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Product Specification Sheet

R2A Agar

Intended Usage: For the enumeration of heterotrophic bacteria from treated process and drinking water samples.

For professional use only.

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Thermo Scientific™ R2A Agar

Form of Product	Poured plate
Storage	2 – 12°C, dark
Filling weight	22 g ± 5 %
Packaging	10 plates wrapped in film
pH	7.2 ± 0.2
Appearance	Oyster white, transparent
Shelf life	26 weeks
Intended Usage	For the enumeration of heterotrophic bacteria from treated process and drinking water samples. For professional use only.
Technique	Depends on the different methods. For information see product information.

Typical formulation*	g/l
Yeast extract	0.5
Casein hydrolysate	0.5
Proteose peptone	0.5
Glucose	0.5
Starch	0.5
Dipotassium hydrogen phosphate	0.3
Magnesium sulphate, anhydrous	0.024
Sodium pyruvate	0.3
Agar	15.0

*Adjusted as required to meet performance standards.

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Quality Control

1. Control for general characteristics, labelling and printing.

2. Contamination check
   ≥ 120 h @ 20 – 25 °C, aerobic
   ≥ 120 h @ 30 – 35 °C, aerobic

3. Microbiological control

Positive Controls	Growth
Inoculum 10 – 100 colony forming units (cfu), quantitative, control medium TSA Incubation conditions: 18 – 48 h @ 34 ± 1°C for bacteria	
Escherichia coli ATCC®8739™	2 – 5 mm, transparent colonies.
Staphylococcus aureus ATCC®6538™	1 mm, cream colonies.
Pseudomonas aeruginosa ATCC®9027™	1 – 2 mm, transparent colonies.
Bacillus subtilis ATCC®6633™	2 – 4 mm, white colonies.
Incubation conditions: Up to 5 days @ 22 ± 1°C for fungi, control medium TSA+INH, for yeast SAB	
Candida albicans ATCC®10231™	2 mm, white colonies.
Aspergillus brasiliensis ATCC®16404™	10 – 30 mm, white mycelium, black spores.
Colony counts shall be ≥ 50 % of the control medium.	

Formulated in accordance with BP/EP/JP/USP.

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Description

Standard methods for bacteria counts of heterotrophic organisms from water samples typically use nutrient-rich media, such as plate count agar, that are incubated at 36 ± 1 °C. However, the organisms isolated with this method can in some circumstances make up only a portion of the total bacteria present, particularly when the investigated water exhibits a very low nutrient content and the organisms are adapted to these conditions or the bacteria are already damaged by pre-treatment of the water.

R2A agar was specially developed with regard to these two perspectives and is a nutrient-poor medium that is incubated at lower temperatures for a longer period of time. In this way, organisms that are already damaged or are adapted to nutrient-poor conditions are able to grow and the estimation of the total bacteria count reflects the actual conditions in the water sample more accurately.

Technique

1. Inoculate the agar either by spreading or membrane filter method.
2. Incubate at 20°C or 28°C for 5-7 days or alternatively at 35°C for 3 days. For incubation for more than 3 days, the dishes must be protected against drying out.

Literature

1. Collins and Willoughby (1962) Arch. Microbiol. 43, 294.
2. Greenberg, Trussel and Clesceri (ed) (1958) Standard Methods for the Examination of Drinking Water and Waste Water. 16th Ed. APHA, Washington D.C.
3. Reasoner and Geldreich (1985). Appl. Environ. Microbiol. 49, 1.
4. Stark and McCoy (1938) Zentralbl. Bakteriol. Infektionskr. Hyg. Abt. 2 89, 201.

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