persica</i>	Peach	10.5	40.0
<i>Prunus spinosa</i> L.	Sloe	6.0	25.0
<i>Psidium guajava</i> L.	Guava	8.5	25.0
<i>Punica granatum</i> L.	Pomegranate	12.0	25.0
<i>Pyrus arbustifolia</i> (L.) Pers.	Aronia/Chokeberry	(*) <sup>b)</sup>	(*) <sup>c)</sup>
<i>Pyrus communis</i> L.	Pear	12.0	40.0
<i>Ribes nigrum</i> L.	Black Currant	11.0	30.0
<i>Ribes rubrum</i> L.	Red Currant	10.0	30.0
<i>Ribes rubrum</i> L.	White Currant	10.0	30.0
<i>Ribes uva-crispa</i>	Red Gooseberry	(*) <sup>b)</sup>	30.0
<i>Ribes uva-crispa</i> L.	Goosberry	7.5	30.0
<i>Ribes uva-crispa</i> L.	White Goosberry	(*) <sup>b)</sup>	30.0
<i>Rosa canina</i> L.	Cynorrhodon	(*) <sup>b)</sup>	40.0
<i>Rosa sp.</i> L.	Rosehip	9.0	40.0
<i>Rubus chamaemorus</i> L.	Cloudberry	9.0	30.0
<i>Rubus chamaemorus</i> L. <i>Morus hybrid</i>	Mulberry	(*) <sup>b)</sup>	40.0
<i>Rubus fruitcosus</i> L.	Blackberry	9.0	30.0
<i>Rubus hispidus</i> (of North America) <i>R. caesius</i> (of Europe)	Dewberry	10.0	25.0
<i>Rubus idaeus</i> L. <i>Rubus strigosus</i> Michx.	Red Raspberry	8.0	40.0

<i>Rubus loganobaccus</i> L. H. Bailey	Loganberry	10.5	25.0
<i>Rubus occidentalis</i> L.	Black Raspberry	11.1	25.0
<i>Rubus ursinus</i> Cham. & Schldl.	Boysenberry	10.0	25.0
<i>Rubus vitifolius</i> x <i>Rubus idaeus</i> <i>Rubus baileyanus</i>	Youngberry	10.0	25.0
<i>Sambucus nigra</i> L. <i>Sambucus canadensis</i> .	Elderberry	10.5	50.0
<i>Solanum quitoense</i> Lam.	"Lulo"	(*) <sup>b</sup>	(*) <sup>c</sup>
<i>Sorbus aucuparia</i> L.	Rowanberry	11.0	30.0
<i>Sorbus domestica</i>	Sorb	(*) <sup>b</sup>	30.0
<i>Spondia lutea</i> L.	"Cajá"	10.0	25.0
<i>Spondias tuberosa</i> Arruda ex Kost.	"Umbu"	9.0	25.0
<i>Syzygium jambosa</i>	Pome Apple	(*) <sup>b</sup>	(*) <sup>c</sup>
<i>Tamarindus indica</i>	Tamarind (Indian date)	13.0	Adequate content to reach a minimum acidity of 0.5

<sup>a</sup> If a juice is manufactured from a fruit not mentioned in the above list, it shall, nevertheless, comply with all the provisions of the Standard, except that the minimum Brix level of the reconstituted juice shall be the Brix level as expressed from the fruit used to make the concentrate.

<sup>b</sup> No data currently available. The minimum Brix level of the reconstituted juice shall be the Brix level as expressed from the fruit used to make the concentrate.

<sup>c</sup> Acid corrected as determined by the method for total titratable acids in the Section on Methods of Analysis.

