Blend Type Setup

Setting up blend types from scratch can be a little daunting so we've added some basic blend types to your agrē database that you can use as a 'template' to modify or copy.

Caution Once you've used a blend type to make a blend there will be some fields that cannot be changed, so taking a few extra minutes up front to make sure everything is setup the way you want it may save you quite a bit of time later.

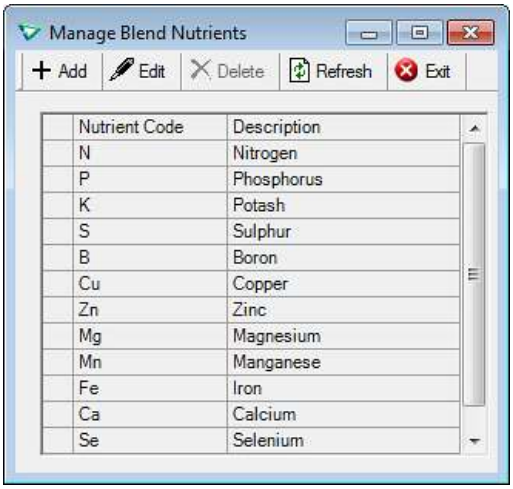
Tip If you aren't using **blend charges** now but think you may in the future, Tronia recommends setting up blend types with a blend charge product priced at $0. You can change the price of a product at any time, but agrē won't allow you to add a blend charge to a blend type that's already been used.

What you'll find:

Blend Nutrients

Help	For details on how to work with *Blend Nutrients*, please refer to the *Blending* chapter of ***online Help***.

Before you can start setting up blend types, all the nutrients you use will need to be defined.



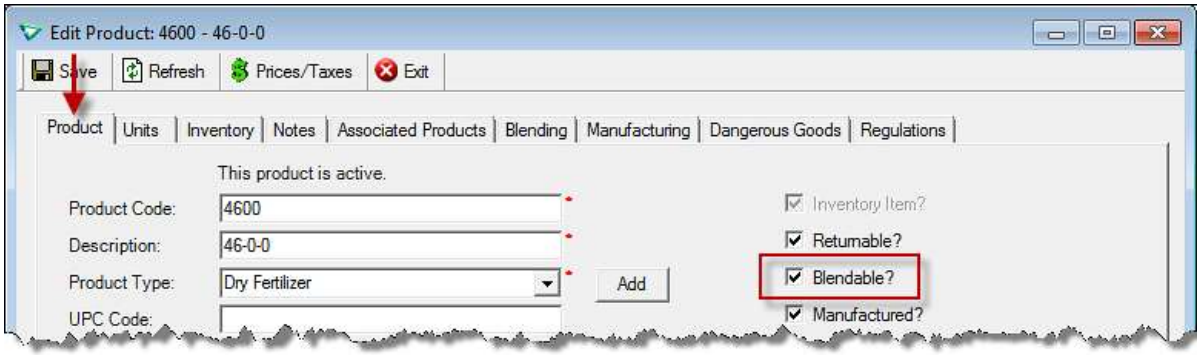
Blending > Manage > Blend Nutrients

Dry Blends (scaled and volumetric)

Setting Up Dry Blend Products

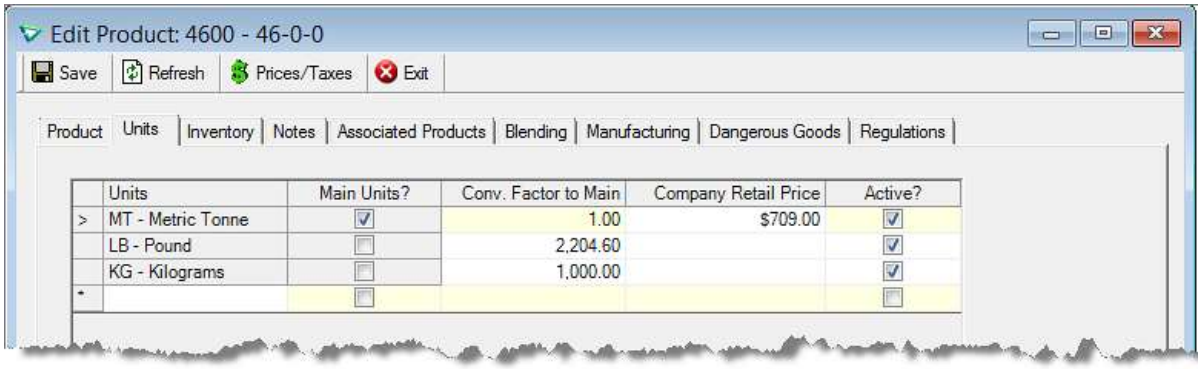
Help	For more details on how to setup products, please refer to the *Inventory* chapter of ***online Help***.

On the ***Products tab***, they must be flagged as an *Inventory Item* and be *Blendable*.



