



Head Office: The Old Grammar School, 3-7 Market Square, Amersham, Bucks. HP7 0DF
Tel: (44) 1494 434600 Email: foodnettechnical@foodnet.ltd.uk

Technical Specification		
Product: Spinach Leaf IQF	Last Update: 31/01/2020	Product Code: SPI005

PACK SIZE 1 x 10kg;

ORIGIN: Turkey / China / France / Belgium

GENERAL The product shall be prepared from fresh sound raw material that is free from all toxic residues and taints and shall comply with all current UK/EU Food Legislation. The product is intended to be used as ingredient that is further processed and heat-treated before final consumption.

INGREDIENTS Spinach 100% Declare as: Spinach
(*Spinacia oleracea*)

PROCESSING Spinach leaves are delivered to the factory, cleaned, inspected, washed, cut (40x40mm), blanched, cooled and individually quick frozen (-18°C or below) and stored in bulk pallets at -18°C or below until required for re-packing.

PACKING During packing, the spinach is inspected before weighing and filling into blue poly lined cartons. The cartons are Best Before and Production date coded, check weighed and metal detected, palletised and stretch wrapped before being returned to store at -23°C to await despatch to the UK at -18°C.

QUALITY CONTROL Checks are carried out on the following: -

Processing: - Raw material
Final Product
Temperature

Packing: - Metal detection
Check weighing
Final product physical defect levels
Organolepsis
Case quantity
Case sealing
Case coding and print quality

Doc Ref: PRO-SPE	Issue date: 31.01.2020	Issue No: 3	Prepared by: G. Oberto	Authorised by: Rhys Owen
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DEFECT TOLERANCES

<u>Per 500g</u>	Maximum	
Clumps	10%w/w	
Foreign Matter	Nil	
EVM	2	
Yellow Leaves	5 %w/w	
Blemished/Rotten Leaves	0.8 %w/w Root Pieces	1
Spinach Flower buds	3	
Stalks	20% w/w	
Dry Matter	6.5% Min	
Nitrates	<2000 ppm	

DEFINITIONS OF DEFECTS

Clumps

A clump is an agglomeration of leaves welded together that cannot be readily separated without causing damage to the leaves. Clumps shall weigh greater than 30g.

Foreign Material

This includes any material not derived from the spinach plant, or defined as EVM, Examples of foreign matter include insects, pieces of insect, wood, glass, stones, sand, metal, snails, slugs etc. unacceptable.

Extraneous Vegetable Matter (EVM)

This includes any harmless vegetable matter other than spinach leaves that is not derived from the spinach plant.

Yellow Leaves

These are spinach leaves that have a distinct yellow colouration.

Blemished / Rotten Leaves

These are leaves, or parts of leaves, that have a brown colouration caused by rain damage, frost or disease.

Flower buds

These are noticeable flower buds from the spinach plant measuring greater than 25mm.

Stalks

These are pieces of stalk completely devoid of leaf.

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The below minimum numbers of samples should be inspected and average result to be out-of-spec.

Quantity Delivered (Kg)	Minimum samples to be taken (1Kg of product per each item)		
	10Kg Boxes	20Kg Bags	25Kg Bags
<1000	4	2	2
<2000	8	5	4
<5000	10	7	5
<10000	15	10	8
≤27000	20	15	12

ORGANOLEPSIS (Carried out on a thawed sample.)

COLOUR Characteristic green almost completely uniform throughout the sample.

FLAVOUR Characteristic spinach flavour. Shall be slightly sweet.

TEXTURE Tender, firm but not hard, with no stringiness.



Average sample

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MICROBIOLOGICAL

Organism	Target	Maximum
<i>TVC @ 30°C</i>	1×10^5	1×10^6
<i>Total Coliforms</i>	1×10^2	3×10^3
<i>E. coli</i>	Nil	1×10^2
<i>Listeria mono</i>	Absent in 25g	1×10^2
<i>Salmonella</i>	Absent in 25g	Absent in 25g

ANALYTICAL Peroxidase Negative.
 Nitrates ≤ 2000 ppm

WEIGHT CONTROL The product shall be packed to minimum weight.

