

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)

HydroBuddy v1.91 - Programmed and Designed by Dr. Daniel Fernandez Ph.D at <http://scienceinhydroponics.com>

Welcome Main Page Results About

PayPal Donate

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

Zero all targets

Disable Pop-ups

Small Window

MegaCrop (alleen part A)

Delete Formulation From DB

Add Formulation to DB

Substance Selection

Copy Commercial Nutrient Formulation

Set Water Quality Parameters

Instrument Precision Values

Units

Mass Units

Grams

Ounces

EC Model

LMCv2

Empirical

Choose Degree of Freedom

Solution Preparation type

Concentrated A + B Solutions

Direct Addition

Concentration Factor

200

Calculation Type

Input Desired Concentrations

Concentrations from Weights

Carry Out Calculation

Copy Weight Results to DB

HydroBuddy - an Open source nutrient calculator

Substance Potassium Silicate is incompatible with concentrated solutions

OK

HydroBuddy MegaCrop (part B only) becomes → C bottle

HydroBuddy v1.91 - Programmed and Designed by Dr. Daniel Fernandez Ph.D at <http://scienceinhydroponics.com>

Welcome Main Page Results About

PayPal Donate

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

Zero all targets

Disable Pop-ups

Small Window

MegaCrop (alleen part B)

Delete Formulation From DB

Add Formulation to DB

Set current values to default

MegaCrop (alleen part B)

Substance Selection

Copy Commercial Nutrient Formulation

Set Water Quality Parameters

Set Instrument Precision Values

Stock solution volume

5

Gallons

Liters

Cubic Meters

Concentration Units

ppm

mM

M

mN

Mass Units

Grams

Ounces

EC Model

LMCv2

Empirical

Choose Degree of Freedom

Solution Preparation type

Concentrated A + B Solutions

Direct Addition

Concentration Factor

200

Calculation Type

Input Desired Concentrations

Concentrations from Weights

Carry Out Calculation

Copy Weight Results to DB

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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Welcome Main Page Results About

PayPal Donate

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 (all part A) Delete Formulation From DB Add Formulation to DB Set current values to default MegaCrop (all part A)

Substance Selection Copy Commercial Nutrient Formulation Set Water Quality Parameters Set Instrument Precision Values

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

Calculation Type: ☒ Input Desired Concentrations ☐ Concentrations from Weights

Carry Out Calculation

Copy Weight Results to DB

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

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Welcome Main Page Results About

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	0.017	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: EC=0.804 mS/cm

Stock Solution Analysis

Nutrient Ratio Analysis

Detailed Per Substance Contribution Analysis

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%

Export To Csv

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

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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Welcome Main Page Results About

PayPal Donate

Element	Target Conc. (ppm)	Result (ppm)
N (NO ₃ -)	33.069	34.003
N (NH ₄ +)	0	0
P	38.5122	38.512
K	143.5195	143.519
Mg	41.5677	41.568
Ca	0	0
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	0
Cl	0	0

Zero all targets

Disable Pop-ups Small Window

MegaCrop (alleen part A)

Delete Formulation From DB

Add Formulation to DB

Set current values to default

MegaCrop (alleen part A)

Substance Selection

Copy Commercial Nutrient Formulation

Set Water Quality Parameters

Set Instrument Precision Values

Stock solution volume

5

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 ☐

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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WelcomeMain PageResultsAbout

Substance Name [click for url]	Formula	Amount [Edit to fine-tune]	Units	Preparation Cost
Calcium Nitrate (ag grade)	5Ca(NO ₃) ₂ .NH ₄ NO ₃ .10H ₂ O	0	g	0
B - Copper Sulfate (pentahydrate)	CuSO ₄ .5H ₂ O	1.013	g	0
A - Iron EDDHA	FeEDDHA	33.068	g	2
B - Magnesium Sulfate (Heptahydrate)	MgSO ₄ .7H ₂ O	421.579	g	0.9
B - Mn EDTA	MnEDTA	3.307	g	0.2
B - Sodium Borate (Decahydrate) (borax)	Na ₂ B ₄ O ₇ .10H ₂ O	2.274	g	0
B - Zinc Sulfate (Monohydrate)	ZnSO ₄ .H ₂ O	1.887	g	0.1
A - Potassium Nitrate	KNO ₃	245.404	g	5.4
B - Potassium Monobasic Phosphate	KH ₂ PO ₄	169.225	g	7.5
B - Sodium Molybdate (Dihydrate)	Na ₂ MoO ₄ .2H ₂ O	0.217	g	0

Element	Result (ppm)	Gross Error	Instrumental Error
N (NO ₃ -)	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 (NH ₄ +)	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)

HydroBuddy v1.91 - Programmed and Designed by Dr. Daniel Fernandez Ph.D at <http://scienceinhydroponics.com>

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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

MegaCrop (alleen part B)

Delete Formulation From DB

Add Formulation to DB

Set current values to default

MegaCrop (alleen part B)

Substance Selection

Copy Commercial Nutrient Formulation

Set Water Quality Parameters

Set Instrument Precision Values

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

Choose Degree of Freedom

Calculation Type

☒ Input Desired Concentrations
☐ Concentrations from Weights

Copy Weight Results to DB

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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Welcome Main Page Results About

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 EC=0.763 mS/cm + -

Stock Solution Analysis

Nutrient Ratio Analysis

Detailed Per Substance Contribution Analysis

 Export To Csv

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