Material A

Product Specification

IQF Cob Corn Peaches & Cream

Product Code(s): 00178 | Revision: 04 | Effective Date: 2021-04-22

Parameters	Values
Description	IQF Whole Kernel Corn on the Cob (Grade B) means it possesses similar varietal characteristics – good flavor typical of sweet corn, fair color, fairly tender, fairly well cut and fairly free from defects
Brix	10 +/- 2
Color	The product possesses a light creamy yellow kernel and a subtle yellow kernel in an ideal ratio of 50:50. Not more than 5 discolored or decayed kernels per pound (454 g).
Botanical Name	Zea mays
Product Shape & Size	8-10 mm grain diameter
Storage	-18 Degrees or Below
Packaging	Packed in food grade LDPE blue color poly liner with 5 ply master carton
Net Weight	10 Kgs
No. Of Boxes/Weight per FCL	2300 boxes/23 MT (Net Weight)

MICROBIOLOGICAL PARAMETERS

Total Plate Count (cfu/g)	Yeast & Mold (cfu/g)	Coliforms (cfu/g)	E-Coli (cfu/g)	Salmonella in 25 gms	Listeria (monocytogenes (cfu/g)
< 10,000	< 1000	< 100	Negative	Absent	Absent

Nutrients per 100g	
Calories	88.00
Fat (g)	0.77
Saturated Fat (g)	0.18
Trans Fat (g)	0
Cholesterol (mg)	0
Sodium (mg)	3.00
Potassium (mg)	213.00
Total Carbohydrates (g)	20.73
Dietary Fiber (g)	2.90
Total Sugars (g)	9.09
Added Sugars (g)	0
Protein (g)	3.02
Vitamin A-RAE (mcg)	0.15
Vitamin C (mg)	6.30
Vitamin D (mcg)	0
Vitamin E-Alpha Toco (mg)	--
Calcium (mg)	4.00
Iron (mg)	0.41
Ash (g)	0.48
Water (g)	75.00
USDA code: 11910/ESHA code: 6912	

Nutrition Facts
Valeur nutritive
Per 1/2 cup (85 g)
pour 1/2 tasse (85 g)

Calories 70	% Daily Value* / % valeur quotidienne*
Fat / Lipides 0.5 g	1 %
Saturated / saturés 0.2 g + Trans / trans 0 g	1 %
Carbohydrate / Glucides 18 g	
Fibre / Fibres 2 g	7 %
Sugars / Sucres 8 g	8 %
Protein / Protéines 3 g	
Cholesterol / Cholestérol 0 mg	
Sodium 3 mg	0 %
Potassium 175 mg	4 %
Calcium 0 mg	0 %
Iron / Fer 0.3 mg	2 %
Vitamin A / Vitamine A 0 mcg	0 %
Vitamin C / Vitamine C 5 mg	6 %
Vitamin D / Vitamine D 0 mcg	0 %

*5% or less is **a little**, 15% or more is **a lot**
*5% ou moins c'est **peu**, 15% ou plus c'est **beaucoup**

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Material B

Product Specification

IQF Kernel Corn (Grade B)

Product Code(s): 00179 | Revision: 04 | Effective Date: 2021-04-22

Parameters	Values
Description	IQF Whole Kernel Corn (Grade B) means it possesses similar varietal characteristics – good flavor typical of sweet corn, fair color, fairly tender, fairly well cut and fairly free from defects
Brix	8-12
Color	Golden Yellow - no more than 5 discolored or decayed kernels per pound (454 g)
Botanical Name	Zea mays
Product Shape & Size	8-10 mm grain diameter
Shelf Life	2 years
Storage	-18 Degrees or Below
Packaging	Packed in food grade LDPE blue color poly liner with 5 ply master carton
Net Weight	10 Kgs
No. Of Boxes/Weight per FCL	2300 boxes/23 MT (Net Weight)

MICROBIOLOGICAL PARAMETERS

Total Plate Count (cfu/g)	Yeast & Mold (cfu/g)	Coliforms (cfu/g)	E-Coli (cfu/g)	Salmonella in 25 gms	Listeria (monocytogenes (cfu/g)
< 10,000	< 1000	< 100	Negative	Absent	Absent

Nutrients per 100g	
Calories	88.00
Fat (g)	0.78
Saturated Fat (g)	0.12
Trans Fat (g)	0
Cholesterol (mg)	0
Sodium (mg)	3.00
Potassium (mg)	213.00
Total Carbohydrates (g)	20.71
Dietary Fiber (g)	1.90
Total Sugars (g)	2.50
Added Sugars (g)	0
Protein (g)	3.02
Vitamin A-RAE (mcg)	10.00
Vitamin C (mg)	6.40
Vitamin D (mcg)	0
Vitamin E-Alpha Toco (mg)	0.08
Calcium (mg)	4.00
Iron (mg)	0.42
Ash (g)	0.48
Water (g)	75.00
CNF code: 2391/ESHA code: 413178	

