



USEPA Approved / Equivalent

Spectroquant® methods

The Spectroquant® methods for environmental measurement listed in the table below are compliance monitoring methods working according to the specified USEPA methods or Standard Methods. The USEPA therefore accepted the Spectroquant® methods as USEPA approved / equivalent. Customers thus obtain results identical to those obtained with USEPA methods. Merck KGaA, Darmstadt, Germany is the first European company to offer a broad range of approved / equivalent photometric methods for drinking water, environmental and wastewater analysis.

Testing of water according to national regulations or e.g. USEPA methods is becoming more and more important. Since contaminated water is harmful for humans and the environment, regulatory agencies, like the USEPA (U.S. Environmental Protection Agency), require the use of official methods when testing drinking water (Safe Drinking Water Act) and wastewater (Clean Water Act). To support your analysis, many Spectroquant® test kits are developed according to approved USEPA or ISO standards. This ensures that you have reliable, reproducible results that are in compliance with regulations.

To many of Merck KGaA, Darmstadt, Germany, photometric Spectroquant® methods the USEPA granted its approval. This means: They have been found to be reliable and reproducible and their results are equivalent to those obtained via standard laboratory analysis.

For regulatory organizations whose work is subject to USEPA regulations, this approval / equal demonstrates that Merck KGaA, Darmstadt, Germany, Spectroquant® test kits are reliable and accurate. And that they can be used for effective daily routine monitoring of industrial wastewater just as drinking water as a means to protect the environment.

Take advantage of the benefits of Merck KGaA, Darmstadt, Germany, Spectroquant® test kits, for example concerning the fact that also other governmental organizations prefer wastewater to be analyzed using approved / equivalent methods. Obtain results identical to those with USEPA methods using these USEPA approved / equivalent methods



Approval / Equivalency documentations are available for the following parameters

USEPA Approved / Equivalent Spectroquant® Test Kits

Ammonium

Catalogue Number	Spectroquant® Test kits	Measuring ranges	USEPA Equivalency for	
			Clean Water Act	Safe Drinking Water Act
1.14739	Ammonium Cell Test	0.010 – 2.000 mg/L NH ₄ -N 0.01 – 2.58 mg/L NH ₄ ⁺ 0.010 – 2.000 mg/L NH ₃ -N 0.01 – 2.43 mg/L NH ₃	Yes	Yes *
1.14558	Ammonium Cell Test	0.20 – 8.00 mg/L NH ₄ -N 0.26 – 10.30 mg/L NH ₄ ⁺ 0.20 – 8.00 mg/L NH ₃ -N 0.26 – 9.73 mg/L NH ₃	Yes	Yes *
1.14544	Ammonium Cell Test	0.5 – 16.0 mg/L NH ₄ -N 0.6 – 20.6 mg/L NH ₄ ⁺ 0.5 – 16.0 mg/L NH ₃ -N 0.6 – 19.5 mg/L NH ₃	Yes	Yes *
1.14559	Ammonium Cell Test	4.0 – 80.0 mg/L NH ₄ -N 5.2 – 103.0 mg/L NH ₄ ⁺ 4.0 – 80.0 mg/L NH ₃ -N 5.2 – 97.3 mg/L NH ₃	Yes	Yes *
1.14752	Ammonium Test	0.010 – 3.00 mg/L NH ₄ -N 0.013 – 3.86 mg/L NH ₄ ⁺ 0.010 – 3.00 mg/L NH ₃ -N 0.013 – 3.65 mg/L NH ₃	Yes	Yes *
1.00683	Ammonium Test	2.0 – 150 mg/L NH ₄ -N 2.6 – 193 mg/L NH ₄ ⁺ 2.0 – 150 mg/L NH ₃ -N 2.6 – 182 mg/L NH ₃	Yes	Yes *

*) Safe Drinking Water Act uses methods in 40 CFR part 136 Clean Water Act

The Merck KGaA, Darmstadt, Germany, Equivalency documents covers all pack sizes, cells and citation units mentioned in the insert sheet of the test kit.



