

Trace Minerals Recipe for Geobacter MXCs

Mix the following ingredients to produce 1 L of trace minerals.

- 0.5 g EDTA
- 0.114 g $\text{CoCl}_2 \cdot 2\text{H}_2\text{O}$
- 0.01 g H_3BO_3
- 0.02 g $\text{Na}_2\text{MoO}_4 \cdot 2\text{H}_2\text{O}$
- 0.001 g Na_2SeO_3
- 0.01 g $\text{Na}_2\text{WO}_4 \cdot 2\text{H}_2\text{O}$
- 0.02 g $\text{NiCl}_2 \cdot 6\text{H}_2\text{O}$
- 1.16 g MgCl_2
- 0.59 g $\text{MnCl}_2 \cdot 4\text{H}_2\text{O}$
- 0.05 g ZnCl_2
- 0.01 g $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
- 0.01 g $\text{AlK}(\text{SO}_4)_2$
- 0.114 g $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$

Stir at ambient temperature until all ingredients are dissolved. Some of these components take a long time to dissolve – it is not unusual to have to stir the ingredients for 4 hours to overnight. Once dissolved, the media should be stored in an opaque container at 4°C. (We usually wrap the glass 1 L bottle with aluminum foil – this works fine.) While it may be possible to store the minerals for longer, we have stored the minerals for up to 5 months without issues before running out of minerals.

Common substitutions:

- 0.163 g $\text{CoCl}_2 \cdot 6\text{H}_2\text{O}$ for the $\text{CoCl}_2 \cdot 2\text{H}_2\text{O}$ above
- 0.089 g CoCl_2 for the $\text{CoCl}_2 \cdot 2\text{H}_2\text{O}$ above
- 0.0064 g CuSO_4 for the $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$