DUS DEAS 893

DRAFT UGANDA STANDARD

First Edition
2016-mm-dd

Chili sauce — Specification

Reference number
DUS DEAS 893: 2016

Compliance with this standard does not, of itself confer immunity from legal obligations

A Uganda Standard does not purport to include all necessary provisions of a contract. Users are responsible for its correct application

The Executive Director
Uganda National Bureau of Standards
P.O. Box 6329
Kampala
Uganda
Tel: 256 417 333 250/1/2/3
Fax: 256 414 286 123
E-mail: info@unbs.go.ug
Web: www.unbs.go.ug

National foreword

Uganda National Bureau of Standards (UNBS) is a parastatal under the Ministry of Trade, Industry and Cooperatives established under Cap 327, of the Laws of Uganda, as amended. UNBS is mandated to co-ordinate the elaboration of standards and is

(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 representatives of consumers, traders, academicians, manufacturers, government and other stakeholders.

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 893: 2016*, Chili sauce — Specification,* is identical with and has been reproduced from a Draft East African Standard, DEAS 893: 2016*, Chili sauce — Specification,* and is being proposed for adoption as a Uganda Standard.

This standard was developed by the Food and agriculture Standards Technical Committee (UNBS/TC 2).

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

DRAFT EAST AFRICAN STANDARD

Chili sauce — Specification

EAST AFRICAN COMMUNITY

First Edition 2016

Copyright notice

East African Community
P.O.Box 1096
Arusha
Tanzania
Tel: 255 27 2504253/8
Fax: 255 27 2504481/2504255
E-mail: eac@eachq.org
Web: www.eac-quality.net

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.

In order to achieve this objective, the Community established an East African Standards Committee mandated to develop and issue East African Standards.

The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. 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 procedures of the Community.

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.

DEAS …. was prepared by Technical Committee EASC/TC 016

Chilli sauce — Specification

1 Scope

This Draft East African Standard prescribes specification and methods of tests and sampling for chilli sauce for human consumption.

2 Normative references

The following referenced documents are indispensable for the application for this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies;

ISO 6633:1984 Fruits, vegetables and derived products -- Determination of lead content -- Flameless atomic absorption spectrometric method

EAS 38, Packaging, marking and labeling of foods

EAS 39, General principles of food hygiene — Code of practice

EAS 42, Microbiology — General guidance for the enumeration of microorganisms — Colony count technique at 30 °C

ISO 874, Fresh fruits and vegetables – Sampling

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

ISO 750 Fruits and Vegetables – Determination of Titratable Acidity

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

ISO 17240:2004 Fruit and vegetable products -- Determination of tin content -- Method using flame atomic absorption spectrometry

ISO 7952:1994 Fruits, vegetables and derived products -- Determination of copper content -- Method using flame atomic absorption spectrometry

ISO 6636-2:1981 Fruits, vegetables and derived products -- Determination of zinc content -- Part 2: Atomic absorption spectrometric method

ISO 17239:2004 Fruits, vegetables and derived products -- Determination of arsenic content -- Method using hydride generation atomic absorption spectrometry
CODEX STAN 192 General standard for food additives
ISO 4833 (all parts), *Microbiology of the food chain - Horizontal methods for the enumeration of microorganisms*
ISO 21527-1, *Microbiology of food and animal feedingstuffs – Horizontal methods for the enumeration of yeasts and moulds*
ISO 7251, *Microbiology of food and animal feedingstuffs – Horizontal methods for the detection and enumeration of presumptive Escherichia coli – Most Probable Number technique*

ISO 6579, Microbiology of food and animal feedingstuffs – Horizontal methods for the detection of *Salmonella spp.*

3 Terms and definitions

For the purpose of this standard the following definitions shall apply:

3.1 chilli sauce
A product prepared from sound chillies. Fresh chilies, tomato paste, common salt, spices, sugar, and vinegar, food additives and other optional ingredients may be added to chill sauce.

3.2 chillies
The whole, mature ripe pungent fruits of botanical species C*apsicum frutescens* (Linnaeus). The fruits vary in colour from orange red to yellowish green.

3.3
foreign matter
any organic or inorganic substances which affects the appearance, texture and typical smell/taste of the chilli sauce.

3.4
sound
Not overripe, not soft and free from diseases or insect damage, or bruising or physical injuries affecting keeping quality of the fruit.