METAL DETECTION All cartons shall be passed through a metal detector. The system shall be tested at least every 2 hours using ferrous, non-ferrous and stainless-steel test pieces.

BEST BEFORE DATE The product shall be twenty-four months following the month of packing. Minimum BB date on delivery: 6 months.

TRACEABILITY INFO Production date or Lot number printed on the label as well as customer order number and/or delivery date.

STORAGE CONDITIONS Keep frozen at - 18°C at all times.

CARTON LINERS Blue food grade polythene liner of a minimum thickness of 30µm.

CARTONS Corrugated fibreboard of glued construction, no metal staples to be used. Shall be sealed using blue adhesive tape.

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NUTRITIONAL INFORMATION

This data conforms to the requirements of EC Council Directive 90/496/EEC

100g of uncooked spinach typically contains: -

Parameter	Value / 100g	Methodology
Energy - kcal	21	McCance & Widdowson 6 th Edition
Energy - kJ	90	McCance & Widdowson 6 th Edition
Moisture	91.6g	McCance & Widdowson 6 th Edition
Carbohydrate	0.5g	McCance & Widdowson 6 th Edition
- as sugars	0.3g	McCance & Widdowson 6 th Edition
- as polyols	0.0g	McCance & Widdowson 6 th Edition
- as starch	0.2g	McCance & Widdowson 6 th Edition
Fat	0.8g	McCance & Widdowson 6 th Edition
- as saturates	0.1g	McCance & Widdowson 6 th Edition
- as mono unsaturates	0.1g	McCance & Widdowson 6 th Edition
- as poly unsaturates	0.5g	McCance & Widdowson 6 th Edition
Protein	3.1g	McCance & Widdowson 6 th Edition
Fibre	2.1g	McCance & Widdowson 6 th Edition
Sodium	16mg	McCance & Widdowson 6 th Edition
Vitamin A	1101µg	McCance & Widdowson 6 th Edition
Vitamin B ₆	0.9mg	McCance & Widdowson 6 th Edition
Vitamin B ₁₂	0µg	McCance & Widdowson 6 th Edition
Vitamin C	6mg	McCance & Widdowson 6 th Edition
Vitamin D	0.0µg	McCance & Widdowson 6 th Edition
Vitamin E	1.71mg	McCance & Widdowson 6 th Edition
Thiamin	0.06mg	McCance & Widdowson 6 th Edition
Riboflavin	0.05mg	McCance & Widdowson 6 th Edition
Niacin	0.9mg	McCance & Widdowson 6 th Edition
Folic Acid	52µg	McCance & Widdowson 6 th Edition
Biotin	0.1µg	McCance & Widdowson 6 th Edition
Pantothenic Acid	0.21mg	McCance & Widdowson 6 th Edition
Calcium	150mg	McCance & Widdowson 6 th Edition
Phosphorus	48mg	McCance & Widdowson 6 th Edition
Iron	1.7mg	McCance & Widdowson 6 th Edition
Magnesium	31mg	McCance & Widdowson 6 th Edition
Zinc	0.6mg	McCance & Widdowson 6 th Edition
Iodine	2µg	McCance & Widdowson 6 th Edition
Potassium	340mg	McCance & Widdowson 6 th Edition

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GMO DECLARATION

Does the product, or any of its ingredients contain any genetically modified material (whether viable or not)? YES / NO

Is the product or any of its ingredients not substantially equivalent as a consequence of the use of genetic modification? YES / NO

Is the product or any of its ingredients produced from, but not containing any genetically modified material? YES / NO

Have genetically modified organisms been used as processing aids or additives used in connection with the production of the food or any of its ingredients? YES / NO

Have genetically modified organisms been used to produce processing aids or additives but where such genetically modified organisms are not present in the processing aid as used in connection with the production of the food or any of its ingredients? YES / NO

Name: Gianluca Oberto

Job Title: Technical Manager

Signature: 

Date: 31st January 2020

IRRADIATION POLICY

I confirm that the product supplied by Foodnet Limited under this specification has not undergone any irradiation treatment or process. I further confirm that no ingredient or processing aid used in conjunction with this product has undergone irradiation treatment.