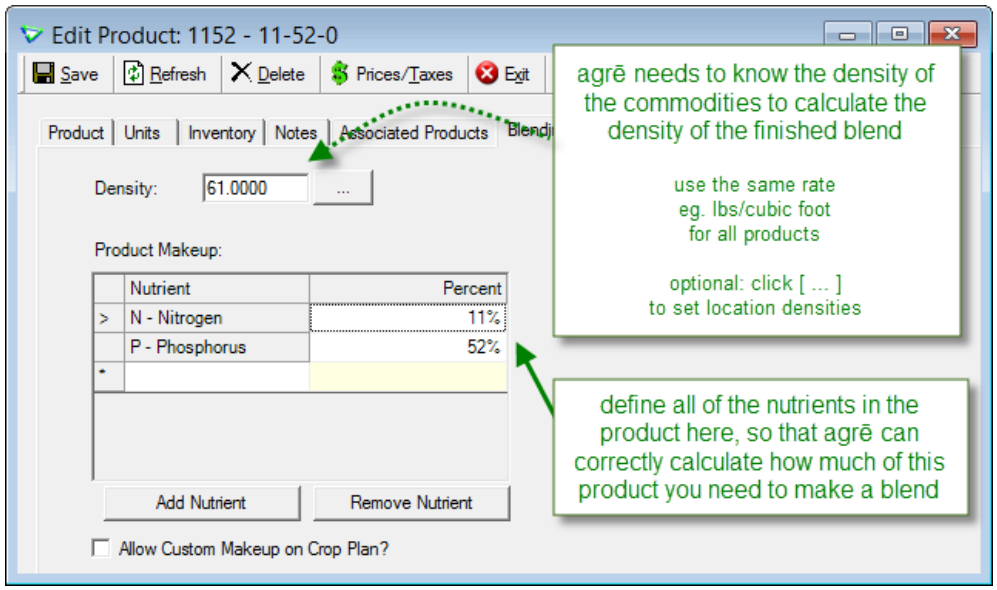
On the ***Units tab***, you need to include all units you'll use with your blender. The main unit type must be the same as the main *Blend Type* units. Most of the time, MT alone will be adequate, unless your blender

is scaled in kilograms or pounds. If you're using a volumetric blender, you will need two matching unit types – main units and scale units.



Inventory > Manage > Products

The ***Inventory, Notes,*** and ***Associated Products*** tabs can be left as is. The ***Blending*** tab, however, is crucial:



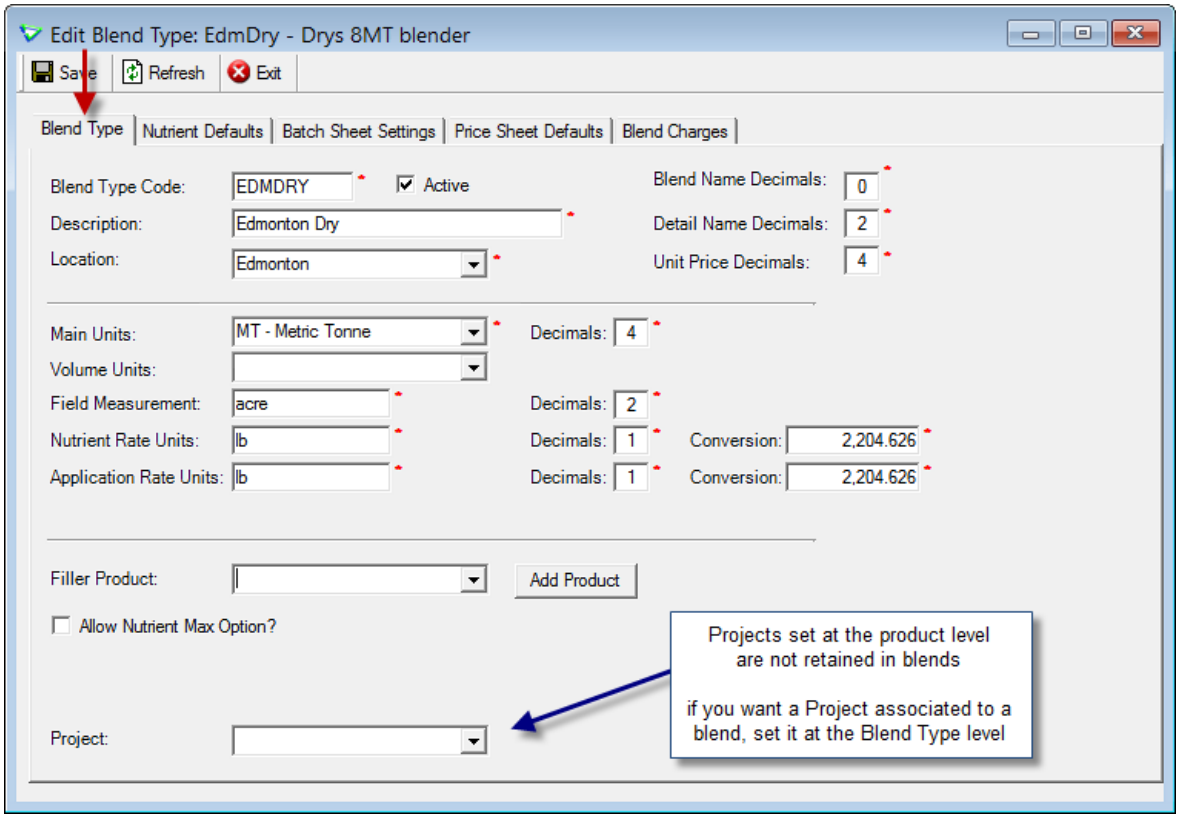
Setting Up Dry Blend Types

agrē comes with at least one blend type already configured for you. Have a look and see how it is set up:

Blending > Manage > Blend Types

Blend Type tab

The ***Blend Type*** tab outlines the units and conversion factors you'll be using most of the time:



Caution	***Main Units*** and ***Conversion*** factors cannot be changed once the blend type has been used to Make a Blend.

