

Eppendorf Certificate

Certificate of Quality

Eppendorf Tubes® – Typical values of trace metal release

The values in the table indicate typical values of trace metal concentrations obtained by incubating Eppendorf Tubes® with concentrated nitric acid for 1 hour (see Materials and Methods, page 2).

As the indicated values were determined in a one-time measurement, they cannot be guaranteed for every lot of Eppendorf Tubes®. Rather, they provide an indication of the extent trace elements can be eluted from Eppendorf Tubes®.

	Trace metal release [ng/µL]								
	Al	Cd	Cr	Cu	Hg	Mn	Ni	Pb	Zn
Eppendorf Safe-Lock Tubes									
0.5 mL	0.003	< 0.00002	< 0.00005	< 0.0001	< 0.001	< 0.00005	< 0.00005	< 0.00005	< 0.001
1.5 mL	0.002	< 0.00002	< 0.00005	< 0.0001	< 0.001	< 0.00005	< 0.00005	< 0.00005	< 0.001
2.0 mL	0.002	< 0.00002	< 0.00005	< 0.0001	< 0.001	< 0.00005	< 0.00005	< 0.00005	< 0.001
Eppendorf Tubes® 3810X									
1.5 mL	0.002	< 0.00002	< 0.00005	< 0.0001	< 0.001	< 0.00005	< 0.00005	< 0.00005	< 0.001
Eppendorf Protein LoBind Tubes									
0.5 mL	0.006	< 0.00002	< 0.00005	< 0.0001	< 0.001	< 0.00005	< 0.00005	< 0.00005	< 0.001
1.5 mL	0.004	< 0.00002	< 0.00005	< 0.0001	< 0.001	< 0.00005	< 0.00005	< 0.00005	< 0.001
2.0 mL	0.004	< 0.00002	< 0.00005	< 0.0001	< 0.001	< 0.00005	< 0.00005	< 0.00005	< 0.001
5.0 mL	< 0.001	< 0.00002	< 0.00005	< 0.0001	< 0.001	< 0.00005	< 0.00005	< 0.00005	< 0.001
Eppendorf DNA LoBind Tubes									
0.5 mL	0.004	< 0.00002	0.0001	< 0.0001	< 0.001	< 0.00005	< 0.00005	< 0.00005	< 0.001
1.5 mL	0.003	< 0.00002	0.0001	< 0.0001	< 0.001	< 0.00005	< 0.00005	< 0.00005	< 0.001
2.0 mL	0.003	< 0.00002	0.0001	< 0.0001	< 0.001	< 0.00005	< 0.00005	< 0.00005	< 0.001
5.0 mL	< 0.001	< 0.00002	< 0.00005	< 0.0001	< 0.001	< 0.00005	< 0.00005	< 0.00005	< 0.001
Eppendorf Tubes® 5.0 mL									
5.0 mL	< 0.001	< 0.00002	< 0.00005	< 0.0001	< 0.001	< 0.00005	< 0.00005	< 0.00005	< 0.001
5.0 mL with screw cap	< 0.001	< 0.00002	< 0.00005	0.000183	< 0.001	< 0.00005	< 0.00005	< 0.00005	< 0.001

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Eppendorf Conical Tubes									
15 mL	< 0.001	< 0.00002	< 0.00005	0.00016	< 0.001	< 0.00005	< 0.00005	< 0.00005	< 0.001
50 mL	< 0.001	< 0.00002	< 0.00005	0.000086	< 0.001	< 0.00005	< 0.00005	< 0.00005	< 0.001
Eppendorf Conical Tubes 25 mL									
25 mL	< 0.001	< 0.00002	< 0.00005	0.00016	< 0.001	< 0.00005	< 0.00005	< 0.00005	< 0.001

Materials and Methods

Eppendorf Tubes® were filled to their nominal volume with concentrated nitric acid (65 %) and incubated for 1 hour at room temperature. The eluate was then analyzed by inductively coupled plasma mass spectrometry (ICP-MS). The trace metal concentrations are stated in ng/μL.

The values represent an average of three individually analyzed samples. All values labeled with "<" indicate concentrations below the detection limit of the ICP-MS method. The other trace metal release values were calculated from their surface/volume ratio of the tube.

No metal release was observed after 5 to 10 times rinsing with concentrated nitric acid or after rinsing with 10 % acetic acid or water. All analyses were performed by an independent laboratory accredited according to DIN ISO/EC 17025.

Hamburg, August 2019

Page 2 of 2

0012602500-02

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ISO 9001
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