



Australian Government
Department of Industry,
Innovation and Science

National Measurement Institute

REPORT ON

Still and sparkling water samples - test for plastic fibres

REPLACEMENT REPORT FOR RN171964 dated 16 October 2017

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For: Mr Joe Commisso
Beloka Water Pty Ltd
Suite 208, 29-31 Lexington Drive
BELLA VISTA NSW 2153

Reference: Quotation number: Q171964

Description: Still and sparkling water samples - test for plastic fibres

Manufacturer: Beloka Water Pty Ltd

Serial Number: M171964
The samples were identified and labelled as:

No.	Client identifier for sample container	NMI identifier for sample container	Sample type
1	1 carton of still bottled water	M171964-001	Still water
2	1 carton of lightly sparkling bottled water	M171964-002	Lightly sparkling water

Previous
Examination: No previous examination

Date(s) of Test: 20 – 22 September 2017

Notes

1. The testing was conducted in the Particle Characterisation Laboratory at the National Measurement Institute, Nanometrology Section, 36 Bradfield Road, Lindfield NSW 2070.
2. Trade names and company products may be mentioned in the text in order to describe experimental procedures and equipment. Such identification does not imply recommendation or endorsement by the National Measurement Institute, nor does it imply that the products are necessarily the most suitable for the purpose.

1. Summary

Five bottles of still Beloka water and three bottles of sparkling Beloka water were tested to check for the presence of plastic microfibers with dimensions above 2.5 μm . A test method consisting of filtration and investigation of the filter membranes by optical microscopy was used. Samples were prepared in a low dust environment. The results of this investigation show no indication of the presence of plastic microfibers with dimensions above 2.5 μm in the water tested.

2. Test method

For this analysis, the water was filtered through Millipore Omnipore membrane filters (50 mm in diameter, pore size 0.2 μm) using a vacuum filtration system (Millipore). The filtration and membrane drying steps were conducted within a cytotoxic safety cabinet (Cytoculture Cytotoxic Safety Cabinet 1800, Esco Global) to provide a low-dust environment and minimise the possibility of contamination from external sources.

The filter papers were examined prior to the filtration procedure, to ensure that there were no foreign objects present. After the water filtration step, each filter paper was dried inside a cytotoxic safety cabinet, before being carefully moved under a cover for transportation to the optical microscope. The filter was then placed on a clean microscope slide and analysed using an optical microscope (Leica DM6000), fitted with a DMC4500 digital camera and the Leica Analysis Software (LAS) version 4.10+.

The imaging was carried out using the 5 \times and 10 \times magnification objectives, which with the camera and microscope turret gives an actual magnification of 50 \times and 100 \times respectively. The filter paper was scanned using the "multistep" function of the microscope, in a rectangular pattern of 15 \times 10 positions (150 images) for the first two samples and 24 \times 18 positions (432 images) for subsequent samples. These patterns correspond to scan areas of 18.7 mm \times 9.3 mm and 29.8 mm \times 16.8 mm respectively, which in turn is 15% and 44% of the active filter area. Each sample was also checked manually outside the scanned area to determine if there were any objects present outside of this area.

Five bottles (nominal volume of the bottles was 500 mL) of the still water and three bottles of the sparkling water were tested (see Table 1).

Table 1. Sample identification for the water samples (randomly selected bottles from the carton).

Sample identification	B1	B2	B3	B4	B5
M171964-001	✓	✓	✓	✓	✓
M171964-002	✓	✓	✓		

Results

No fibres with plastic characteristics were detected in any of the eight bottles tested.

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Dr Victoria Coleman
Section Manager, Nanometrology