Main Unit is the measurement unit for the completed blend (the total amount that is made is calculated in these units). For scaled blenders, it's usually **Metric Tonnes**. If you work in other units, just change these to whatever it is you commonly use, and modify the conversion rates appropriately.

Field measurement is a unit of area – usually acre or hectare – and is the unit of measurement for the broadcast area.

Nutrient rate unit is the unit in which the quantity of nutrient per unit of broadcast area is measured – kilograms or pounds – so that you end up with kilograms per hectare, or pounds per acre. You must specify how to convert the nutrient rate unit to main units – the conversion factor is Nutrient Rate Unit / Main Units (in this example, there are 2204.6226 lbs per MT).

Broadcast Rate Unit is the quantity that is spread over the field – this might be a dry or liquid measure, depending on the finished product.

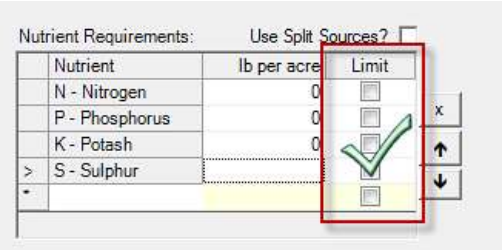
The ***Decimal*** fields specify the number of decimals to be used for the relevant data item. Decimal values must be 4 or less.

> **Tip** ***Unit Price Decimals*** affect how much rounding occurs on the price per main unit (the more decimals, the less rounding), but the total price (quantity*unit price) will always have 2 decimals no matter what value is typed here.

In the ***Filler Product*** box, enter the filler product you want to use for the blend type. Filler products are only used for the blend name or calculation method when the guaranteed analysis is exceeded.

Check ***Allow Nutrient Max Option?*** to set *maximum* NPKS values instead of *minimum* NPKS values.

An extra column will appear on ***Make a Blend*** allowing you to ***Limit*** the amount of one or more nutrients. It's not foolproof (the calculation has to balance using the selected products, so the value could still be exceeded), but it should get you closer to your targets.



Select the ***Allow Suspensions?*** check box if this is a liquid blend type using suspensions.

Select the ***Project*** to which all blends made with this type should be associated. (projects associated with blend commodities [46-0-0, 11-52-0, etc.] are not carried over to blends)

