Reference Material Datasheet

Version:	4
Issue date:	2024-09-13
Designation:	**RM Dw 2023:B**
Batch no:	**385**
Date of production:	2023-02-15
Manufacturer:	Swedish Food Agency, Sweden
Storage:	-18 °C or lower (but not lower than -55 °C)
Batch expiry date:	**2025-08-30**

Manufacturer and contact information

Swedish Food Agency	
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Intended use

This reference material is designed for internal quality control of analytical work at microbiology laboratories. After reconstitution, the test material can be used for control of quantitative drinking water microbiology analyses, as well as for direct or indirect quality control of microbiological media.

Content

Table 1. Microorganisms included in RM Dw 2023:B

Microorganism	Strain*
Cladosporium cladosporioides	SLV-488
Saccharomyces cerevisiae	SLV-375
Streptomyces sp. (griseus group)	SLV-548

* Internal strain identification number, Swedish Food Agency

Quality control

The reference material is tested for homogeneity at the Swedish Food Agency. No statistically relevant difference has been observed between vials.

Property values

Table 2. Quality control of RM Dw 2023:B. The results are from analysis of 10 individual vials, and are valid for a reconstitution volume of 204 ml. All values are expressed in √ cfu / 5 ml (cfu / 5 ml re-transformed to the cfu scale).

Parameter	x_{RM}	s_{RM}	u_{RM}	Acceptance limits	Method and media
Microfungi in water (Moulds)	5.01 (25)	0.47	1.39	2.24– 7.79 (5 – 61)	SS 02 81 92 (RBCC)
Microfungi in water (Yeasts)	5.65 (32)	0.38	1.37	2.90 – 8.39 (8 – 70)	SS 02 81 92 (RBCC)
Actinomycetes in water	7.84 (62)	0.46	1.39	5.07– 10.62 (26 – 113)	SS 02 82 12 (ACTA)

x_{RM}: Property value, to be used for start-up control chart.

s_{RM}: Standard deviation of the property value, can be used for start-up control chart.

u_{RM}: Standard uncertainty of the property value (includes uncertainty contributions from characterisation, homogeneity, transportation and method differences).

RBCC: Rose Bengal Agar with both chlortetracycline and chloramphenicol

ACTA: Actinomycete Isolation Agar

The lower/upper acceptance limits are calculated as: $x_{RM} \pm 2 * u_{RM}$ (expanded uncertainty at a 95 % confidence interval, with $k = 2$)

Table 3. Quality control of RM Dw 2023:B. The results are from analysis of 10 individual vials, and are valid for a reconstitution volume of 304 ml. All values are expressed in √ cfu / 5 ml (cfu / 5 ml re-transformed to the cfu scale).

Parameter	x_{RM}	s_{RM}	u_{RM}	Acceptance limits	Method and media
Microfungi in water (Moulds)	4.04 (16)	0.36	1.42	1.20 – 6.89 (1 – 47)	SS 02 81 92 (RBCC)
Microfungi in water (Yeasts)	5.04 (25)	0.37	1.33	2.39 – 7.69 (6 – 59)	SS 02 81 92 (RBCC)
Actinomycetes in water	6.39 (41)	0.48	1.37	3.66 – 9.12 (13 – 83)	SS 02 82 12 (ACTA)

x_{RM}: Property value, to be used for start-up control chart.

s_{RM}: Standard deviation of the property value, can be used for start-up control chart.

u_{RM}: Standard uncertainty of the property value (includes uncertainty contributions from characterisation, homogeneity, transportation and method differences).

RBCC: Rose Bengal Agar with both chlortetracycline and chloramphenicol

ACTA: Actinomycete Isolation Agar

The lower/upper acceptance limits are calculated as: $x_{RM} \pm 2 * u_{RM}$ (expanded uncertainty at a 95 % confidence interval, with $k = 2$)

Traceability

Homogeneity, property values, standard deviations and control limits are calculated in accordance with ISO 17034 and ISO Guide 35. All values are metrologically traceable to the respective strains in the Swedish Food Agency's internal culture collection (Table 1).

Preparation of simulated drinking water sample

Reconstitute the vial content according to the instructions on the last page.

