L1 Trace Element Solution

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Abstract

L1 trace element solution, modified from Bigelow: NCMAM Center. Components to prepare 1 L of trace element solution.

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Guidelines

First, prepare primary stock solutions. Glassware should be acid-washed and rinsed well with dH_2O before use. If unable to measure small quantities accurately, either scale up the recipe or prepare stock solutions of the individual compounds.

Before start

Prepare primary stock solutions (in dH_2O) of the following:

- $MnCl_2 \cdot 4H_2O$: 178.10 g/L
- $ZnSO_4 \cdot 7H_2O$: 23.00 g/L
- $CoCl_2 \cdot 6H_2O$: 11.90 g/L
- $CuSO_4 \cdot 5H_2O$: 2.50 g/L
- $Na_2MoO_4 \cdot 2H_2O$: 19.9 g/L
- H_2SeO_3: 1.29 g/L
- $NiSO_4 \cdot 6H_2O$: 2.63 g/L
- Na_3VO_4: 1.84 g/L
- K_2CrO: 1.94 g/L

Filter sterilize individual solutions through a 0.2 micron PES membrane.
Store frozen in 1 mL aliquots.

Protocol

Step 1.

Meausre 950 mL dH_2O into a 1 L glass bottle.

Step 2.

Dissolve 4.36 g $Na_2EDTA \cdot 2H_2O$ into the bottle.

Step 3.

Dissolve 3.15 g $FeCl_3 \cdot 6H_2O$ into the bottle.

Step 4.

Add 1 mL primary stock of $MnCl_2 \cdot 4H_2O$ (178.10 g/L in dH_2O) into the bottle.

Step 5.
Add 1 mL primary stock of $NiSO_4 \cdot 6H_2O$ (2.63 g/L in dH_2O) into the bottle.

Step 6.
Add 1 mL primary stock of $ZnSO_4 \cdot 7H_2O$ (23.00 g/L in dH_2O) into the bottle.

Step 7.
Add 1 mL primary stock of $CoCl_2 \cdot 6H_2O$ (11.90 g/L in dH_2O) into the bottle.

Step 8.
Add 1 mL primary stock of $CuSO_4 \cdot 5H_2O$ (2.50 g/L in dH_2O) into the bottle.

Step 9.
Add 1 mL primary stock of $Na_2MoO_4 \cdot 2H_2O$ (19.90 g/L in dH_2O) into the bottle.

Step 10.
Add 1 mL primary stock of H_2SeO_3 (1.29 g/L in dH_2O) into the bottle.

Step 11.
Add 1 mL primary stock of Na_3VO_4 (1.84 g/L in dH_2O) into the bottle.

Step 12.
Add 1 mL primary stock of K_2CrO (1.94 g/L in dH_2O) into the bottle.

Step 13.
Bring final volume to 1 L with dH_2O.

Step 14.
Filter sterilize final trace element solution through a 0.2 micron PES membrane.

Step 15.
Store frozen in 1 mL aliquots.