<sup>d</sup> For mixed and blended fruit juices the brix of the product shall be declared in the label

Botanical Name	Fruit's Common Name	Minimum Brix Level for Reconstituted Fruit Juices and Reconstituted Purée	Minimum Juice and/or Purée Content (% v/v) <sup>b</sup> for Fruit Nectars
<i>Theobroma cacao</i> L.	Cocoa pulp	14.0	50.0
<i>Theobroma grandiflorum</i> L.	"Cupuaçu"	9.0	35.0
<i>Vaccinium macrocarpon</i> Aiton <i>Vaccinium oxycoccos</i> L.	Cranberry	7.5	30.0
<i>Vaccinium myrtillus</i> L. <i>Vaccinium corymbosum</i> L. <i>Vaccinium angustifolium</i>	Bilberry/Blueberry	10.0	40.0
<i>Vaccinium vitis-idaea</i> L.	Lingonberry	10.0	25.0
<i>Vitis Vinifera</i> L. or hybrids thereof <i>Vitis Labrusca</i> or hybrids thereof	Grape	16.0	50.0
	Other: High acidity		Adequate content to reach a minimum acidity of 0.5
	Other: High pulp content, or Strong flavour		25.0
	Other: Low acidity, Low pulp content, or Low/medium flavour		50.0

<sup>a</sup> If a juice is manufactured from a fruit not mentioned in the above list, it shall, nevertheless, comply with all the provisions of the Standard, except that the minimum Brix level of the reconstituted juice shall be the Brix level as expressed from the fruit used to

make the concentrate.

b) No data currently available. The minimum Brix level of the reconstituted juice shall be the Brix level as expressed from the fruit used to make the concentrate.

c) Acid corrected as determined by the method for total titratable acids in Clause 10 on Methods of Analysis.

d) For mixed and blended fruit juices the brix of the product shall be declared in the label

### 5.1.2.2 Syrups

Syrups, liquid sucrose, invert sugar solution, invert sugar syrup, fructose syrup, liquid cane sugar, isoglucose and high fructose syrup may be added only to fruit juice from concentrate (4.2.1), concentrated fruit juices (4.2.2), concentrated fruit purée (4.2.5) and fruit nectars (4.2.6).

Both syrups and acidifying agents shall not be added to the same fruit juice.

### 5.1.2.3 Honey and sugars derived from fruits

Honey and Sugars derived from fruits may be added only to fruit nectars

### 5.1.2.4 Lemon and lime juice

Lemon (*Citrus limon* (L.) Burm. f. *Citrus limonum* Rissa) juice or lime (*Citrus aurantifolia* (Christm.)) juice, or both, may be added to fruit juice up to 3 g/L anhydrous citric acid equivalent for acidification purposes to unsweetened juices as defined in 4.1.1, 4.1.2, 4.1.3, 4.1.4 and 4.1.5.

Lemon juice or lime juice, or both, may be added up to 5 g/L anhydrous citric acid equivalent to fruit nectars as defined in 4.2.6.

### 5.1.2.5 Citrus reticulata juice

The juice from *Citrus reticulata* and/or hybrids with *reticulata* may be added to orange juice in an amount not to exceed 10 % of soluble solids of the *reticulata* to the total of soluble solids of orange juice.

### 5.1.2.6 Salt and spices and aromatic herbs

Salt and spices and aromatic herbs (and their natural extracts) may be added to tomato juice.

### 5.1.2.7 Fortification

For the purposes of product fortification, essential nutrients such as vitamins and minerals may be added to fruit juice (4.2.1). Such additions shall comply with national legislation established for this purpose.

NOTE Any optional ingredients added are subject to ingredient labelling requirements (see Clause 9).

## 5.2 Specific requirement

The fruit juices and fruit nectars shall have the characteristic colour, aroma and flavour of juice from the same kind of fruit from which it is made.

The fruit juices and fruit nectars shall conform to the requirements in Table 2.

**Table 2 — Requirements for fruits juices and nectars**

Characteristic	Requirement	Method of test
Ethanol content, %, max.	0.3	ISO 2448
Acid insoluble ash, %, max.	0.02	ISO 763
Minimum Juice and/or purée content (% v/v) <sup>b)</sup>	See Table 1	GMP
Brix, minimum	See Table 1	ISO 2173
CO <sub>2</sub> content (if added)	Not less than one volume	Annex A

### 5.3 Verification of composition, quality and authenticity

Fruit juices and nectars shall be subject to testing for authenticity, composition, and quality where applicable and where required.

