

HydroBuddy MegaCrop (part A only) becomes A+B bottle. →

We get an error message that Potassium Silicate is not compatible in a concentrated volume. (see below for explanation)

The screenshot shows the HydroBuddy v1.91 software interface. On the left, a table lists elements and their target and result concentrations. A pop-up error message is displayed in the center, stating: "Substance Potassium Silicate is incompatible with concentrated solutions". The error message has an "OK" button. The background interface includes a "Substance Selection" dropdown menu with "MegaCrop (allean part A)" selected, and a "Carry Out Calculation" button.

Element	Target Conc. (ppm)	Result (ppm)
N (NO3-)	33.069	95.9
N (NH4+)	0	7.273
P	38.5122	0
K	143.5195	0
Mg	41.5677	0
Ca	0	0
S	54.8945	0
Fe	1.9841	0
Zn	0.6878	0
B	0.2579	0
Mn	0.4299	0
Cu	0.2579	0
Mo	0.086	0
Na	0	0
Si	0.9921	0
Cl	0	0

HydroBuddy MegaCrop (part B only) becomes → C bottle

The screenshot shows the HydroBuddy v1.91 software interface. The "Substance Selection" dropdown menu is set to "MegaCrop (allean part B)". The "Carry Out Calculation" button is highlighted with a green checkmark. The background interface includes a "Stock solution volume" input field set to 5, and a "Concentration Units" section with "ppm" selected.

Element	Target Conc. (ppm)	Result (ppm)
N (NO3-)	95.9001	95.9
N (NH4+)	6.6138	7.273
P	0	0
K	0	1.927
Mg	0	0
Ca	125.6622	125.624
S	0	0
Fe	0	0
Zn	0	0
B	0	0
Mn	0	0
Cu	0	0
Mo	0	0
Na	0	0
Si	0	0
Cl	0	0

If we set the volume to 1000L and choose 'direct addition' we do not get an error message for the Kaliwater glass.

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Element	Target Conc. (ppm)	Result (ppm)
N (NO3-)	33.069	33.069
N (NH4+)	0	0.004
P	38.5122	38.512
K	143.5195	143.519
Mg	41.5677	41.568
Ca	0	0.073
S	54.8945	55.315
Fe	1.9841	1.984
Zn	0.6878	0.688
B	0.2579	0.258
Mn	0.4299	0.43
Cu	0.2579	0.258
Mo	0.086	0.086
Na	0	0.315
Si	0.9921	0.992
Cl	0	0

Zero all targets Disable Pop-ups Small Window

MegaCrop (alleen part A) MegaCrop (alleen part A) v

Substance Selection

Volume: 1000 Gallons Liters Cubic Meters

Concentration Units: ppm mM M mN

Mass Units: Grams Ounces

EC Model: LMCv2 Empirical

Solution Preparation type: Concentrated A + B Solutions Direct Addition

Concentration Factor: 200

Choose Degree of Freedom

Calculation Type: Input Desired Concentrations Concentrations from Weights

We see that 18,164g is needed for 1000L (as much as we can make with the 5L A+B).

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Substance Name (click for url)	Formula	Amount (Edit to fine-tune)	Units	Preparation Cost
Calcium Nitrate (ag grade)	5Ca(NO3)2.NH4NO3.10H2O	0.385	g	0
Copper Sulfate (pentahydrate)	CuSO4.5H2O	1.013	g	0
Iron EDDHA	FeEDDHA	33.068	g	2
Magnesium Sulfate (Heptahydrate)	MgSO4.7H2O	421.579	g	0.9
Mn EDTA	MnEDTA	3.307	g	0.2
Sodium Borate (Decahydrate) (borax)	Na2B4O7.10H2O	2.274	g	0
Zinc Sulfate (Monohydrate)	ZnSO4.H2O	1.887	g	0.1
Potassium Nitrate	KNO3	238.262	g	5.3
Potassium Monobasic Phosphate	KH2PO4	169.225	g	7.5
Sodium Molybdate (Dihydrate)	Na2MoO4.2H2O	0.217	g	0
Potassium Silicate	K2SiO3	18.164	g	1.8

Total Cost is 17.8

Values calculated for the preparation of 1000 liters

Predicted EC Value:

Element	Result (ppm)	Gross Error	Instrumental Error
N (NO3-)	33.069	0%	+/- 0%
K	143.519	0%	+/- 0%
P	38.512	0%	+/- 0%
Mg	41.568	0%	+/- 0%
Ca	0.073	0%	+/- 0%
S	55.315	0.8%	+/- 0%
Fe	1.984	0%	+/- 0%
Zn	0.688	0%	+/- 0.5%
B	0.258	0%	+/- 0.4%
Cu	0.258	0%	+/- 1%
Mo	0.086	0%	+/- 4.6%
Na	0.315	0%	+/- 0%
Si	0.992	0%	+/- 0.1%
Cl	0	0%	+/- 0%
Mn	0.43	0%	+/- 0.3%
N (NH4+)	0.004	0%	+/- 0%

One drop of Kaliwater glass weighs about 0.035gr. $18.164\text{gr}/1000\text{L} = 0.01864\text{gr}/\text{L} = 1/2 \text{ drop} / \text{L}$

Mega Crop – Part A (A and B Bottle), without the Si filled in, because then we get the error message again.

We do not put the Kaliwater glass in the A, B or C bottle, but add this afterwards.

Note: reset the volume to 5L and choose 'Concentrated A + B Solutions'

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Element	Target Conc. (ppm)	Result (ppm)
N (NO3-)	<input type="text" value="33.069"/>	34.003
N (NH4+)	<input type="text" value="0"/>	0
P	<input type="text" value="38.5122"/>	38.512
K	<input type="text" value="143.5195"/>	143.519
Mg	<input type="text" value="41.5677"/>	41.568
Ca	<input type="text" value="0"/>	0
S	<input type="text" value="54.8945"/>	55.315
Fe	<input type="text" value="1.9841"/>	1.984
Zn	<input type="text" value="0.6878"/>	0.688
B	<input type="text" value="0.2579"/>	0.258
Mn	<input type="text" value="0.4299"/>	0.43
Cu	<input type="text" value="0.2579"/>	0.258
Mo	<input type="text" value="0.086"/>	0.086
Na	<input type="text" value="0"/>	0.315
Si	<input type="text" value="0"/>	0
Cl	<input type="text" value="0"/>	0

Zero all targets Disable Pop-ups Small Window

MegaCrop (alleen part A) **Substance Selection**

Delete Formulation From DB Copy Commercial Nutrient Formulation

Add Formulation to DB Set Water Quality Parameters

Set current values to default Set Instrument Precision Values

MegaCrop (alleen part A)

Stock solution volume Concentration Units ppm mM Grams Ounces

Gallons Liters M mN EC Model

Cubic Meters LMCv2 Empirical

Solution Preparation type Concentrated A + B Solutions Direct Addition Choose Degree of Freedom

Concentration Factor

Calculation Type Input Desired Concentrations Concentrations from Weights **Carry Out Calculation**

Copy Weight Results to DB

This returns the following result.

KNO3 differs in weight due to the loss of the Si and must therefore be adjusted to 238,262g to get to the correct ppm afterwards when we add the Kaliwater glass. We should also add 0.385g of Calcium Nitrate, but we can ignore this because the result is negligible.

Note the A's and B's for each substance. We mix the A's with 5L of water and we mix the B's with 5L of water. For example, we mixed our A and B bottles.

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Substance Name [click for url]	Formula	Amount [Edit to fine-tune]	Units	Preparation Cost
Calcium Nitrate (ag grade)	5Ca(NO3)2.NH4NO3.10H2O	0	g	0
B - Copper Sulfate (pentahydrate)	CuSO4.5H2O	1.013	g	0
A - Iron EDDHA	FeEDDHA	33.068	g	2
B - Magnesium Sulfate (Heptahydrate)	MgSO4.7H2O	421.579	g	0.9
B - Mn EDTA	MnEDTA	3.307	g	0.2
B - Sodium Borate (Decahydrate) (borax)	Na2B4O7.10H2O	2.274	g	0
B - Zinc Sulfate (Monohydrate)	ZnSO4.H2O	1.887	g	0.1
A - Potassium Nitrate	KNO3	245.404	g	5.4
B - Potassium Monobasic Phosphate	KH2PO4	169.225	g	7.5
B - Sodium Molybdate (Dihydrate)	Na2MoO4.2H2O	0.217	g	0

Element	Result (ppm)	Gross Error	Instrumental Error
N (NO3-)	34.003	2.8%	+/- 0%
K	143.52	0%	+/- 0%
P	38.512	0%	+/- 0%
Mg	41.568	0%	+/- 0%
Ca	0	0%	+/- 0%
S	55.315	0.8%	+/- 0%
Fe	1.984	0%	+/- 0%
Zn	0.688	0%	+/- 0.5%
B	0.258	0%	+/- 0.4%
Cu	0.258	0%	+/- 1%
Mo	0.086	0%	+/- 4.6%
Na	0.315	0%	+/- 0%
Si	0	0%	+/- 0%
Cl	0	0%	+/- 0%
Mn	0.43	0%	+/- 0.3%
N (NH4+)	0	0%	+/- 0%

