

DIN EN ISO 11731:2019-03 (E)

Water quality - Enumeration of Legionella (ISO 11731:2017)

Contents		Page
European foreword		4
Foreword		5
Introduction		6
1	Scope	7
2	Normative references	7
3	Terms and definitions	7
4	Principle	8
	4.1 General	8
	4.2 Examination	8
	4.3 Confirmation	8
5	Apparatus and glassware	8
6	Culture media and reagents	9
7	Sampling	10
8	Procedure	10
	8.1 Samples	10
	8.2 Concentration of water samples	11
	8.2.1 General	11
	8.2.2 Membrane filtration and direct placing of the membrane filter on culture media	11
	8.2.3 Membrane filtration followed by a washing procedure	11
	8.3 Sample pre-treatment	12
	8.3.1 Heat treatment	12
	8.3.2 Acid treatment	12
	8.4 Culture	12
	8.4.1 General	12
	8.4.2 Samples with a high concentration of <i>Legionella</i> species and a low concentration of interfering microorganisms	12
	8.4.3 Samples with a low concentration of <i>Legionella</i> species and a low concentration of interfering microorganisms	12
	8.4.4 Samples with a high concentration of interfering microorganisms	13
	8.4.5 Samples with an extremely high concentration of interfering microorganisms	13
	8.4.6 Incubation	13
	8.4.7 Examination of the plates	13
	8.5 Confirmation of presumptive <i>Legionella</i> colonies on culture media: BCYE agar and BCYE-cys agar	14
9	Expression of results	14
10	Test report	15

11	Quality assurance	16
11.1	General	16
11.2	Performance testing of <i>Legionella</i> culture media	16
11.3	Preparing working culture and test suspension for performance testing	16
Annex A	(informative) <i>Legionella</i> species	18
Annex B	(normative) Culture media	20
Annex C	(normative) Diluents	26
Annex D	(normative) Acid solution	27
Annex E	(informative) Scraping or rubbing the bacteria from membrane filters	28
Annex F	(informative) Centrifugation technique	29
Annex G	(informative) Indirect immunofluorescent antibody assay for the identification of <i>Legionella</i> species	30
Annex H	(informative) Performance data	33
Annex I	(informative) Pre-treatment of water related matrices	37
Annex J	(normative) Decision matrix	38
Bibliography	44