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SATRA reference: CHM0253463/1702/EN
/A

Your reference:

Date of report: 16th February 2017

Samples received: 3rd January 2017

Date(s) work carried out: 12th January to 16th
February 2017

For the attention of: John Furlong

TECHNICAL REPORT

Subject: Overall and specific migration limit testing in accordance with BS EN 1186:2002 and Commission Regulation No. 10/2011 on gloves described as Grippaz fish scale nitrile gloves.

Conditions of Issue:

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Results given in this report refer only to the samples submitted for analysis and tested by SATRA. Comments are for guidance only.

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Please note uncertainty of measurement has not been applied to the results in this report. SATRA uncertainty of measurement values are available on request.

Report signed by: Emma Norris
Position: Chemical & Analytical Technology
Department:

WORK REQUESTED:

Samples of gloves described as Grippaz fish scale nitrile gloves were received on the 3rd January 2017 for assessment in accordance with the overall and specific migration limit requirements of Commission Regulation No. 10/2011.

CONCLUSIONS:

When tested in accordance with BS EN 1186-9: 2002 the gloves described as Grippaz fish scale nitrile gloves were found to meet with the overall migration limit requirements when assessed against 10% ethanol and 20% ethanol for 2 hours at 40°C.

When tested in accordance with BS EN 1186-9: 2002 the gloves described as Grippaz fish scale nitrile gloves were found to meet with the overall migration limit requirements when assessed against 3% acetic acid and 50% ethanol for 30 minutes at 40°C.

The gloves described as Grippaz fish scale nitrile gloves were found to meet with the overall migration requirements in Commission Regulation (EU) No 10/2011, Annex II when tested in sunflower oil for 30 minutes at 40°C.

The gloves described as Grippaz fish scale nitrile gloves were found to meet with the specific migration limit for metal requirements in Commission Regulation (EU) No 10/2011, Annex II after extraction in 3% acetic acid for 2 hours at 40°C.

Results are given in the following tables.

TESTING REQUIRED:

- BS EN 1186 part 9: 2002 Materials and articles in contact with foodstuffs – Plastics Test methods for overall migration into aqueous food simulants by article filling (modified)
 - 10% Ethanol (simulant A Commission Regulation No. 10/2011) for 2 hours at 40°C
 - 3% Acetic Acid (simulant B in Commission Regulation No. 10/2011) for 30 minutes at 40°C
 - 20% Ethanol (simulant C in Commission Regulation No. 10/2011) for 2 hours at 40°C
 - 50% Ethanol (simulant D1 in Commission Regulation No. 10/2011) for 30 minutes at 40°C
- ≠BS EN 1186-2:2002. Materials and articles in contact with foodstuffs. Plastics. Test methods for overall migration into olive oil by total immersion (in accordance with SATRA SOP CAT-035 issue 1*) for 30 minutes at 40°C.
- ≠SATRA SOP CAT-015 – Migration of metal elements (Ba, Co, Cu, Fe, Li, Mn, Zn) into food simulants. Quantification by ICP- OES. Extraction in 3% acetic acid for 2 hours at 40°C

*Note: Sunflower oil was used as an alternative to rectified olive oil – “reference simulant D”. The sunflower oil used meets with the requirements for “simulant D2” fatty acid distribution given in Commission Regulation (EU) No. 10/2011 Annex III, Table 1 and has characteristics in accordance with those specified in Annex A of BS EN 1186-1:2002.

RESULTS AND REQUIREMENTS:

Migration into aqueous food simulants by article filling (modified)

The gloves were assessed by reversing the gloves to form a pouch and filling with each simulant. The surface area of each glove was calculated by determining the density of the glove, weighing the part of the glove that was in contact with the simulant and calculating the area assuming a homogeneous material.

