

Materials List for:

Combined Size and Density Fractionation of Soils for Investigations of Organo-Mineral Interactions

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Materials

Name	Company	Catalog Number	Comments
Fractionation			
Sodium polytungstate	Sometu		SPT 0 (low C and N) is recommended. Lower grade polytungstate may contaminate samples.
Hydrometers (1-1.5, 1.5-2, 2-2.5, 2.5-3 g.cm ⁻³)	Allafrance		Calibrated at 20 °C, e.g. 3050FG250/20-qp
Vortex mixer	Fisher		Fixed speed standard vortex mixer, e.g. 02-215-410
Sonifier	VWR		Qsonica LLC - Q500 system with standard probe 4220
Sonifier stand	VWR		Large clamp stand
Sonifier enclosure	VWR		Soundproof cabinet (optional)
Swinging-bucket centrifuge	Beckman		Able to achieve speeds of 4000 g or more, fitted with rotor accommodating 50 mL Falcon tubes
High-speed centrifuge with fixed angle rotor	Beckman		Able to achieve speeds of 7500 g or more, fitted with rotor accommodating 250 mL bottles
50 mL centrifuge Falcon tubes	Corning		e.g. 352070
250 mL centrifuge bottles	Beckman		Polycarbonate bottles (e.g. 352070) are recommended because they are clearer than other plastics.
Vacuum filtration units	Semadeni		Polysulfone reusable units, e.g. 3029
Polypropylene hose	Semadeni		To connect the filtration unit to vacuum source
Ultrafiltration disks, 0.45 µm pore size	Millipore		e.g. HAWP04700
Dessicator cabinet	Fisher scientific		3 shelves, e.g. 305317-0120
Drierite absorbent indicating	Millipore		Blue drierite, e.g. 10276750
Scintillation vials	Fisher scientific		HDPE - separated cap 20mL, e.g. 12341599
150 mL aluminium boats (smooth sides)	Fisher scientific		Any model.
Laboratory oven	Fisher scientific		Any model.
Recycling SPT column			
Cation exchange resin	Sigma-Aldrich		Dowex® Marathon™ C sodium form, strongly acidic, 20-50 mesh

Activated charcoal	Sigma-Aldrich		Darco S-51, 4-12 mesh
Glass wool	Fisher scientific		Pyrex
Filter paper, 2.5 µm pore size	Sigma-Aldrich		Whatman grade 42, e.g. WHA1442150
Hydrogen peroxide	Sigma-Aldrich		Reagent grade.
Ethanol	Sigma-Aldrich		Reagent grade.
Polycarbonate 1000mL graduated cylinder	Semadeni		Any model.
Stand and clamp	Sigma-Aldrich		Size L - 2-prong
Polypropylene hose	Semadeni		Any model.
Polypropylene hose clamp	Semadeni		Any model.
Polypropylene funnels	Semadeni		Any model.
Polypropylene bottle (1L, 2L)	Semadeni		Any model.
Heating plate	Fisher scientific		Any model.