Chlorine

Catalogue Number	Spectroquant® Test kits	Measuring ranges	USEPA Equivalency for	
			Clean Water Act	Safe Drinking Water Act
1.00595	Chlorine Cell Test (free chlorine)	0.03 - 6.00 mg/l Cl ₂		Yes
1.00598	Chlorine Test (free chlorine)	0.010 - 6.00 mg/l Cl ₂		Yes
1.00602	Chlorine Test (total chlorine)	0.010 - 6.00 mg/l Cl ₂	Yes	Yes
1.00597	Chlorine Cell Test (free and total chlorine)	0.03 - 6.00 mg/l Cl ₂	Yes	Yes
1.00599	Chlorine Test for (free and total chlorine)	0.010 - 6.00 mg/l Cl ₂	Yes	Yes

The Merck KGaA, Darmstadt, Germany, Equivalency documents covers all pack sizes, cells and citation units mentioned in the insert sheet of the test kit.

Chromate / Chromium VI

Catalogue Number	Spectroquant® Test kits	Measuring ranges	USEPA Equivalency for	
			Clean Water Act	Safe Drinking Water Act
1.14552	Chromate Cell Test (Chromium VI)	0.05 - 2.0 mg/l Cr	Yes	

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COD

Catalogue Number	Spectroquant® Test kits	Measuring ranges	USEPA Equivalency for	
			Clean Water Act	Safe Drinking Water Act
1.14560	COD Cell Test	4.0 - 40.0 mg/l COD	Yes	Yes *
1.01796	COD Cell Test	5.0 – 80.0 mg/l COD	Yes	Yes *
1.14540	COD Cell Test	10 - 150 mg/l COD	Yes	Yes *
1.14895	COD Cell Test	15 - 300 mg/l COD	Yes	Yes *
1.14690	COD Cell Test	50 - 500 mg/l COD	Yes	Yes *
1.14541	COD Cell Test	25 - 1,500 mg/l COD	Yes	Yes *
1.14691	COD Cell Test	300 - 3,500 mg/l COD	Yes	Yes *
1.14555	COD Cell Test	500 - 10,000 mg/l COD	Yes	Yes *
1.01797	COD Cell Test	5,000 – 90,000 mg/l COD	Yes	Yes *

* Safe Drinking Water Act uses methods in 40 CFR part 136 Clean Water Act if there are none in 40 CFR part 141 and the supporting documents.

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COD for seawater / high chloride contents

Catalogue Number	Spectroquant® Test kits	Measuring ranges	USEPA Equivalency for	
			Clean Water Act	Safe Drinking Water Act
1.17058	COD Cell Test for seawater / high chloride contents	5.0 – 60.0 mg/L COD	Yes	Yes *
1.17059	COD Cell Test for seawater / high chloride contents	50 – 3,000 mg/L COD	Yes	Yes *

* Safe Drinking Water Act uses methods in 40 CFR part 136 Clean Water Act if there are none in 40 CFR part 141 and the supporting documents.

The Merck KGaA, Darmstadt, Germany, Equivalency documents covers all pack sizes, cells and citation units mentioned in the insert sheet of the test kit.



Cyanide

Catalogue Number	Spectroquant® Test kits	Measuring ranges	USEPA Equivalency for	
			Clean Water Act	Safe Drinking Water Act
1.14561 *	Cyanide Cell Test (free cyanide)	0.010 - 0.500 mg/l CN ⁻	Yes	

* This test kit is not available in the US and Canada because of import restrictions.

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Nitrate

Catalogue Number	Spectroquant® Test kits	Measuring range	USEPA Equivalency for	
			Clean Water Act	Safe Drinking Water Act
1.14542	Nitrate Cell Test	0.5-18.0 mg/L NO ₃ -N 2.2 – 79.7 mg/L NO ₃	Yes	
1.14563	Nitrate Cell Test	0.5 - 25.0 mg/L NO ₃ -N 2.2 – 110.7 mg/L NO ₃	Yes	
1.14764	Nitrate Cell Test	1.0 - 50.0 mg/L NO ₃ -N 4 – 221 mg/L NO ₃	Yes	
1.00614	Nitrate Cell Test	23-225 mg/L NO ₃ -N 102 – 996 mg/L NO ₃	Yes	
1.09713	Nitrate Test	0.10-25.0 mg/L NO ₃ -N 0.4 – 110.7 mg/L NO ₃	Yes	
1.14773	Nitrate Test	0.2-20.0 mg/L NO ₃ -N 0.89 – 88.5 mg/L NO ₃	Yes	
1.01842	Nitrate Test	0.3-30.0 mg/L NO ₃ -N 1.3 – 132.8 mg/L NO ₃	Yes	
1.14556	Nitrate Cell Test in seawater	0.10-3.00 mg/L NO ₃ -N 0.4 – 13.3 mg/L NO ₃	Yes	
1.14942	Nitrate Test in seawater	0.2-17.0 mg/L NO ₃ -N 0.9 – 75.3 mg/L NO ₃	Yes	