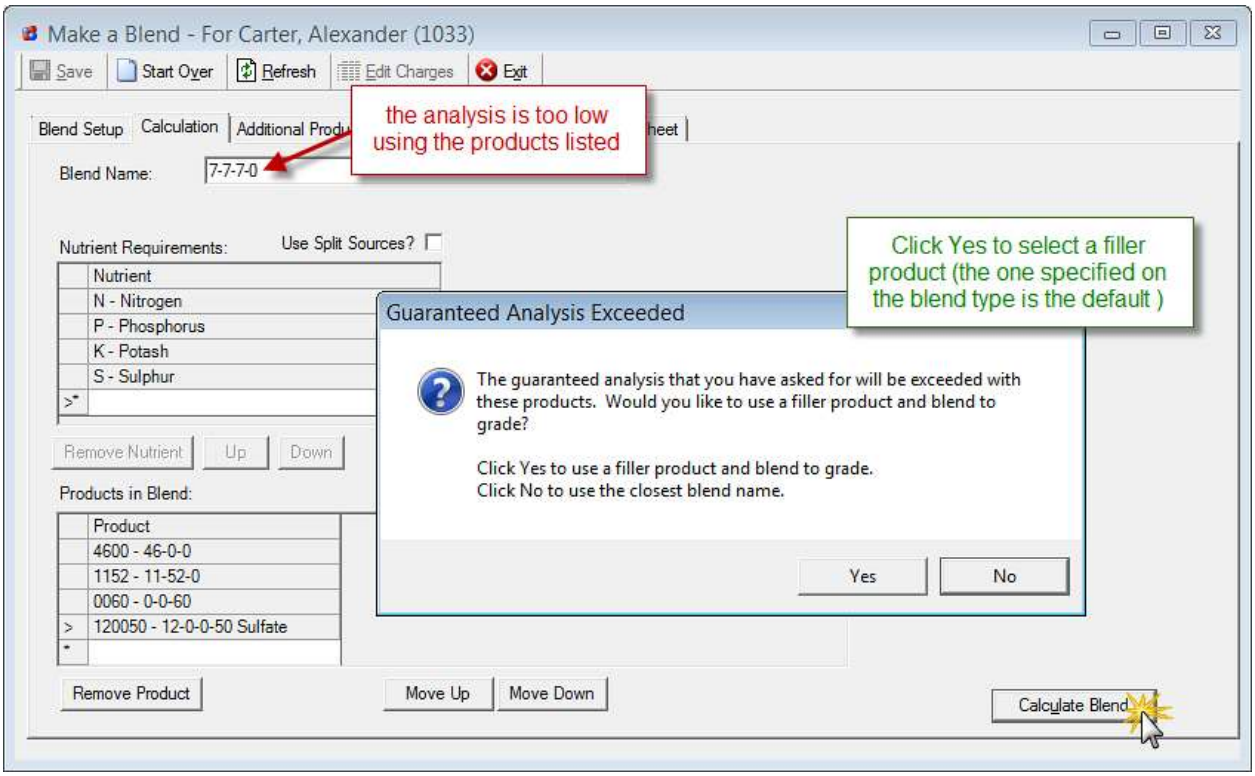
Blend to Grade

When you make a blend using a **blend name** or **guaranteed analysis** calculation method, you may ask for an analysis that isn't possible using the products listed. The analysis may be either unattainable (e.g., 90-90-90) or too low using the products listed (e.g., 7-7-7). If the analysis isn't attainable, then agrē provides you with a blend that achieves the desired ratios and the attained guaranteed analysis (e.g., 17-17-17). However, if the analysis given is too low, agrē gives you the option to "blend to grade" by using a ***Filler Product***. For each of your blend types, you can optionally specify a default filler product.

The ***Filler Product*** must be an inventory item, must be blendable, must be active, and must have the main unit type (and volume units if applicable).

> **Note** Filler products are only used if you are **calculating** a blend **based on blend name or nutrient rate**, *and* the guaranteed analysis is exceeded.

When you calculate the blend, you'll be asked if you want to add the filler product.

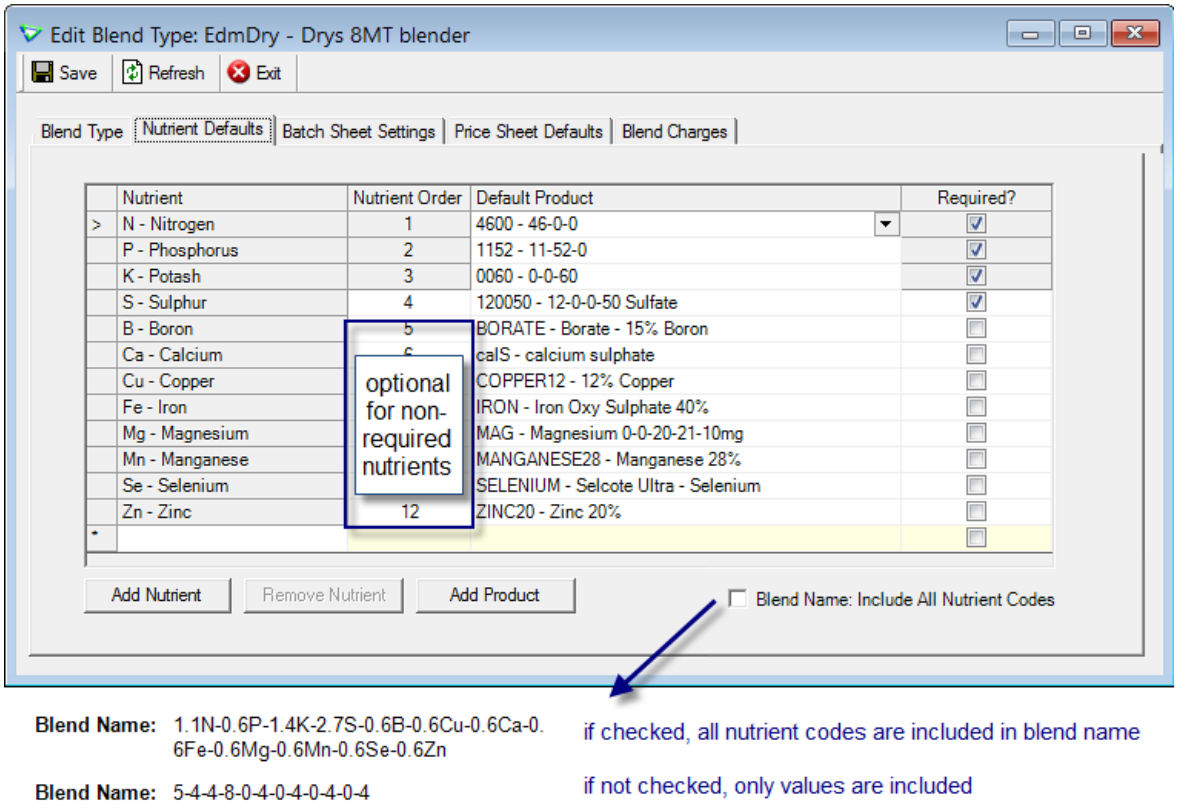


Make a Blend > Calculate Blend

Once you click ***Use Selection***, the blend would be calculated using enough filler product to bring the analysis down to grade.