3.5
Food grade packaging material
Any material which when it comes in contact with food or if the area near food is unlikely to contaminate food with harmful materials

3.6

mild chilli sauce

chilli sauce with low pungency with a Scoville scale measure of 100 – 10 000

3.7

hot chilli sauce

chilli sauce high pungency with a Scoville scale measure of above 10 000

NOTE Scoville scale is a measurement of pungency of chilli peppers using Scoville organoleptic test

4 Requirements

4.1 General requirements

4.1.1 Chilli sauce shall be a product derived from sound and wholesome chillies with or without tomatoes; practically free from insect or fragments, fungal or any other blemish affecting the quality and safety of the product. Chill sauce shall possess good body and consistency, and uniform colour; be practically free from defects.

4.1.2 Ingredients

Substances that may be added to chilli sauce include chillies, mixed spices, lemon, juice, tamarind extract, vinegar, sugar, edible salt and tomato.

4.1.3 Additives

Food additives shall be used as per CODEX STAN 192.

4.1.4 Organoleptic properties

The finished product shall have the characteristic taste and flavor of chilli sauce and shall be free from burnt or any other objectionable flavours. It shall be of good keeping quality and shall show no sign of fermentation.

4.1.5 Fillers and stabilizers

The product may contain artificial fillers such as cereal products or other permitted stabilizers.

4.2 Specific requirements

Chill sauce shall conform to the chemical requirements prescribed in table 1.

Table 1: Chemical requirements for chilli sauce

Characteristic	Requirement	Test method
Total soluble solids percent by mass (Brix), percent by mass at 20 °C,	7 - 18	ISO 2173
Acidity expressed as anhydrous acetic acid, percent by mass, min.	0.8	ISO 750
Specific gravity at 20°C	1.04 -1.11	Annex A

5 Contaminants

5.1 Pesticide residues

Chilli sauce shall conform to the pesticide residue limits prescribed by the Codex Alimentarius Commission of the respective commodity.

5.2 Metal contaminants

Chilli sauce shall not contain any metallic contaminants in excess of the quantities specified in Table 2.

Table 2 – Limit for metal contaminants for chilli sauce

Characteristics	Maximum (mg/kg) limit	Test method
Arsenic (as As)	0.5	ISO 17239:2004
Tin (as Sn)	250	ISO 17240:2004
Copper (as Cu)	5	ISO 7952:1994
zinc (as Zn)	5	ISO 6636-2:1981
Lead (as Pb)	0.1	ISO 6633:1984

6 Hygiene

6.1 Chilli sauce shall be prepared under hygienic conditions in accordance with EAS 39.

6.2 Microbiological limits

Chilli sauce shall be free from pathogenic organisms and shall comply with the microbiological limits provided in table 3, when determined by the methods shown in table 3.

Table 3 — Microbiological limits for chilli sauce

S/N	Type of micro-organism	Limits (number of count)	Test methods
i	Total viable counts cfu/ml, max	10	ISO 4833 (all parts)
ii	Yeasts and moulds cfu/ml	shall be absent	ISO 21527-1
iii	*Escherichia coli* MPN/ml	shall be absent	ISO 7251
iv	Salmonella per ml	shall be absent	ISO 6579

7 Packaging

7.1.1 Chilli sauce shall be packed in suitable food grade containers having no action on the products. The containers shall be free from other products that may lead to contamination and alter the quality, composition, flavour, odour and taste of the products. Containers shall be air tight and shall be provided with tamper- proof seals and closures. Containers shall preclude contamination with or proliferation of microorganisms in the products during storage and transport.

7.1.2 The headspace of each container shall be 5 % of the fill.

8 Labelling

In addition to the requirements of EAS 38, the following specific labelling requirements shall apply and shall be legibly and indelibly marked:

a) Name of product including the type shall be “Mild chilli sauce” or “Hot chilli sauce”;
b) Name, physical and postal address of manufacturer
c) Country of origin
d) Date of manufacture and expiry date
e) List of ingredients
f) Net content
g) Storage condition
h) Batch number in code or in clear.

Annex A
(normative)

Determination of specific gravity

A.1 Principle

The method involves use of specific gravity bottle which enables a liquid's density to be measured accurately by reference to an appropriate working fluid which is water. The specific gravity bottle is weighed empty, full of water, and full of a liquid whose specific gravity is desired. The ratio of the mass of a unit volume of a substance to the mass of a unit volume of water is then calculated as the specific gravity.