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Nitrite

Catalogue Number	Spectroquant® Test kits	Measuring range	USEPA Equivalency for	
			Clean Water Act	Safe Drinking Water Act
1.14547.	Nitrite Cell Test	0.010 – 0.700 mg/L NO ₂ -N 0.03 – 2.30 mg/L NO ₂	Yes	
1.00609	Nitrite Cell Test	1.0 – 90.0 mg/L NO ₂ -N 3.0 – 295.2 mg/L NO ₂	Yes	
1.14776	Nitrite Test	0.002 – 1.00 mg/L NO ₂ -N 0.007 – 3.28 mg/L NO ₂	Yes	

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Phosphate

Catalogue Number	Spectroquant® Test kits	Measuring range	USEPA Equivalency for	
			Clean Water Act	Safe Drinking Water Act
1.14848	Phosphate Test (Orthophosphate)	0.0025-5.00 mg/L PO ₄ -P 0.0077-15.30 mg/L PO ₄ 0.0057-11.46 mg/L P ₂ O ₅	Yes	Yes
1.00474	Phosphate Cell Test (Orthophosphate)	0.05-5.00 mg/L PO ₄ -P 0.2-15.3 mg/L PO ₄ 0.11-11.46 mg/L P ₂ O ₅	Yes	Yes
1.14543	Phosphate Cell Test (Orthophosphate and Total Phosphorous)	0.05-5.00 mg/L PO ₄ -P 0.2-15.3 mg/L PO ₄ 0.11-11.46 mg/L P ₂ O ₅	Yes	Yes
1.00475	Phosphate Cell Test (Orthophosphate)	0.5-25.0 mg/L PO ₄ -P 1.5-76.7 mg/L PO ₄ 1.1-57.3 mg/L P ₂ O ₅	Yes	Yes
1.14729	Phosphate Cell Test (Orthophosphate and Total Phosphorous)	0.5-25.0 mg/L PO ₄ -P 1.5-76.7 mg/L PO ₄ 1.1-57.3 mg/L P ₂ O ₅	Yes	Yes
1.14546	Phosphate Cell Test (Orthophosphate)	0.5-25.0 mg/L PO ₄ -P 1.5-76.7 mg/L PO ₄ 1.1-57.3 mg/L P ₂ O ₅	Yes	Yes
1.14842	Phosphate Test (Orthophosphate)	0.5-30.0 mg/L PO ₄ -P 1.5-92.0 mg/L PO ₄ 1.1-68.7 mg/L P ₂ O ₅	Yes	Yes
1.00798	Phosphate Test (Orthophosphate)	1.0-100.0 mg/L PO ₄ -P 3-307 mg/L PO ₄ 2-229 mg/L P ₂ O ₅	Yes	Yes
1.00616	Phosphate Cell Test (Orthophosphate)	3.0-100.0 mg/L PO ₄ -P 9-307 mg/L PO ₄ 7-229 mg/L P ₂ O ₅	Yes	Yes
1.00673	Phosphate Cell Test (Orthophosphate and Total Phosphorous)	3.0-100.0 mg/L PO ₄ -P 9-307 mg/L PO ₄ 7-229 mg/L P ₂ O ₅	Yes	Yes
1.14687	Crack Set 10 Total Phosphorous Digestion	Use with Spectroquant® Test Kit 1.14848	Yes	Yes
1.14688	Crack Set 10C Total Phosphorous Digestion	Use with Spectroquant® Test Kit 1.14848	Yes	Yes

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Sulfate

Catalogue Number	Spectroquant® Test kits	Measuring range	USEPA Equivalency for	
			Clean Water Act	Safe Drinking Water Act
1.01812	Sulfate Test	0.50-50.0 mg/L SO ₄	Yes	
1.02532	Sulfate Cell Test	1.0-50 mg/L SO ₄	Yes	
1.14548	Sulfate Cell Test	5-250 mg/L SO ₄	Yes	
1.02537	Sulfate Test	5-300 mg/L SO ₄	Yes	
1.00617	Sulfate Cell Test	50-500 mg/L SO ₄	Yes	
1.14564	Sulfate Cell Test	100-1,000 mg/L SO ₄	Yes	

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