Nutrient Defaults tab

When you are calculating blends, it can be handy to have the system provide default products for the nutrients you request in the blend. The ***Nutrient Defaults*** tab lets you set up those defaults, but at ***Make a Blend*** time you can change to a different product if you wish:



N, P and K are always there, always in that order, and always required.

Other nutrients can be made ***required*** – these will always display in the blend name (even if 0), in the order specified (if it is required, it must have an order). There can be **no gaps between required nutrients** (the numbers must be consecutive, you can't have a non-required nutrient before a required one in the sequence). This effectively means that required nutrients must be N, P, K and then whatever other nutrients you want required, followed by any optional nutrients for which you'd like to specify the order of appearance.

A nutrient that is *not* required can have an order number – this will be the 'starting point' for the order when on ***Make a Blend*** – and will be included in the blend name only if the value is greater than 0.

Note	When calculating a blend, all non-required nutrients can be moved around – the order is just a starting point.

Tip	You can **add** a ***nutrient*** or a ***product*** on the fly with the buttons at the bottom.

You can **remove** the selected nutrient from the list with the ***Remove Nutrient*** button (as long as it isn't N, P or K).

The **default product** will be added to the Products in Blend grid on the Make a Blend form whenever you add this nutrient to a blend of this blend type. It's just a default, though, you can remove it and replace it with another product on the fly if you want. The product you define must contain the nutrient in its product definition (see Adding Products / Blending tab in online Help).

If you commonly create blends with different 'default products' (say, a slow-release nitrogen instead of straight 46) you might want to create a new blend type for that sort of blend. The new blend type can have slow-release product as the default for nitrogen, saving you from having to change out the product each time you make a slow-release blend.

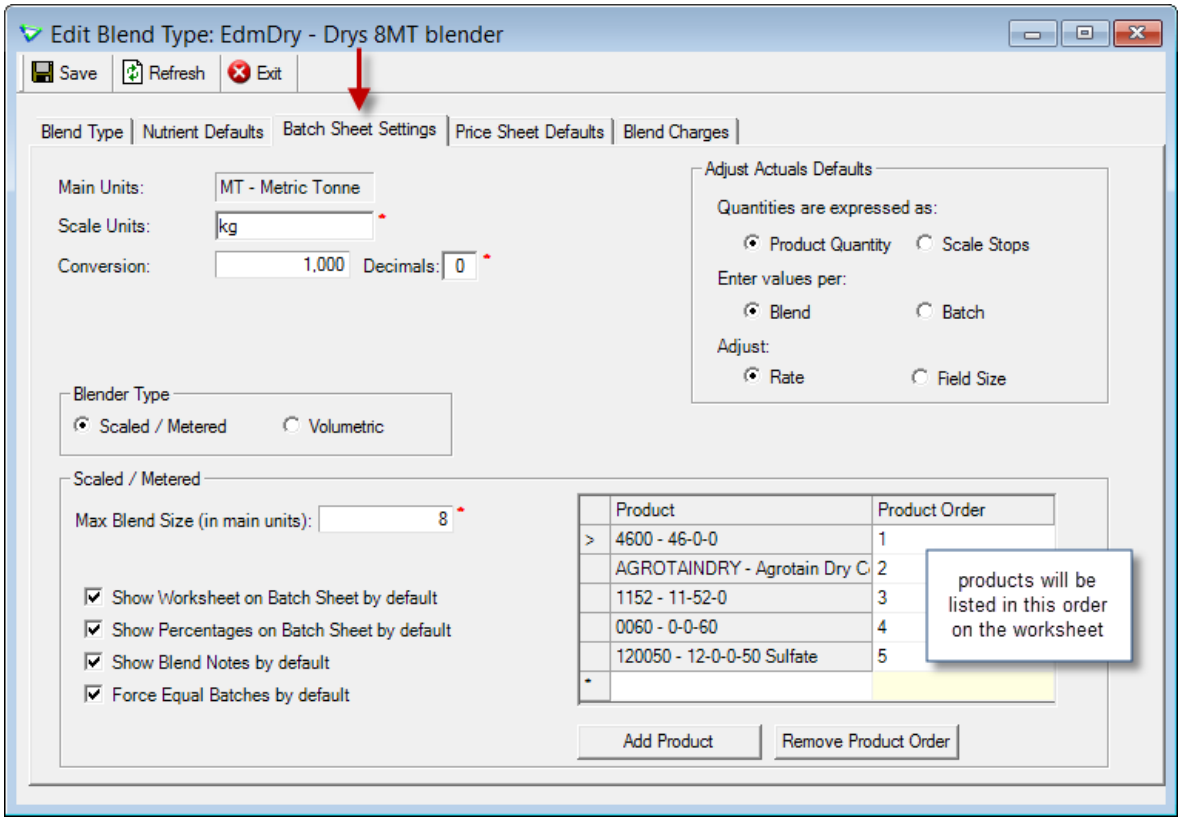
Tip

If you decide to create another blend type almost like this one but with small changes (maybe with different default products, or without a blend charge), you can copy the blend type by clicking ***Copy*** .