A.2 Apparatus

Specific gravity bottle/ pycnometer

A.3 Procedure

Clean and thoroughly dry the specific gravity bottle and weigh it. Fill it up to the mark with freshly boiled and cooled water, which has been maintained at a temperature of 20°C ± 1°C and weigh. Remove the water, dry the bottle again and fill it with the material maintained at the same temperature. Weight the bottle again.

A.4 Calculation

A.4.1 *Specify the temperature of testing*

A.4.*1.1* *Calculate as follows:*

$$\text{Specific gravity at } 20^0\text{C}/20^0\text{C} = \frac{C - A}{B - A}$$

Where C = mass in gram of the specific gravity bottle with the material
A = mass in grams of the empty specific gravity bottle, and
B = mass in grams of the specific gravity bottle with water.

A.4.1.2 To find out the degree Brix, the table given in Annex A shall be used.

ANNEX A – Degrees brix. Specific gravity and degrees baume of sugar solutions

Degrees brix of Per cent by	Specific gravity A 25°/20°	Specific gravity at 25°/4°	Degrees Baume (Modulus 145)

0.0	1.000 000	0.998 234	0.00
0.2	1.000 78	0.999 010	0.11
0.4	1.001 55	0.999 786	0.22
0.6	1.002 33	1.000 563	0.34
0.8	1.003 11	1.001 342	0.45
1.0	1.003 89	1.002 120	0.56
1.2	1.004 67	1.002 897	0.67
1.4	1.005 45	1.003 675	0.79
1.6	1.006 23	1.004 453	0.90
1.8	1.007 01	1.005 234	1.01
2.0	1.007 79	1.006 015	1.12
2.2	1.008 58	1.006 796	1.23
2.4	1.009 36	1.007 580	1.34
2.6	1.010 15	1.008 363	1.46
2.8	1.010 93	1.009 148	1.57
3.0	1.011 72	1.009 934	1.68
3.2	1.012 51	1.010 721	1.79
3.4	1.013 30	1.011 510	1.90
3.6	1.014 09	1.012 298	2.02
3.8	1.014 88	1.013 089	2.13
4.0	1.015 57	1.013 881	2.24
4.2	1.016 47	1.014 673	2.35
4.4	1.017 26	1.015 467	2.46
4.6	1.018 06	1.016 261	2.57
4.8	1.018 86	1.017 058	2.68
5.0	1.019 65	1.017 854	2.79
5.2	1.101 45	1.018 652	2.91
5.4	1.021 25	1.019 451	3.02
5.6	1.022 06	1.020 251	3.13
5.8	1.022 86	1.021 054	3.24
6.0	1.023 66	1.021 855	3.35
6.2	1.024 47	1.022 659	3.46
6.4	1.025 27	1.023 463	3.57
6.6	1.026 08	1.024 270	3.69
6.8	1.026 89	1.025 077	3.80
7.0	1.027 70	1.025 885	3.91
7.2	1.028 51	1.026 694	4.02
7.4	1.029 32	1.027 504	4.13
7.6	1.030 13	1.028 316	4.24
7.8	1.030 95	1.029 128	4.35

8.0	1.031 76	1.029 942	4.46
8.2	1.032 58	1.030 757	4.58
8.4	1.033 40	1.031 573	4.69
8.6	1.034 22	1.032 391	4.80
8.8	1.035 04	1.033 209	4.91
9.0	1.035 86	1.034 029	5.02
9.2	1,036 68	1.034 850	5.13
9.4	1.037 50	1.035 671	5.24
9.6	1.038 33	1.036 494	5.35
9.8	1.039 15	1.037 318	5.46
10.0	1.039 98	1.038 143	5.57
10.2	1.040 81	1.038 970	5.68
10.4	1.041 64	1.039 797	5.80
10.6	1.042 64	1.040 626	5.91
10.8	1.043 00	1.041 456	6.02