2 hours at 40°C

Sample	Test Method	Global migration (mg/dm ²)		Mean Global migration (mg/dm ²)	Pass/Fail
Grippaz fish scale nitrile gloves	BS EN 1186-9 (10% ethanol)	A	6.7	6.5	Pass
		B	6.7		
		C	6.2		
	BS EN 1186-9 (20% ethanol)	A	7.6	7.3	Pass
		B	8.8		
		C	5.4		
Requirement	-	-	<10 mg/dm²	-	

30 minutes at 40°C

Sample	Test Method	Global migration (mg/dm ²)		Mean Global migration (mg/dm ²)	Pass/Fail
Grippaz fish scale nitrile gloves	BS EN 1186-9 (3% acetic acid)	A	6.6	6.9	Pass
		B	7.0		
		C	7.0		
	BS EN 1186-9 (50% ethanol)	A	9.5	8.4	Pass
		B	7.5		
		C	8.1		
Requirement	-	-	<10 mg/dm²	-	

#SATRA SOP CAT-035 - Food contact by total immersion in sunflower oil

Sample description:	Grippaz fish scale nitrile gloves				
Contact time and temperature:	30 minutes at 40°C				
Simulant	Overall migration results / mg/dm²			Mean / mg/dm²	Pass / Fail
Sunflower oil (D2)	3.8	6.3	6.3	5.5	Pass
Requirement:	< 10 mg/dm² (after application of reduction factors where applicable)				

#SATRA SOP CAT-015 – Migration of metal elements (Ba, Co, Cu, Fe, Li, Mn, Zn) into food simulants. Quantification by ICP- OES after extraction in 3% acetic acid for 2 hours at 40°C

Sample tested	Simulant	Element (mg/kg of foodstuffs)						
		Ba	Co	Cu	Fe	Li	Mn	Zn
Grippaz fish scale nitrile gloves	3% acetic acid	<0.1	<0.05	<0.05	<0.1	<0.1	<0.1	5.2
Requirement of the Commission Regulation (EU) No 10/2011, Annex II		1	0.05	5	48	0.6	0.6	25

Results are the mean of triplicate determinations

APPENDICES:

The gloves described as Grippaz fish scale nitrile gloves are suitable for contact with the following food categories of foodstuffs as listed in 10/2011 Annex III, table 2 for 30 minutes at 40°C

Reference number	Description of foodstuffs
01	Beverages
01.01	Non-alcoholic beverages or alcoholic beverages of an alcoholic strength lower than or equal to 6% vol: A. Clear drinks: Water, ciders, clear fruit or vegetable juices of normal strength or concentrated, fruit nectars, lemonades, syrups, bitters, infusions, coffee, tea, beers, soft drinks, energy drinks and the like, flavoured water, liquid coffee extract B. Cloudy drinks: Juices and nectars and soft drinks containing fruit pulp, musts containing fruit pulp, liquid chocolate
01.02	Alcoholic beverages of an alcoholic strength of between 6% vol and 20%.
01.03	Alcoholic beverages of an alcoholic strength above 20 % and all cream liquors
02	Cereals, cereal products, pastry, biscuits, cakes and other bakers' wares
02.05	Pastry, biscuits, cakes, bread, and other bakers'wares, dry: A. With fatty substances on the surface
02.06	Pastry, cakes, bread, dough and other bakers'wares, fresh: A. With fatty substances on the surface
03	Chocolate, sugar and products thereof
	Confectionery products
03.01	Chocolate, chocolate-coated products, substitutes and products coated with substitutes
03.02	Confectionery products: A. In solid form: I. With fatty substances on the surface B. In paste form: I. With fatty substances on the surface II. Moist
03.03	Sugar and sugar products B. Molasses, sugar syrups, honey and the like
04	Fruit, vegetables and products thereof
04.01	Whole fruit, fresh or chilled, unpeeled