Blending > Manage > Blend Types

Batch Sheet Settings tab

The ***Batch Sheet Settings*** tab is where you define the conversion rates between your scale units and your main blend units, as well as the maximum size of your blender and the order in which you want products to be put through the blender.



This tab displays the ***Main Units*** (and ***Volume units*** if you have them) just to be helpful (if you want to change them, head back over to the Blend Type tab).

The ***Scale Units*** represent the units the actual blending equipment uses, and the ***Conversion*** factor is Scale Units / Main Units. ***Decimals*** tells you how many decimal places the scale can understand.

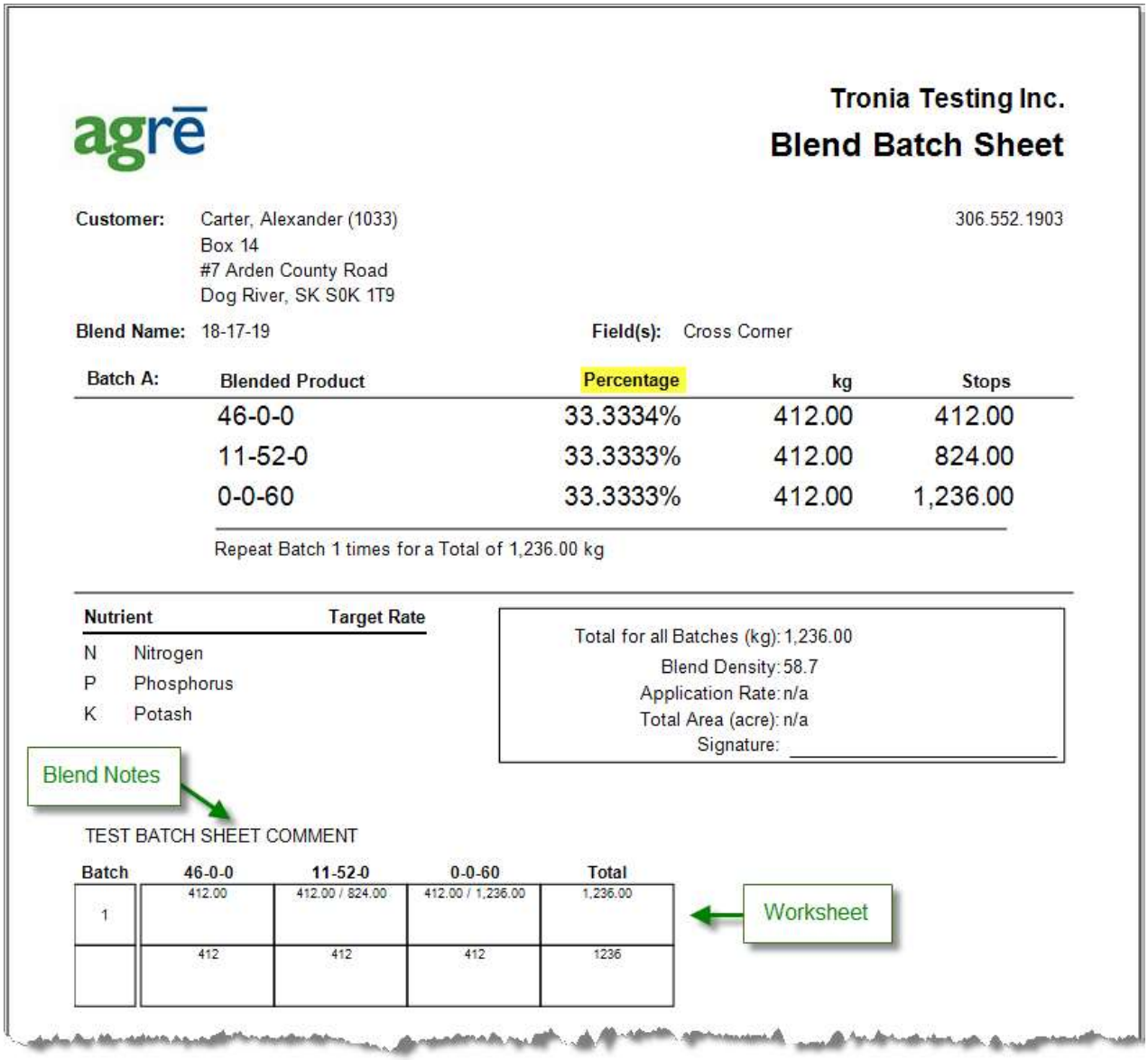
Adjust Actuals Defaults can be changed on the fly when you're adjusting a blend.

You can choose either ***Scaled/Metered*** or ***Volumetric*** for your ***Blender Type***. If you have entered settings for one and then switch the radio button to use the other type, you'll be warned that you will lose your settings if you proceed with the change.

Tip	***Save*** before you click ***Volumetric***! If you change your mind, you'll still have the settings you've already made (including ones on other tabs) up to this point.

For Scaled Blenders

Max Blend Size is the capacity of the blender.



Tronia Testing Inc.