 Export To Csv

Total Cost is 16.1

Values calculated for the preparation of 5 liters of A and 5 liters of B solution. Please use 5mL of A and B within every Liter of final solution

Predicted EC Value

EC=0.808 mS/cm

+

-

Stock Solution Analysis

Nutrient Ratio Analysis

Detailed Per Substance Contribution Analysis

Now do the same for Mega Crop – Part B (C bottle)

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Element	Target Conc. (ppm)	Result (ppm)
N (NO3-)	<input type="text" value="95.9001"/>	95.9
N (NH4+)	<input type="text" value="6.6138"/>	7.273
P	<input type="text" value="0"/>	0
K	<input type="text" value="0"/>	1.927
Mg	<input type="text" value="0"/>	0
Ca	<input type="text" value="125.6622"/>	125.624
S	<input type="text" value="0"/>	0
Fe	<input type="text" value="0"/>	0
Zn	<input type="text" value="0"/>	0
B	<input type="text" value="0"/>	0
Mn	<input type="text" value="0"/>	0
Cu	<input type="text" value="0"/>	0
Mo	<input type="text" value="0"/>	0
Na	<input type="text" value="0"/>	0
Si	<input type="text" value="0"/>	0
Cl	<input type="text" value="0"/>	0

Zero all targets

Disable Pop-ups
 Small Window

Substance Selection

Stock solution volume

Gallons Liters

Cubic Meters

Concentration Units

ppm mM

M mN

Mass Units

Grams Ounces

EC Model

LMCv2 Empirical

Solution Preparation type

Concentrated A + B Solutions Direct Addition

Concentration Factor

Calculation Type

Input Desired Concentrations

Concentrations from Weights

This gives the following result. See that only two raw materials are used and that they both have the letter A in front of them. Mix these A's with 5L of water and we have our C bottle.

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Substance Name [click for url]	Formula	Amount [Edit to fine-tune]	Units	Preparation Cost
B - Copper Sulfate (pentahydrate)	CuSO4.5H2O	0	g	0
A - Iron EDDHA	FeEDDHA	0	g	0
Magnesium Sulfate (Heptahydrate)	MgSO4.7H2O	0	g	0
Mn EDTA	MnEDTA	0	g	0
Sodium Borate (Decahydrate) (borax)	Na2B4O7.10H2O	0	g	0
Zinc Sulfate (Monohydrate)	ZnSO4.H2O	0	g	0
A - Potassium Nitrate	KNO3	4.982	g	0.1
Potassium Monobasic Phosphate	KH2PO4	0	g	0
Sodium Molybdate (Dihydrate)	Na2MoO4.2H2O	0	g	0
A - Calcium Nitrate (ag grade)	5Ca(NO3)2.NH4NO3.10H2O	661.179	g	5.2

Element	Result (ppm)	Gross Error	Instrumental Error
N (NO3-)	95.9	0%	+/- 0%
K	1.927	0%	+/- 0%
P	0	0%	+/- 0%
Mg	0	0%	+/- 0%
Ca	125.624	0%	+/- 0%
S	0	0%	+/- 0%
Fe	0	0%	+/- 0%
Zn	0	0%	+/- 0%
B	0	0%	+/- 0%
Cu	0	0%	+/- 0%
Mo	0	0%	+/- 0%
Na	0	0%	+/- 0%
Si	0	0%	+/- 0%
Cl	0	0%	+/- 0%
Mn	0	0%	+/- 0%
N (NH4+)	7.273	10%	+/- 0%

Total Cost is 5.3

Values calculated for the preparation of 5 liters of A and 5 liters of B solution. Please use 5mL of A and B within every Liter of final solution

Predicted EC Value

Eventually, you're going to have three bottles. The A+B bottle you have obtained from the first recipe. Being bottle A and B. And the A bottle from the second recipe. Being bottle C.

Below you can see the amounts you need to make 1L of food.

Seedlings to late Veg 3ml A & 3ml B & 5ml C + 1/3 drop Kaliwater glass Late veg/Early Bloom 5ml A & 5ml B & 5ml C + 1/2 drop Kaliwater glass (+ 3.3ml Bud Booster)

Full Bloom 8.4ml A & 8.4ml B & 3.6ml C + 1 drop Kaliwater glass (+ 5ml Bud Booster)

Bud Booster HP (5L)

16g Magnesium Sulfate

381g Mono Potassium Phosphate

Bloom – week 1-3 = 3.3ml/L

Bloom – week 3 - harvest 5ml/L