The verification of a sample's authenticity/quality may be assessed by comparison of data for the sample, generated using appropriate methods included in the Standard, with that produced for fruit of the same type and from the same region, allowing for natural variations, seasonal changes and for variations occurring due to processing.

## 6 Food additives and processing aids

Food additives listed in Tables 1 and 2 ) may be used; Food processing aids listed in Table 3 may be used in the processing of products subject to this standard.

**Table3 — Maximum level of use of food processing aids in line with good manufacturing practices**

Function	Substance
Antifoaming Agent	Polydimethylsiloxane <sup>a)</sup>
Clarifying Agents	Adsorbent clays (bleaching, natural or activated earths)
	Adsorbent resins
	Activated carbon (only from plants)
	Bentonite
	Calcium hydroxide <sup>b)</sup>
	Cellulose
	Chitosan
	Colloidal silica
	Diatomaceous earth
	Gelatin (from skin collagen)
Ion exchange resins (cation and anion)	
Filtration Aids	Isinglass <sup>c)</sup>
Flocculating Agents	Kaolin
	Perlite
	Polyvinylpolypyrrolidone
	Potassium casseinate <sup>c)</sup>

	Potassium tartrate <sup>b)</sup>
	Precipitated calcium carbonate <sup>b)</sup>
	Rice hulls
	Silicasol
	Sodium caseinate <sup>c)</sup>
	Sulphur dioxide <sup>b), d)</sup>
	Tannin
Enzyme preparations <sup>e)</sup>	Pectinases (for breakdown of pectin), Proteinases (for breakdown of proteins), Amylases (for breakdown of starch) and Cellulases (limited use to facilitate disruption of cell walls).
Packing gas <sup>f)</sup>	Nitrogen Carbon dioxide
<p>a) 10 mg/L is the maximum residue limit of the compound allowed in the final product.</p> <p>b) Only in grape juice</p> <p>c) Use of these processing aids should take into account their allergenic potential. If there is any carryover of these processing aids into finished product, they are subject to ingredient declaration in accordance with US 38.</p> <p>d) 10 mg/L maximum limit (as residual SO<sub>2</sub>) when determined in accordance with ISO 5522 and ISO 5523</p> <p>e) Enzyme preparations may be used as processing aids provided these preparations do not result in a total liquefaction and do not substantially affect the cellulose content of the processed fruit.</p> <p>f) May also be used for example, for preservation</p>	

## 7 Contaminants

### 7.1 Pesticide residues

The products covered by the provisions of this standard shall conform to those maximum residue limits for pesticides established by the Codex Alimentarius Commission for these products.

### 7.2 Metal contaminants

Fruit juices and nectars shall not exceed levels of metals specified in Table 4

**Table; 4 Metal contaminants requirements**

Class	Maximum (mg/kg)	Method of test
Arsenic (as As )	0.2	ISO 6634
Copper (as Cu)	1.5	ISO 7952
zinc (as Zn)	5	ISO 6636-2,
Lead (as Pb)	0.03	ISO 6633

## 8 Hygiene

8.1 The products covered by the provisions of this Standard shall be prepared and handled in accordance with US EAS 39 and other relevant Codes of Hygienic Practice and Codes of Practice.