Blend Batch Sheet

Customer: Carter, Alexander (1033)
Box 14
#7 Arden County Road
Dog River, SK S0K 1T9

306.552.1903

Blend Name: 18-17-19 **Field(s):** Cross Corner

Batch A:	Blended Product	Percentage	kg	Stops
	46-0-0	33.3334%	412.00	412.00
	11-52-0	33.3333%	412.00	824.00
	0-0-60	33.3333%	412.00	1,236.00

Repeat Batch 1 times for a Total of 1,236.00 kg

Nutrient	Target Rate
N Nitrogen	
P Phosphorus	
K Potash	

Total for all Batches (kg): 1,236.00
Blend Density: 58.7
Application Rate: n/a
Total Area (acre): n/a
Signature: _____

Blend Notes

TEST BATCH SHEET COMMENT

Batch	46-0-0	11-52-0	0-0-60	Total
1	412.00	412.00 / 824.00	412.00 / 1,236.00	1,236.00
	412	412	412	1236

Worksheet

Worksheet, ***Percentages***, and ***Blend Notes***: check the ones you'd *usually* like to see on each batch sheet (these are just defaults; you can uncheck them on a blend-by-blend basis).

Force Equal Batches can also be changed on the fly when you are making actual blends.

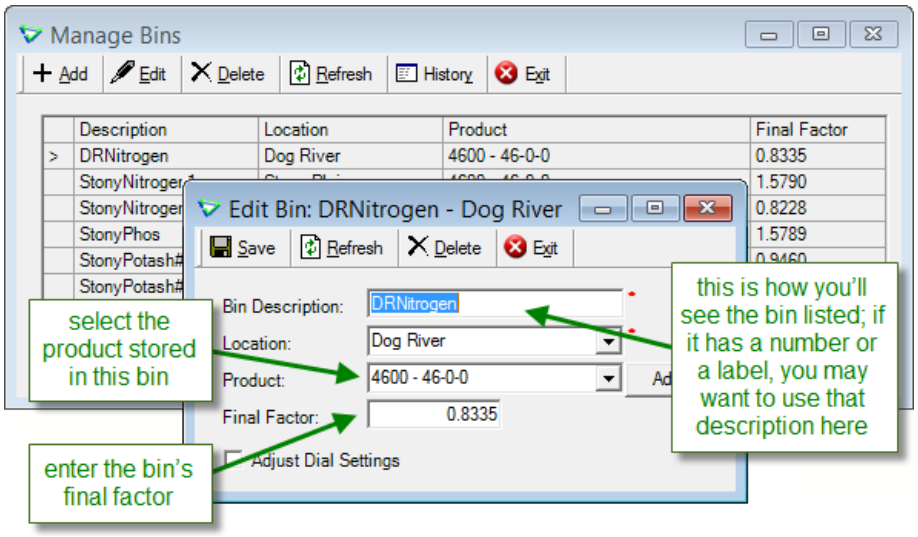
The only ***Products*** that will show on this list are **active, blendable** and have the **main unit type defined** on the product.

The idea is to list the products in the order you want them added to the blender – this will affect the order that the products show up on the batch sheet. Ties are allowed. Anything that should go in first should have a low number (like 1) and anything that should go in last should have a high number (like 9). Any product that isn't in the list will be placed second last (but only when there is a qualified "last" product to be used).

If you don't specify a ***Product Order***, they will be listed in the same order you see them on the Calculation tab when you are making a blend.

For Volumetric Blenders

First you'll need a bin for *each product* you use in a blend for *each location* that that has a volumetric blender.



