

IDEXX Summary

#5BT

Topic: South African approval of SimPlate and Quanti-Disc for HPC testing of water

Source: South African National Standard 5221:2007, Edition 4.3

Date: 2007

Highlights:

- Under Section 8 of SANS 5221:2007, **SimPlate** is approved for HPC testing in South Africa as described in 40 CFR Part 141 *Approval of Analytical Methods for Chemical and Microbiological Contaminants*, 5th Ed, US EPA
- Under Section 8 of SANS 5221:2007, **Quanti-Disc** is approved for HPC testing in South Africa per the United Kingdom Drinking Water Inspectorate, London (<http://www.dwi.gov.uk>)

8 Standard plate count to estimate the total number of viable heterotrophic bacteria in water samples³⁾

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8.1 Thoroughly mix the water sample by rapidly inverting and righting the sample container approximately ten times (by rapid movement of the wrist). Aseptically transfer 1 mL of the sample, or 1 mL of appropriate ten-fold dilutions of the sample in a diluent, to each of two or three Petri dishes (see 4.6) of diameter approximately 85 mm to 90 mm, to enable the test to be carried out in duplicate and preferably in triplicate.

8.2 Within 20 min. of transferring the samples to the Petri dishes, add to each of the Petri dishes 15 mL of plate count agar (see 5.4) previously melted and cooled to 45 °C to 50 °C.

8.3 Keeping the Petri dishes flat on the bench, immediately mix the contents of each dish by a combination of rapid but gentle to-and-fro and rotary movements for a period of 10 s. Allow the Petri dishes to stand until the agar has solidified.

8.4 Invert the Petri dishes and incubate at 35 °C ± 1 °C for 48 h.

8.5 Count the colonies on those plates that contain between 30 and 300 colonies. From the counts so obtained, calculate the average total plate count (TPC_a) per millilitre of sample as follows:

$$TPC_a = \frac{TNC}{P_N} \times DF$$

where

TNC is the total number of colonies counted;

P_N is the number of plates counted;

DF is the dilution factor.

Count colonies on plates from the same dilution only and use these in the calculation.

9 Microbiological examination of water, using the coliphage detection method

Use SANS 10705-1.

Bibliography

De Man, J.C. MPN tables corrected. *European Journal of Applied Microbiology and Biotechnology*, 1983, vol. 17, p. 301-305.

3) Alternative methods for heterotrophic plate count in water are methods Simplate HPC described in 40 CFR Part 141 Approval of Analytical Methods for Chemical and Microbiological Contaminants, Fifth edition, United States Environmental Protection Agency, and Quanti-Disc as approved by the United Kingdom Drinking Water Inspectorate, London (<http://www.dwi.gov.uk>).

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