8.2 The products shall conform to microbiological criteria in Table 5.

**Table 5 – Microbiological limits in fruit juices and nectars**

Microorganism	Limit	Method of test
Total plate count, (cfu/g), maximum	1000	ISO 4833 - 2
<i>Eschericia coli</i> , (cfu/g), maximum	Absent	ISO 7251
Yeasts and moulds, (cfu/g), maximum	30	ISO 21527-1

## 9 Packaging

Fruit juices and nectars shall be packaged in food grade containers

## 10 Weights and measures

Fruit juices and nectars shall be packaged in accordance with the Weights and Measures of Partner States' regulations

## 11 Labelling

### 11.1 General labeling requirements

In addition to the requirements of EAS 38, 803,804 and 805 the following specific labelling requirements shall apply and shall be legibly and indelibly marked on the container;9.2.1 Name of the product

#### 11.1.1 General

The name of the product shall bear the name of the fruit used as defined in 4.1.

The fruit name shall be filled in the blank of the product name mentioned under this clause. These names may only be used if the product conforms to the definition in 4.1 or which otherwise conform to this standard.

#### 11.1.2 Fruit Juice

The name of the product shall be “\_\_\_\_\_ juice” or “juice of \_\_\_\_\_”.

#### 11.1.3 Concentrated fruit juice

The name of the product shall be “concentrated \_\_\_\_\_ juice” or “\_\_\_\_\_ juice concentrate”.

#### **11.1.4 Water extracted fruit juice**

The name of the product shall be “water extracted \_\_\_\_\_ juice” or “water extracted juice of \_\_\_\_\_”.

#### **11.1.5 Fruit Purée**

The name of the product shall be “\_\_\_\_\_ purée” or “Purée of \_\_\_\_\_”.

#### **11.1.6 Concentrated Fruit Purée**

The name of the product shall be “concentrated \_\_\_\_\_ purée” or “\_\_\_\_\_ purée concentrated”.

#### **11.1.7 Fruit Nectars**

The name of the product shall be “\_\_\_\_\_ nectar” or “nectar of \_\_\_\_\_”.

#### **11.1.8 Fruit juice blend**

In the case of fruit juice products (4.1) manufactured from two or more fruits, the product name shall include the names of the fruit juices comprising the mixture in descending order of proportion by weight (m/m) or the words “fruit juice blend”, “a fruit juice mixture”, “mixed fruit juice” or other similar wording.

#### **11.1.9 Products from concentrate**

For fruit juices, fruit nectars and mixed fruit juice/nectar, if the product contains or is prepared from concentrated juice and water or the product is prepared from juice from concentrate and directly expressed juice or nectar, the words “from concentrate” or “reconstituted” shall be entered in conjunction with or close to the product name, standing out well from any background, in clearly visible characters, not less than half the height of the letters in the name of the juice.

#### **11.2.2 Additional requirements**

##### **11.2.2.1 Products prepared by physically removing water from the fruit juice**

For fruit juices, fruit nectars, fruit purée and mixed fruit juices/nectars/purées, if the product is prepared by physically removing water from the fruit juice in an amount sufficient to increase the Brix level to a value at least 50% greater than the Brix value established for reconstituted juice from the same fruit, as indicated in Table 1, it shall be labelled “concentrated”.

##### **11.2.2.2 Products one or more of the optional sugar or syrup ingredients are added**

For products defined in 4.1.1 to 4.1.5, where one or more of the optional sugar or syrup ingredients are added, the product name shall include the statement called “sugar(s) added” after the fruit juice or mixed fruit juice’s name.

When food additive sweeteners are employed as substitutes for sugars in fruit nectars and mixed fruit nectars, the statement, “with sweetener(s),” shall be included in conjunction with or in close proximity to the product name.

##### **11.2.2.3 Products to be reconstituted before consumption**

Where concentrated fruit juice, concentrated fruit purée, concentrated fruit nectar or mixed concentrated fruit juice/nectar/purée is to be reconstituted before consumption as fruit juice, fruit purée, fruit nectar or mixed fruit juices/nectars/purées, the label shall bear appropriate directions for reconstitution on a volume/volume basis with water to the applicable Brix value in the Table 1 for reconstituted juice.



#### **11.2.2.4 Varietal denominations**

Distinct varietal denominations may be used in conjunction with the common fruit names on the label where such use is not misleading.