Annex A Continued

11.0	1.044 13	1.042 298	6.13
11.2	1.044 97	1.043 121	6.24
11.4	1.045 80	1.043 954	6.35
11.6	1.046.64	1.044 788	6.46
11.8	1.047 47	1.045 625	6.57
12.0			
12.2	1.048 31	1.046 462	6.68
12.4	1.049 15	1.047 300	6.79
12.6	1.049 99	1.048 140	6.90
12.8	1.050 84	1.048 980	7.02
	1.051 68	1.049 822	7.13
13.0			
13.2	1.052 52	1.050 665	7.24
13.4	1.053 37	1.051 510	7.35
13.6	1.054 22	1.052 356	7.46
13.8	1.055 06	1.053 202	7.57
14.0	1.055 91	1.054 050	7.68
14.2	1.056 77	1.059 165	
14.4	1.057 62	1.060 022	8.34
14.6	1.058 47	1.050 880	8.45
14.8	1.059 33	1.061 733	8.56
16.0	1.050 18	1.062 598	8.67
16.2	1.065 34		8.78
16.4	1.066 21	1.063 460	8.89
16.6	1.067 07	1.064 324	9.00
16.8	1.067 94	1.065 188	9.11
17.0	1.068 81	1.066 054	9.22
17.2	1.069 68	1.066 921	9.33
17.4	1.070 55	1.067 799	9.45
17.6	1.071 42	1.066 658	9.56
17.8	1.072 29		9.67
	1.073 17	1.069 529	9.78
18.0		1.070 400	9.89
18.2	1.074 04	1.071 273	10.00
18.4	1.074 92	1.072 147	11.00
18.6	1.075 80	1.073 023	10.11
18.8	1.076 68	1.073 900	10.33
19.0	1.077 56	1.074 777	10.44

19.2		1.075 657	
	1.078 44		10.55
19.4	1.079 32	1.076 537	10.66
19.6	1.080 21	1.077 449	10.77
19.8	1.081 10	1.078 320	10.88
20.0	1.081 98	1.079 187	10.99
20.2	1.082 87	1.080 071	
20.4	1.083 76	1.080 959	11.10
20.6		1.081 848	11.21
20.8	1.084 65	1.082 737	11.32
	1.085 54	1.083 628	11.43
21.0	1.086 44	1.084 520	11.54
21.2	1.087 23	1.084 414	11.65
21.4	1.088 23	1.086 309	11.76
21.6	1.089 13	1.087 205	11.87
21.8	1.090 03	1.088 101	11.98
	1.090 93	1.089 000	12.09
22.0	1.091 83		
22.2	1.091 73	1.089 900	12.20
22.4	1.093 64	1.090 802	12.31
22.6	1.094 54	1.091 704	12.42
22.8	1.095 54	1.092 607	12.52
	1.095 45	1.093 513	12.63.

Annex A Continued

23.0	1.096 36	1.094 420	12.74
23.2	1.097 27	1.095 328	12.85
23.4	1.098 18	1.096 236	12.96
23.6	1.099 09	1.097 147	13.07
23.8	1.000 00	1.098 058	13.18
24.0		1.098 971	13.29
24.2	1.100 92	1 099 886	13.40
24.4	1.101 83	1.100 802	13.51
24.6	1.102 75	1.101 718	13.62
24.8	1.103 67	1.102 637	13.73
25.0	1.104 59	1.103 557	13.84
25.2	1.105 51	1.105 400	13.95
25.4	1.106 43	1.106 324	14.06
25.6	1.107 36	1.107 248	14.17
25.8	1.108 28	1.108 175	14.28
26.0	1.109 21	1.109 103	14.39
26.2	1.110 14	1.110 033	14.49
26.4	1.111 06	1.110 963	14.60
26.6	1.112 00	1.111 895	14.71
26.8	1.112 93 1.113 86	1.112 828	14.82
27.0	1.114 80	1.113 763	14.93
27.2	1.115 73 1.116 67	1.114 697	15.04
27.4	1.117 61	1.115 635	15.15
27.6	1.118 55 1.119 49	1.116 572	15.26
27.8	1.120 43		15.37
28.0	1.121 38 1.122 32	1.117 512	
28.2	1.123 27 1.124 22	1.120 453	15.48
28.4	1.125 17	1.119 395	15.59
28.6	1.126 12 1.127 07	1.120 339	15.69
28.8	1.128 02	1. 121 284	15.80
29.0	1.129 98 1.130 93	1.122 231	15.91
29.2	1.130. 89	1.123 179	16.02
29.4	1.131 85 1.132 81	1.124 128	16.13
29.6	1.133 78	1.125 128	16.24
29.8	1.134 74 1.135 70	1.226 030	16.35