Please note that the final **204 / 304 ml** corresponds to the undiluted sample to be analysed.

The Swedish Food Agency uses phosphate buffer solution according to SS-EN ISO 8199 as diluent.

Analyses

The analyses should be performed in accordance with the methods used by the individual laboratory.

Acceptance limits for **5 ml** reconstituted in **204 ml** are given in Table 2.

Acceptance limits for **5 ml** reconstituted in **304 ml** are given in Table 3.

Control charts

Instructions for construction of control charts are available at our website:

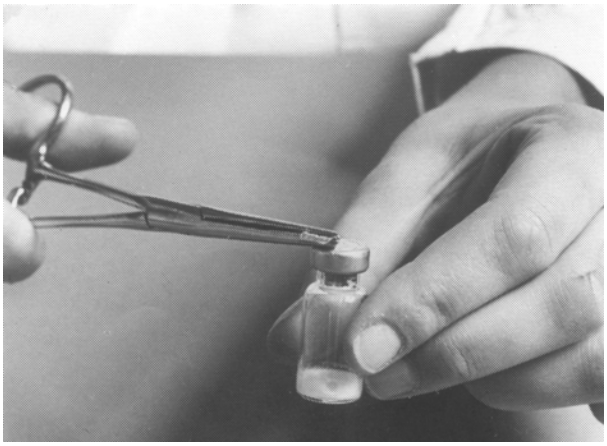
www.livsmedelsverket.se/RM-micro

Approved by

Linnea Blom

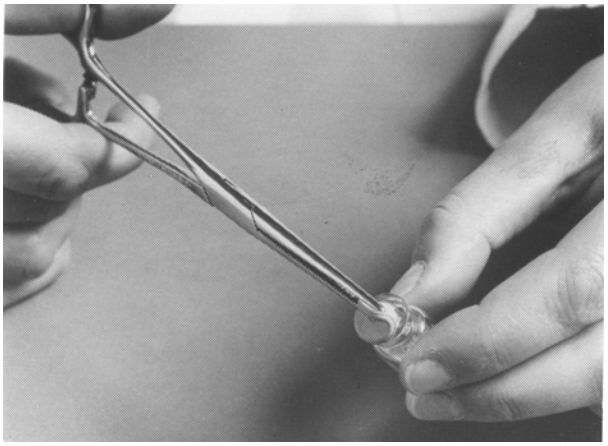
Linnea Blom
PT/RM Drinking water Coordinator

Sample preparation of freeze-dried cultures in glass vial

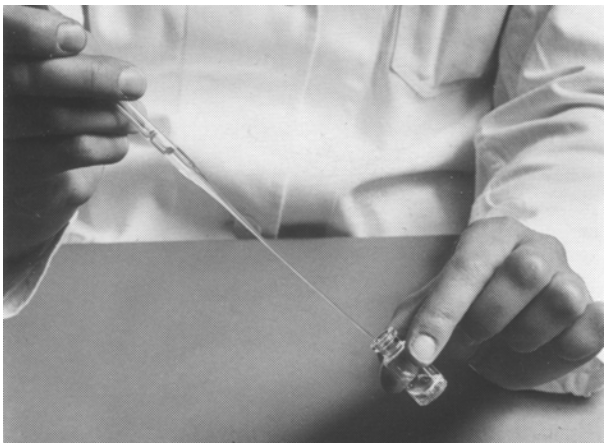


1. Twist the flap on the aluminium cap.

2. Remove the aluminium cap.



3. Remove the rubber plug.



4. Add 1 ml diluent with a sterile pipette.

5. Let the content dissolve (1-5 minutes).

6. Using a sterile pipette, transfer the suspension to a sterile bottle containing 200 / 300 ml room temperature diluent.

7. Add another 1 ml and carefully rinse the walls of the vial with the pipette.

8. Transfer the suspension to the bottle containing 201 / 301 ml diluent.

9. Repeat steps 7 and 8 two more times with the same pipette.

10. After thorough intermittent mixing, the 204 / 304 ml sample is ready for analysis.

11. Perform the analyses within 60 minutes.