Nutrition Facts
Valeur nutritive
Per 3/5 cup (85 g)
pour 3/5 tasse (85 g)

	% Daily Value* / % valeur quotidienne*
Calories 70	
Fat / Lipides 0.5 g	1 %
Saturated / saturés 0.1 g + Trans / trans 0 g	1 %
Carbohydrate / Glucides 18 g	
Fibre / Fibres 2 g	7 %
Sugars / Sucres 2 g	2 %
Protein / Protéines 3 g	
Cholesterol / Cholestérol 0 mg	
Sodium 3 mg	1 %
Potassium 175 mg	4 %
Calcium 0 mg	0 %
Iron / Fer 0.4 mg	2 %
Vitamin A / Vitamine A 10 mcg	1 %
Vitamin C / Vitamine C 5 mg	6 %
Vitamin D / Vitamine D 0 mcg	0 %

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In your role as the Formulation Scientist at the Soup Du-Jour Company, you are responsible for considering the nutritional value of each raw material for the formulation of the soup you manufacture. Due to a recent strain on the corn supply chain, you must find a new supplier that can meet your critical specifications. Your cross-functional partner in purchasing has sent you these two specification snap shots to review.

To maintain a consistent nutritional profile of your finished product, you need at least 3 grams of protein per 100g and at least 2.5g of Dietary Fiber per 100g.

Based on the critical attributes and the two material specifications, which response you should provide?

a) Both MATERIAL A and MATERIAL B are valid options because they meet the criteria and can be further assessed with live samples.

b) Neither materials are valid options because they do not meet the criteria and you must keep searching.

c) Only MATERIAL A meets the protein but not the fiber criteria.

d) Only MATERIAL B meets the protein and fiber criteria.

e) Both materials meet the protein threshold but only Material A meets the dietary fiber threshold, also.

As the Product Development Scientist on the brand, one of your roles is to maintain the product design's key marketing claims. One of the key marketing priorities of the Soup Du-jour Corn Chowder is that the product is GMO free.

Based on the specifications provided for MATERIALS A and B, if you were to use these in your product:

a) MATERIALS A and B both contain GMOs, so you'd have to change your key claim.

b) These products are both GMO free and are compatible with your key claim.

c) Only MATERIAL A is GMO free and maintains your current claims

d) Only MATERIAL B is GMO free and maintains your current claims.

e) There is not enough information listed on this specification to make a judgement at this time.

As the Processing Engineer on the R&D team at Soup Du-jour, part of your role is to ensure compliance with the manufacturing process in your factory to achieve an optimal finished product. Your current process is designed to handle bulk, loose flowing ingredient pieces or liquid materials. The product development team has suggested either MATERIAL A or MATERIAL B as a cost savings measure to replace a material currently in your manufacturing ingredient list.

Based on the specifications provided, what is the best response for how to proceed with the project?

a) You should only select MATERIAL A, as MATERIAL B will not work in your current manufacturing process.
b) You can use either option in your current manufacturing design.
c) You can use neither of these materials in your current process.
d) You should only select MATERIAL B, as MATERIAL A will not work in your current manufacturing process.
e) It is impossible to tell from the provided specification.

Both corn material specifications you are evaluating ship from the vendor in similar packaging. The package consists of a 5-ply master carton designed to withstand stacking pressures for a long period of time in frozen conditions.

The other packaging component is (select the best answer):

a) Clear plastic liner bag.

b) Paper bags for easy access.

c) Nothing, corn is packed directly into the carton.

d) Blue plastic liners designed to be easily seen in the factory.

e) Rigid tubs with screw top closures.

Another critical element to your manufacturing plan is ingredient storage. As you consider MATERIAL A and MATERIAL B as a cost savings substitute for a fresh corn product, you recognize that your current warehousing only accounts for refrigerated and ambient condition storage.

Based on the specifications provided, what is the best response for how to proceed with the project?

a) The alternate materials specify frozen storage and is not compatible with your current process.

b) The alternate materials can be stored in the refrigerator for up to 2 years so this will work in your process.

c) MATERIAL A will work with your current process, but Material B will not.

d) MATERIAL will work with your current process, but Material A will not.

e) The storage condition of these materials is up to the user, it is not specified.