30.0	1.136 67		16.46
	1.137 64		
30.2	1.138 61	1.126 984	
	1.139 58		
30.4	1.140 55	1.127 939	16.57
30.6	1.141 52	1.128 896	16.67
	1.142 50		
30.8	1.143 47	1,129 853	16.78
31.0	1.144 45	1.130 812	16.89
	1.145 43		
31.2	1.146 41	1.131 773	17.00
31.4	1.147 39	1.132 735	17.11
	1.148 37		
31.6	1.149 36	1.133 698	17.22
31.8	1.150 34	1.134 663	17.33
32.0		1.135 628	17.43
32.2		1.136 596	17.54
32.4		1.137 565	17.65
32.6		1.138 534	17.76
32.8		1.139 506	17.87
33.0		1.140 479	17.96
33.2		1.141 453	18.08
33.4		1.142 420	18.19
33.6		1.143 405	18.30
33.8		1.144 384	18.41
34.0		1.145 363	18.52
34.2		1.146 345	18.63
34.4		1.147 328	18.73
34.6		1.148 313	18.84
			18.95

34.8	1.151 33	1.149 298	19.06
35.0	1.152 32 1.533 1	1.150 286	19.17
35.2	1.154 30	1.151 275	19.28
35.4	1.155 30	1.152 265	19.38
35.6	1.56 29	1.153 256	19.40
35.8	1.157 29	1.154 249 1.55 242	19.60
36.0	1.158 28	1.155 238	19.71
36.2	1.159 28	1.156 235 1.157 233	19.81
36.4	1.160 28	1.158 233	19.92
36.6	1.161 28	1.159 233 1.160 236	20.03
36.8	1.162 28	1.161 236	20.14
37.0	1.163 29	1.162 240 1.163 245 1.164 252	20.25 20.35
37.2	1.164 30	1.165 259 1.166 269	20.46
37.4	1.165 30 1.166 31	1.167 281 1.168 293 1.169 307	20.57 20.68
37.6	1.167 32	1.170 322 1.171 340	20.78
37.8	1.168 33	1.172 359	20.89
38.0	1.169 34	1.173 379 1.174 400	21.00
38.2	1.170 36	1.175 423	21.11
38.4	1.171 38	1.176 447 1.177 473	21.21
38.6	1.172 39	1.178 501 1.179 527	21.32
38.8	1.173 41	1.180 560	21.43
39.0	1.174 43	1.181 592 1.182 625	21.54
39.2	1.175 45	1.183 660	21.64
39.4	1.176 48	1.184 696 1.185 734	21.75
39.6	1.177 50	1.186 773	21.86
39.8	1.178 53	1.187 814 1.188 856	21.97
40.0	1.179 56	1.189 901 1.190 946	22.07
40.2	1.180 58	1.191 993	22.18
40.4	1.181 62		22.29
40.6	1.182 65	1.193.041	22.39
40.8	1.183 68	1.194.090	22.50
41.0	1.184 72	1.195 141	22.61
41.2	1.185 75	1.196 193	22.72
41.4	1.186 79		22.82
41.6	1.187 83	1.197 247	22.93
41.8	1.188 87	1.198 303 1.199 360	23.04
42.0	1.189 92	1.200 420	23.14
42.2	1.190 96	1.201 480	23.25
42.4	1.192 01	1.202 540	23.36
42.6	1.193 05	1.203 603	23.46

46.0	1.210 01	1.207 870	25.17
46.2	1.211 08	1.208 940	25.27
46.4	1.212 15	1.210 013	25.38
56.6	1.213 23	1.211 086	25.48
46.8	1.214 31	1.212 162	25.59
47.0	1.215 38	1.213 238	25.70
47.2	1.216 46	1.214 317	25.80
47.4	1.217 55	1.215 395	25.91
47.6	1.218 63	1.216 476	26.01
47.8	1.219 71	1.217 559	26.12
48.0	1.220 80	1.218 643	26.23
48.2	1.221 89	1.219 729	26.33
48.4	1.222 98	1.220 815	26.44
48.6	1.224 06	1.221 904	26.54
48.8	1.225 16	1.222 995	26.65
49.0	1.226 25	1.224 086	26.75
49.2	1.227 35	1.225 180	26.86
49.4	1.228 44	1.226 274	26.96
49.6	1.229 54	1.227 371	27.07
49.9	1.230 64	1.228 469	27.18
50.0	1,213 74	1.229 567	27.80
50.2	1.232 84	1.230 668	27.39
50.4	1 233 95	1.231 770	27.49
50.6	1.235 06	1.232 874	27.60
50.8	1.236 16	1.233 979	27.70