#### **11.2.2.5 Juice content declaration**

Fruit nectars and mixed fruit nectars shall be conspicuously labelled with a declaration of “juice content \_\_\_%” with the blank being filled with the percentage of purée and/or fruit juice computed on a volume/volume basis.

The words “juice content \_\_\_%” shall appear in close proximity to the name of the product in clearly visible characters, not less than half the height of the letters in the name of the juice.

#### **11.2.2.6 Nutrition declaration**

Any added essential nutrients declaration shall be labelled in accordance with US EAS 803, US EAS 804, US EAS 805,.

An ingredient declaration of “ascorbic acid” when used as an antioxidant does not, by itself, constitute a “Vitamin C” claim.

For fruit nectars in which a food additive sweetener has been added in order to replace wholly or in part the added sugars or other sugars or syrups, including honey and/or sugars derived from fruits any nutrient content claims related to the reduction in sugars shall conform to US EAS 803, US EAS 804 and US EAS 805,.

#### **11.2.2.7 Pictorial representations**

A pictorial representation of fruit(s) on the label shall not mislead the consumer with respect to the fruit so illustrated.

#### **11.2.2.9 Products containing added carbon dioxide**

Where the product contains added carbon dioxide more than one volume the term “carbonated” or “sparkling” shall appear on the label near the name of the product.

#### **11.2.2.10 Tomato juice containing spices and/or aromatic herbs**

Where tomato juice contains spices and/or aromatic herbs in accordance with Section 5.1.2.6 the term “spiced” and/or the common name of the aromatic herb shall appear on the label near the name of the juice.

#### **11.2.2.11 Juice containing added pulp, cells, aromatic substances or volatile flavour components**

Pulp and cells added to juice over that normally contained in the juice shall be declared in the list of ingredients.

Aromatic substances, volatile flavour components, pulp and cells added to nectar over that normally contained in the juice shall be declared in the list of ingredients.

### **11.3 Non-retail containers**

Information for non-retail containers not destined to final consumers shall be given either on the container or in accompanying documents, except that the name of the product, lot identification, net contents and the name and address of the manufacturer, packer, distributor or importer, as well as storage instructions, shall appear on the container, except that for tankers the information may appear exclusively in the accompanying documents.

However, lot identification, and the name and address of the manufacturer, packer, distributor or importer may be replaced by an identification mark, provided that such a mark is clearly identifiable with the accompanying documents. For non retail containers, the information required shall be given either on the container or in accompanying documents, except that the name of the product, lot identification, and the name and address of the manufacturer or packer shall appear on the container.

## **12 Methods of sampling**

The fruit nectar and concentrate shall be sampled in accordance to ISO. 874

## **ANNEX A: Method of measuring gas volume**

### **Principle**

The method involves sniffing of the top gas. The pressure reading should drop to 2 psi, to remove the air before testing for carbon dioxide volume. In so doing correction of altitude as per table should be considered as pressure is affected by altitude.

The apparatus consists of pressure gauge having a hollow spike with holes in its side. The bottle is inserted from the side into the slot provided in the neck of the carbon dioxide tester and is secured in place by tightening with a threaded system. The pressure gauge is inserted until the needle point touches the crown cork. There is a snift valve on the gauge stem which is kept closed until the needle point of the pressure gauge is forced through the crown cork. The reading is noted on the gauge.

### **Procedure**

Clamp the bottle in the frame of the gas volume tester. Pierce the crown cork but do not shake the bottle. Snift off the top gas quickly until the gauge reading drops to zero. Make certain to close the valve instantly the needle touches zero in the pressure gauge. Shake the bottle vigorously until the gauge gives the reading that additional shaking does not change. Record the pressure. Note the temperature and record. Obtain the volume of gas from pressure-temperature chart (Carbon dioxide chart)

## Bibliography

- [1] . DEAS 77-1: 2018: **Fruit juices and nectars Specification**

PUBLIC REVIEW DRAFT JANUARY 2019