Livsmedelsverket
Swedish Food Agency

CRM Certificate
Issued by an Accredited Laboratory
File number: Dnr 2023/03887

SWEDAC ACKREDITERING
Accred. no. 1457
Production of reference materials
ISO 17034

RM Food 2023:7

Description

Table 1. General description of RM Food 2023:7

Description	
Certificate version	9.0
Issue date	2026-08-14
Designation	RM Food 2023:7
Batch no	392
Date of production	2023-06-21
Manufacturer	Swedish Food Agency, Sweden
Storage	–18 °C or lower (but not lower than –55 °C)
Batch expiry date	2027-06-30

Content

Table 2. Microorganisms included in RM Food 2023:7

Microorganism	Strain*
Penicillium verrucosum	SLV-526
Rhizopus stolonifer	SLV-489
Cladosporium cladosporioides	SLV-488
Candida glabrata	SLV-052

* Internal strain identification number, Swedish Food Agency

Property values

Table 3. Quality control of RM Food 2023:7. The results are from analysis of 5 individual vials, and are valid for a reconstitution volume of 104 ml. All values are expressed in $\log_{10}$ cfu ml^{-1}.

Analysis	x_{CRM}	s_{CRM}	u_{CRM}	Acceptance limits	Method
Yeasts	2.53	0.04	0.35	1.83 – 3.24	NMKL 98:2005 (DG18, 7 days at 25 °C)
Moulds	2.74	0.09	0.37	2.00 – 3.47	NMKL 98:2005 (DG18, 7 days at 25 °C)
Yeast + moulds	2.96	0.05	0.36	2.25 – 3.68	NMKL 98:2005 (DG18, 7 days at 25 °C)

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

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

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

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

Intended use

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

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Quality control

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

Commutability

The values in Table 3 have been calculated for and apply to the respective methods specified. They are generally applicable to other similar methods, however, results may differ from those obtained during the quality control at the Swedish Food Agency.

The standard uncertainties (u_{CRM}) of the property values include uncertainty contributions from method differences (s_R), which are calculated from historical distributions of results from different methods on PT samples with a similar composition. Consequently, the standard uncertainties and acceptance limits can, in most cases, be considered applicable to comparable microbiological methods.

Traceability

Homogeneity, property values, standard deviations and control limits are calculated in accordance with ISO 17034 and ISO 33405. All values are metrologically traceable to the respective strains in the Swedish Food Agency's internal culture collection (Table 2).

Accreditation

The Swedish Food Agency, with accreditation number 1457, is accredited by Swedac as a producer of certified reference materials in accordance with SS-EN ISO 17034. All manufacture and quality control supporting the production of CRMs are performed by the Swedish Food Agency in compliance with the requirements of SS-EN ISO/IEC 17025, unless otherwise stated in this certificate.

Preparation of simulated food sample

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

Please note that the final 104 ml corresponds to the undiluted sample to be analysed.

The Swedish Food Agency recommends using peptone water according to ISO 6887-1:2017 for the initial sample preparation and subsequent dilutions. Laboratories may use other diluents at their own discretion.

Analyses

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

Control charts

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

www.livsmedelsverket.se/RM-micro

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Livsmedelsverket
Swedish Food Agency

Manufacturer and contact information

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Approved by

Jonas Ilbäck

Jonas Ilbäck

RM Production Coordinator

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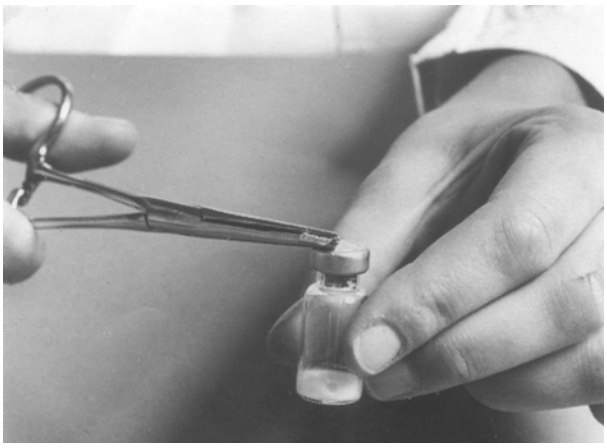
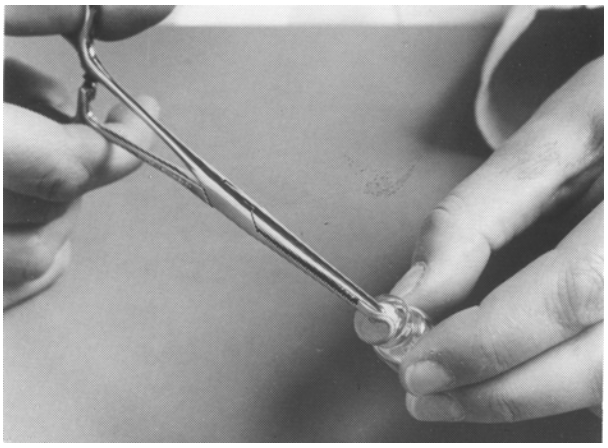
Swedish Food Agency

Sample preparation of freeze-dried cultures in glass vial (RM Food 2023:7)

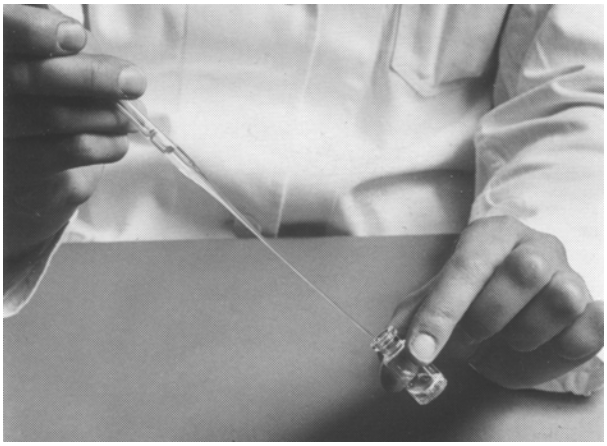


1. Twist the flap on the aluminium cap in the direction of the arrow.

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 100 ml room temperature diluent.

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

9. Transfer the suspension to the bottle containing 100 ml diluent.

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

11. After thorough mixing, manually or by magnetic stirring, the 104 ml sample is ready for analysis.

12. Perform the analyses within 60 minutes.*

From experience, for analysis of moulds more accurate results are often obtained if the final 104 ml sample is allowed to rest for 30 minutes (followed by a new mixing) prior to analysis.

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