

Phosphate to Aqua Ammonia Ratio Blend

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Q. When creating liquid Blends for Tobacco, we need to formulate based on a ratio of one part Aqua Ammonia to three parts Phosphate.

A. To accomplish this ratio in Agvance Blending, set up the Nitrogen form breakdown on the *Blend Setup* tab of the product to fulfill the 33.34% Nitrogen needed to satisfy the request. This product may not be the cheapest product available; therefore, through Least Cost Formulation, the remaining Nitrogen request will be fulfilled by the cheapest Nitrogen source.

In this example, a one ton request of 4-4-10-1S-2Cl will be used. Aqua Ammonia is the Nitrogen product that will fulfill the one part Nitrogen for three parts of Phosphorus. Edit the product, and navigate to the *Blend Setup* tab. In the *Nutrient Contributor Information* area, Aqua Ammonia is set up at 24.6 units of Nitrogen. Select the **Details** button. On the *N* tab, the Nitrogen form is set up as 100% Ammoniacal Nitrogen.

When adding a Blend Ticket, in the *Formulate By* area, select *Guaranteed Analysis*. Enter the request for the Blend, such as 4-4-10-1S-2Cl, and then double click on *N*. In the *Set Nutrient Source Constraints* window, set the % *Ammoniacal Nitrogen* to \geq , and enter '33.34.' Choose **OK**.

Note: The following is the formula used to arrive at the value entered for % *Ammoniacal Nitrogen* in this example.

$$4 \text{ (The Phosphorus request in the Blend)} \times 33.34\% \text{ (1/3 of the Phosphorus request to be fulfilled by Aqua Ammonia)} = 1.3336$$

$$1.3336 / 4N \text{ (The Nitrogen request in this example)} = 33.34\%$$

Select the **Formulate** button, and review the results.

The screenshot shows the 'Add Blend Ticket # 243' window with the 'General' tab selected. The 'Products' section lists several items:

#	Product Name	Rate/Ton	Unit	Total Product	Unit	Blended	Blended Unit	Scale	Carrier	DeptID	ProdID	Lot #	Crop Code	Container	Order	Unit Weight	Rate2Bnd	Bnd2Inv	BNDiv	Density	Total MLbs	Inv UH
1	0.54-0 Phos Acid	148.140	Lbs	148.140	Lbs	148.000	Lbs	3			LiquM	0540PhosAd			1	2000.00000	1.0000000	2000.0...	1.00...	13.998	148.148000	Tons
2	0-0-62.41 - 48Cl / Sol Mur Pot	69.287	Lbs	69.287	Lbs	69.000	Lbs	3			LiquM	0062SolMur			2	2000.00000	1.0000000	2000.0...	1.00...	16.681	69.287000	Tons
3	12-0-46 -2Cl - Potassium Nitrate	337.114	Lbs	337.114	Lbs	337.000	Lbs	3			LiquM	12046PotN			3	2000.00000	1.0000000	2000.0...	1.00...	70	337.114000	Tons
4	Aqua Ammonia 24.6N	107.140	Lbs	107.140	Lbs	107.000	Lbs	3			LiquM	AquaAmM			4	2000.00000	1.0000000	2000.0...	1.00...	7.001	107.140000	Tons
5	Water	1257.444	Lbs	1257.444	Lbs	1257.000	Lbs	3			LiquM	Water			5	1	1	1	2000	8.3	1257.444	Lbs
6	32-0-0	3.944	Lbs	3.944	Lbs	4.000	Lbs	3			LiquM	32-0-0			6	1	1	1	2000	11.05	3.944000	Lbs
7	Anthio Sulf - 12% N 26%S	76.923	Lbs	76.923	Lbs	77.000	Lbs	3			LiquM	AnthioS			7	2000.00000	1.0000000	2000.0...	1.00...	11.001	76.923000	Tons

The 'View Analysis' dialog box is open, showing the following data:

	N	P	K	S	Cl	Ca	Mg	Zn	Fe	Mn	Cu	B
Ordered	4.00	4.00	10.00	1.000	2.0000							
Blended	80.00	80.00	200.00	20.000	40.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Analysis	4.00	4.00	10.00	1.000	2.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

At the bottom of the window, there are buttons for 'Recalc using Rate/Ton', 'Recalc using Total Product', 'Recalc using Blended', and 'Recalc using Scale'. A summary table is also visible:

Density	4.566	% Water	62.872	% Clay	0
Gall/Ton	437.993	Total Gal	437.993	Est Salt Out Temp	NA
Lbs/Ton	2000	Total Lbs	1999	Est Temp Change	0

Note: This N request is finished by other sources with Nitrogen contributors that are cheaper than the Aqua Ammonia.