

Materials List for:

Optimized Procedure for Determining the Adsorption of Phosphonates onto Granular Ferric Hydroxide using a Miniaturized Phosphorus Determination Method

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Materials

Name	Company	Catalog Number	Comments
Sulfuric acid (H ₂ SO ₄)	Merck (Darmstadt, Germany)	1120802510	98% (p.a.)
Hydrochloric acid (HCl)	VWR Chemicals (Fontenay-sous-Bois, France)	20254.401	32% (AnalaR NORMAPUR, p.a.)
Sodium hydroxide (NaOH)	Merck (Darmstadt, Germany)	1064981000	≥99% (p.a.)
Acetic acid (AcOH)	VWR Chemicals (Fontenay-sous-Bois, France)	20104.334	100% (p.a.)
2-(N-morpholino)ethanesulfonic acid (MES)	SigmaAldrich (St. Louis, MO, USA)	M3671-250G	≥99%
3-(N-morpholino)propanesulfonic acid (MOPS)	SigmaAldrich (St. Louis, MO, USA)	M1254-250G	≥99.5%
4-(2-Hydroxyethyl)-1-piperazineethanesulfonic acid (HEPES)	SigmaAldrich (St. Louis, MO, USA)	H3375-250G	≥99.5%
4-(2-Hydroxyethyl)-1-piperazinepropanesulfonic acid (EPPS)	SigmaAldrich (St. Louis, MO, USA)	E9502-250G	≥99.5%
N-cyclohexyl-2-hydroxyl-3-aminopropanesulfonic acid (CAPSO)	SigmaAldrich (St. Louis, MO, USA)	C2278-100G	≥99%
N-cyclohexyl-3-aminopropanesulfonic acid (CAPS)	SigmaAldrich (St. Louis, MO, USA)	C2632-250G	≥98%
2-Phosphonobutane-1,2,4-tricarboxylic acid (PBTC)	Zschimmer & Schwarz (Mohsdorf, Germany)	CUBLEN P 50	50% technical
1-Hydroxyethane 1,1-diphosphonic acid monohydrate (HEDP·H ₂ O)	SigmaAldrich (St. Louis, MO, USA)	54342-50G	≥95.0%
Nitrilotris(methylene phosphonic acid) (NTMP)	SigmaAldrich (St. Louis, MO, USA)	72568-50G	≥97.0%
Ethylenediamine tetra(methylene phosphonic acid) (EDTMP·1.4H ₂ O)	Zschimmer & Schwarz (Mohsdorf, Germany)	-	
Diethylenetriamine penta(methylene phosphonic acid) (DTPMP·6H ₂ O)	Zschimmer & Schwarz (Mohsdorf, Germany)	-	
Potassium dihydrogen phosphate (KH ₂ PO ₄)	Merck (Darmstadt, Germany)	1048731000	≥99.5% (p.a.)
Potassium peroxydisulfate (K ₂ S ₂ O ₈)	Merck (Darmstadt, Germany)	1050920250	≥99.0% (p.a.)
L(+)-Ascorbic acid (C ₆ H ₈ O ₆)	Merck (Darmstadt, Germany)	1004680500	≥99.7% (p.a.)
Ammonium heptamolybdate tetrahydrate ((NH ₄) ₆ Mo ₇ O ₂₄ ·4H ₂ O)	Merck (Darmstadt, Germany)	1011800250	≥99.0% (p.a.)

Granular ferric hydroxide (GFH)	Hego BioTec (Berlin, Germany)	-	FerroSorp RW
Syringe membrane filters	Sartorius Stedim Biotech GmbH (Göttingen, Germany)	17765-----Q	Minisart RC Hydrophilic 25 mm 0.45 µm pore size
Single-use syringes for membrane filtration	Henke Sass Wolf (Tuttlingen, Germany)	5200.X00V0	3-part Soft-Ject Luer 20 mL
Rotator	LLG Labware (Meckenheim, Germany)	6.263 660	uniROTATOR2
Clamp for rotator	LLG Labware (Meckenheim, Germany)	6.263 664	Clamp for uniROTATOR2
Screw cap vial	Glasgerätebau Ochs (Bovenden, Germany)	135215	Präparatenglas Duran, 16x100 mm, thread GL18, cap with PTFE seal
Micropipette	Eppendorf (Hamburg, Germany)	3123000047	eppendorf Research plus 10–100 µL
Micropipette	Eppendorf (Hamburg, Germany)	3123000063	eppendorf Research plus 100–1000 µL
Micropipette	Eppendorf (Hamburg, Germany)	3123000071	eppendorf Research plus 0.5–5 mL
Precision balance	Precisa Gravimetrics (Dietikon, Switzerland)	-	Precisa LX 220 A SCS
Thermostat	Hach (Berlin, Germany)	LTV077	HT200S High Temperature Thermostat
Thermostat	Merck (Darmstadt, Germany)	1712000001	Spectroquant TR 320
Spectrophotometer	Jasco Labor- u. Datentechnik (Groß-Umstadt, Germany)	-	UV/VIS Spectrophotometer Jasco V-550
Centrifuge tube	Sarstedt (Nümbrecht, Germany)	62.559.001	Tube 50 mL, 115x28 mm, flat/conical base PP, assembled cap
pH probe	WTW (Weilheim, Germany)	103635	WTW pH-Electrode SenTix 41
pH device	WTW (Weilheim, Germany)	-	WTW Multi 350i
COD determination	Hach (Berlin, Germany)	LCK514	100–2000 mg/L O ₂
Sieve	Retsch (Haan, Germany)	60.131.000500	Test sieve 0.5 mm mesh (ISO 3310/1) stainless steel
Drying cabinet	Memmert (Schwabach, Germany)	-	Modell 600