

Materials List for:

Quantification of Heavy Metals and Other Inorganic Contaminants on the Productivity of Microalgae

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URL: <https://www.jove.com/video/52936>

DOI: [doi:10.3791/52936](https://doi.org/10.3791/52936)

Materials

Name	Company	Catalog Number	Comments
Chemicals			
Sodium chloride	Fisher Scientific	S271-3	
Calcium chloride dihydrate	Fisher Scientific	C79-500	
Potassium chloride	Fisher Scientific	P217-500	
Sodium meta silicate nonahydrate	Fisher Scientific	S408-500	
Magnesium sulfate heptahydrate	Fisher Scientific	M63-500	
Potassium nitrate	EMD Chemical	PX1520-5	
Potassium phosphate monobasic	Fisher Scientific	P285-500	
Ammonium ferric citrate	Fisher Scientific	I72-500	
Boric acid	Fisher Scientific	A73-500	
Sodium molybdate, dihydrate	EMD Chemical	SX0650-2	
Manganese chloride tetrahydrate	Fisher Scientific	M87-500	
Zinc sulfate heptahydrate	Fisher Scientific	Z68-500	
Cupric sulfate pentahydrate	Fisher Scientific	C489-500	
Biotin	Acros Organics	230090010	
Thiamine	Acros Organics	148990100	
Vitamin B12	Acros Organics	405920010	
Copper (II) chloride dihydrate	Sigma-Aldrich	221783-100G	Irritant, Dangerous to the Environment
Lead (II) chloride	Sigma-Aldrich	268690-250G	Toxic, Dangerous to the Environment
Sodium dichromate dihydrate	Sigma-Aldrich	398063-100G	Oxidizing, Highly Toxic, Dangerous to the Environment
Cobalt (II) chloride hexahydrate	Sigma-Aldrich	255599-100G	Toxic, Dangerous to the Environment
Nickel (II) chloride hexahydrate	Sigma-Aldrich	223387-500G	Toxic, Dangerous to the Environment
Sodium (meta) arsenite	Sigma-Aldrich	71287	Toxic, Dangerous to the Environment
Cadmium chloride	Sigma-Aldrich	202908-10G	Highly Toxic, Dangerous to the Environment
Mercury (II) chloride	Sigma-Aldrich	215465-100G	Toxic, Dangerous to the Environment
Tin (II) chloride dihydrate	Fisher Scientific	T142-500	Corrosive. Suitable for Hg analysis. Very hazardous.
Manganese chloride tetrahydrate	Fisher Scientific	M87-500	
Vanadium (V) oxide	Acros Organics	206422500	Dangerous to the Environment

Carbon dioxide	Air Liquide	I2301S-1	Compressed
Hydrogen peroxide	H325-500	Fisher Scientific	30% in water
ICP-MS standard	ICP-MS-6020	High Purity Standards	
Mercury standard	CGHG1-1	Inorganic Ventures	1000±6 µg/mL in 5% nitric acid
Argon	Air Liquide		Compressed
Helium	Air Liquide		Compressed, ultra high purity
Hydrogen	Air Liquide		Compressed, ultra high purity
Nitric acid	Fisher Scientific	A509-P212	67-70% nitric acid, trace metal grade. Caution: manipulate under fume hood.
Hydrochloric acid	Fisher Scientific	A508-P212	35% hydrochloric acid, trace metal grade. Caution: manipulate under fume hood.
Equipment			
Scientific prevacuum sterilizer	Steris	31626A	SV-120
Centrifuge	Thermo Fisher	46910	RC-6 Plus
Spectrophotometer	Shimadzu	1867	UV-1800
pH controller	Hanna	BL981411	X4
Rotometer, X5	Dwyer	RMA-151-SSV	T31Y
Rotometer, X5	Dwyer	RMA-26-SSV	T35Y
Water bath circulator	Fisher Scientific	13-873-45A	
Compact chiller	VWR	13270-120	
Freeze dryer	Labconco	7752020	
Stir plate	Fisher Scientific	11-100-49S	
pH lab electrode	Phidgets Inc	3550	
Inductively coupled plasma mass spectrometer	Agilent Technologies	7700 Series ICP-MS	Attached to autosampler CETAC ASX-520
FIAS 100	Perkin Elmer Instruments	B0506520	
Atomic absorption spectrometer	Perkin Elmer Instruments	AAAnalyst 800	
Cell heater (quartz)	Perkin Elmer Instruments	B3120397	
Microwave	Milestone		Programmable, maximum power 1,200 W
Microwave rotor	Milestone		Rotor with 24-75 ml Teflon vessels for closed-vessel microwave assisted digestion.
Materials			
0.2 µm syringe filter	Whatman	6713-0425	
0.2 µm syringe filter	Whatman	6713-1650	
0.45 µm syringe filter	Thermo Fisher	F2500-3	
Polystyrene tubes	Evergreen	222-2094-050	17 x 100 mm w/cap, 16 ml, polystyrene
Octagonal magnetic stir bars	Fisher scientific	14-513-60	Magnets encased in PTFE fluoropolymer