04.02	<p>Processed fruit:</p> <ul style="list-style-type: none"> B. Fruit in the form of puree, preserves, pastes or in its own juice or in sugar syrup (jams, compote, and similar products) C. Fruit preserved in a liquid medium: <ul style="list-style-type: none"> I. In an oily medium II. In an alcoholic medium
04.03	<p>Nuts (peanuts, chestnuts, almonds, hazelnuts, walnuts, pine kernels and others):</p> <ul style="list-style-type: none"> C. In paste or cream form
04.04	<p>Whole vegetables, fresh or chilled</p>
04.05	<p>Processed vegetables:</p> <ul style="list-style-type: none"> B. Fresh vegetables, peeled or cut C. Vegetables in the form of puree, preserves, pastes or in its own juice (including pickled and in brine) D. Preserved vegetables: <ul style="list-style-type: none"> I. In an oily medium II. In an alcoholic medium
05	<p>Fats and oils</p>
05.01	<p>Animals and vegetable fats and oils, whether natural or treated (including cocoa butter, lard, resolidified butter)</p>
05.02	<p>Margarine, butter and other fats and oils made from water emulsions in oil</p>
06	<p>Animal products and eggs</p>
06.01	<p>Fish:</p> <ul style="list-style-type: none"> A. Fresh, chilled, processed, salted or smoked including fish eggs B. Preserved fish: <ul style="list-style-type: none"> I. In an oily medium II. In an aqueous medium
06.02	<p>Crustaceans and molluscs (including oysters, mussels, snails):</p> <ul style="list-style-type: none"> A. Fresh within the shell B. Shell removed, processed, preserved or cooked with the shell <ul style="list-style-type: none"> I. In an oily medium II. In an aqueous medium
06.03	<p>Meat of all zoological species (including poultry and game):</p> <ul style="list-style-type: none"> A. Fresh, chilled, salted, smoked B. Processed meat products (such as ham, salami, bacon, sausages, and other) or in the form of paste, creams C. Marinated meat products in an oily medium
06.04	<p>Preserved meat:</p> <ul style="list-style-type: none"> A. In an fatty or oily medium

06.05	<p>B. In an aqueous medium</p> <p>Whole eggs, egg yolk, egg white</p> <p>B. Liquid and cooked</p>
07	<p>Milk products</p>
07.01	<p>Milk</p> <p>A. Milk and milk based drinks whole, partly dried and skimmed or partly skimmed</p>
07.02	<p>Fermented milk such as yoghurt, buttermilk and similar products</p>
07.03	<p>Cream and sour cream</p>
07.04	<p>Cheeses:</p> <p>B. Natural cheese without rind or with edible rind (gouda, camembert, and the like) and melting cheese</p> <p>C. Processed cheese (soft cheese, cottage cheese and similar)</p> <p>D. Preserved cheese:</p> <p>I. In an oily medium</p> <p>II. In an aqueous medium (feta, mozzarella and similar)</p>
08	<p>Miscellaneous Products</p>
08.01	<p>Vinegar</p>
08.02	<p>Fried or roasted foods:</p> <p>A. Fried potatoes, fritters and the like</p> <p>B. Of animal origin</p>
08.03	<p>Preparations for soups, broths, sauces, in liquid, solid or powder form (extracts, concentrates); homogenised composite food preparations, prepared dishes including yeast and raising agents:</p> <p>A. Powdered or dried:</p> <p>I. With fatty character</p> <p>B. any other form than powdered or dried:</p> <p>I. With fatty character</p> <p>II. Other</p>
08.04	<p>Sauces:</p> <p>A. With aqueous character</p> <p>B. With fatty character e.g. mayonnaise, sauces derived from mayonnaise, salad creams and other oil/water mixtures e.g. coconut based sauces</p>
08.05	<p>Mustard (except powdered mustard)</p>
08.06	<p>Sandwiches, toasted bread pizza and the like containing any kind of foodstuff</p> <p>A. With fatty substances on the surface</p>
08.07	<p>Ice creams</p>

08.08	Dried foods: A. With fatty substances on the surface
08.10	Concentrated extracts of an alcoholic strength equal to or exceeding 6% vol.
08.11	Cocoa: B. Cocoa paste
08.15	Spices and seasoning in oily medium such as pesto, curry paste



Gloves described as Grippaz fish scale nitrile gloves

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Issue Date: 1st October 2009