Name: Gianluca Oberto

Job Title: Technical Manager

Signature: 

Date: 31st January 2020

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FOOD INTOLERANCE

Food Intolerance Data				
Does the material supplied contain any of the following? (NO) Absent, (YES) Present				
Allergen	NO / YES	Reason for presence if YES		
Milk & Milk Derivatives	NO			
Egg & Egg Derivatives	NO			
Animal Products (*)	NO			
Fish/Shellfish/Crustaceans/Molluscs	NO			
Cereals (**)	NO			
Gluten	NO			
Yeast/Yeast Extract	NO			
Soya/Soya Derivatives	NO			
Fruit & Fruit Derivatives	NO			
Beef & Beef Products	NO			
Pork & Pork Products	NO			
Lamb & Lamb Products	NO			
Poultry & Poultry Products	NO			
Legumes	NO			
Peanuts	NO			
Sulphite >10ppm	NO			
MSG	NO			
BHA / BHT	NO			
Benzoates	NO			
Glutamates	NO			
Azo & Coal Tar Dyes	NO			
Added Colour	NO			
Added Flavour	NO			
Preservatives	NO			
Antioxidants	NO			
Added Salt	NO			
Nuts/Nut Oils	NO			
Caffeine	NO			
Sesame Products	NO			
Garlic	NO			
Poppy Seeds	NO			
Mustard	NO			
Celery/Celeryiac	NO			
Lupins	NO			
*Including any product derived from slaughtered animals, e.g. gelatine, rennet				
**Including wheat, corn, barley, rye, oats, etc.				
<u>Please be aware the manufacturing sites we supply this item from may handle allergens in production. Procedures are in place to prevent cross-contamination.</u>				
Is this product Suitable for:				
Vegans	Yes (Not certified)	Vegetarians	Yes	Organic No
Halal	Yes (Not certified)	Kosher	Yes (Not certified)	

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FOOD ADDITIVES

E. Number	Name	In Which Ingredient	Function in Ingredient	Function in Final Product	% In Final Product

COSHH Data

Treat as you would any frozen material i.e. if engaged in prolonged handling of the vegetables wear gloves.

Care should be used when lifting full cases of vegetables.

There are no other perceived COSHH implications regarding the use of frozen vegetables.

THE CONTENTS OF THIS SPECIFICATION ARE CONFIDENTIAL TO FOODNET LTD AND THE CUSTOMER, AND MAY NOT BE DISCLOSED TO ANY OTHER PARTY.

Signed on behalf of Foodnet Ltd:

Name: Gianluca Oberto

Job Title: Technical Manager

Signature: 

Date: 31st January 2020

Signed on behalf of the Customer:

Name:

Job Title:

Signature:

Date:

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PROCESS INFORMATION

PROCESS FLOW CHART*

*Note: this is a generic flow chart which does not refer to any specific production site.

LEAF SPINACH

Raw Material Receipt → QA Check



Hopper



Cleaning



Inspection



Flood Washing



Cutting → 40x40mm



Blanching



Cooling → 10°C



Freezing → -18°C QA Check



Cold Storage → -18°C



Tipping



Inspection



Carton Fill → QA Check



Check Weigh



Metal Detection → QA Check



Palletise



Cold Storage → -18°C



Despatch → -18°C

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Issues & Amendments

Issue N°	Amend. N°	Date	Amendments	Compiled by
1	1	01/02/2016	New entry	G. Oberto
2	1	01/05/2017	Defect tolerances – minimum ref samples; Reviewed BB and Traceability info. Added Storage Conditions. Reviewed Food Intolerance table, Flow Chart and Amendment table.	G. Oberto
3	1	31/01/2020	3 Year update – general revision	G. Oberto

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