

Materials List for:

Chemical Gardens as Flow-through Reactors Simulating Natural Hydrothermal Systems

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Materials

Name	Company	Catalog Number	Comments
Syringe Pump	Fisher	14-831-3	Dual or multiple channel, depending on desired number of simultaneous experiments
Ferrous chloride tetrahydrate	Fisher	I90500	Ferrous Chloride Tetrahydrate (Crystalline/Certified)
Ferric chloride hexahydrate	Fisher	I88-100	Ferric Chloride Hexahydrate (Lumps/Certified ACS)
Sodium hydroxide	Sigma-Aldrich	S5881	reagent grade, ≥98%, pellets (anhydrous)
Sodium sulfide nonahydrate	Fisher	S425212	Sodium Sulfide Nonahydrate (Crystalline/Certified ACS). Store at -20 °C. Only open in a glove box or fume hood. Releases toxic H ₂ S gas; all sulfide-containing solutions must be kept in a glove box or fume hood.
Potassium pyrophosphate	Sigma-Aldrich	322431	97%
L-Alanine	Sigma-Aldrich	A7627	
Syringes (10 cc)	Fisher	14-823-16E	BD™ Syringe with Luer-Lok Tips (Without Needle)
Syringe needles (16 gauge)	Fisher	14-826-18B	BD™ General Use and PrecisionGlide Hypodermic Needles, 16 G x 1.5 in. (38 mm)
Tubing	Cole Parmer	EW-06407-71	Tygon Lab Tubing, Non-DEHP, 1/16" ID x 1/8" OD
Aluminum seals	Fisher	0337523C	Thermo Scientific™ National™ Headspace 20 mm Crimp Seals
Gray butyl stoppers	Fisher	0337522AA	Thermo Scientific™ National™ 20 mm Septa for Headspace Vials
Serum bottles	Sigma-Aldrich	33110-U	Vials, crimp top, serum bottle, size 100 ml, clear glass, O.D. × H 51.7 mm × 94.5 mm. For these experiments, the bottom of the serum bottle should be cut off.
Pipette tips	VWR	53511-682	pipette tips 0.5-10 µl
Wire	McMaster-Carr	8073K661	Solid Single-Conductor Wire, UL 1007/1569, 20 AWG, 300 VAC