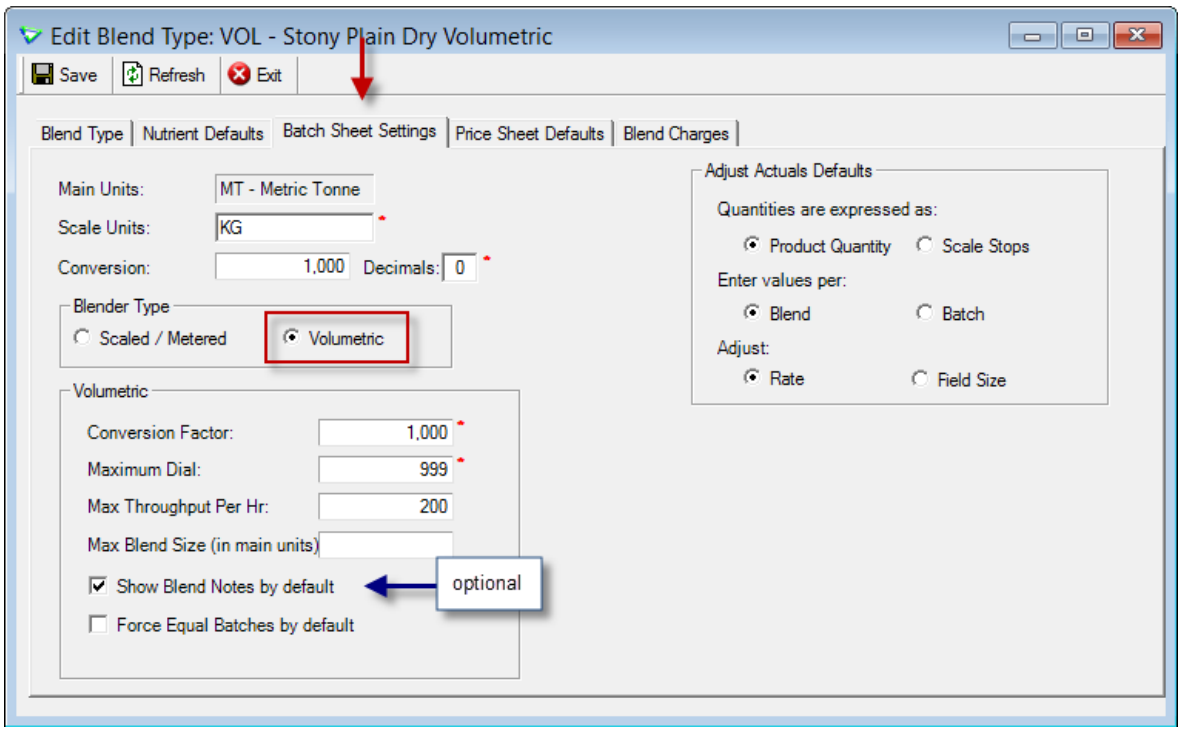
Blending > Manage > Bins

Bin description is required and must be unique per location.

The ***Final Factor*** is the rate that the product comes out of the bin (e.g. in kg/rpm). If a bin can output 0.3765 kg per rpm, set the final factor to be .3765. Basically, this means that for each tick of the dial (revolution), this amount of product will be output per minute. So set the dial to 100 and you would get 37.65kg/minute output from the given bin.

Note	Keep track of the bin units that you are using, as you need to specify the **conversion factor** between units of final factor and main units of the blend type (done on the blend type). For example, if you are using KG as the units for the final factors, and the main units of the blend type is MT, then the final factor conversion for the blend type is 1000 (1000 kg in a tonne).

The Batch Sheet tab for **volumetric blenders** looks a little different:



Conversion factor: This converts the final factor units to main units. This is the conversion from the units used in the bin final factor to the main units for the given blend type. For example, if the final factors are calculated based on kilograms and the blend type main units are in tonnes, the final factor conversion is 1000 (1000 kg in a tonne).

Maximum dial: This is the maximum setting (rpm) on the blending equipment. Typically the dials can be set from 0 to 1000 but often times the manufacturer may recommend a maximum setting of say 900 or 990, etc. The dial settings control the speed of the augers (typically represent rpm – revolutions per minute). When the system calculates the batch settings, it will take the maximum dial settings into consideration and will not assign a dial setting higher than this number.

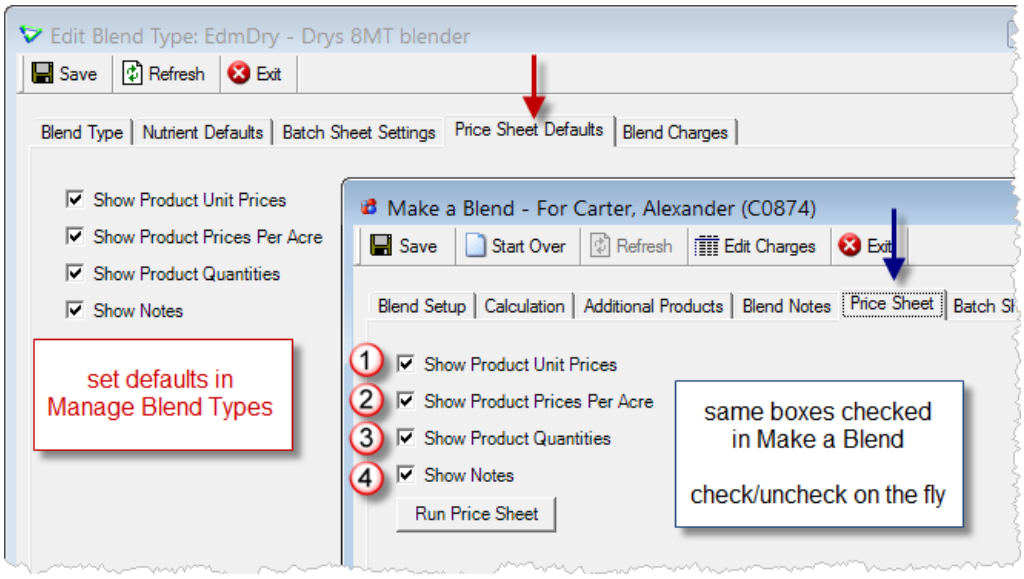
Max throughput per hour: This represents the maximum amount of blended product that can be output per hour. This is measured in main unit type. Note that each bin has an auger (or multiple augers) and has its own maximum capability (the maximum dial setting). If all augers ran at their maximum capability, likely the system would be overloaded. The system itself has a maximum throughput for all products/bins combined. When the system calculates the batch settings, the maximum throughput is considered and the dial settings are adjusted to make sure that the maximum throughput isn't exceeded.

Max Blend Size (in main units) is normally the capacity of the vehicle/trailer/container into which the blend is loaded. Since this can change for every customer, you may want to leave it blank.

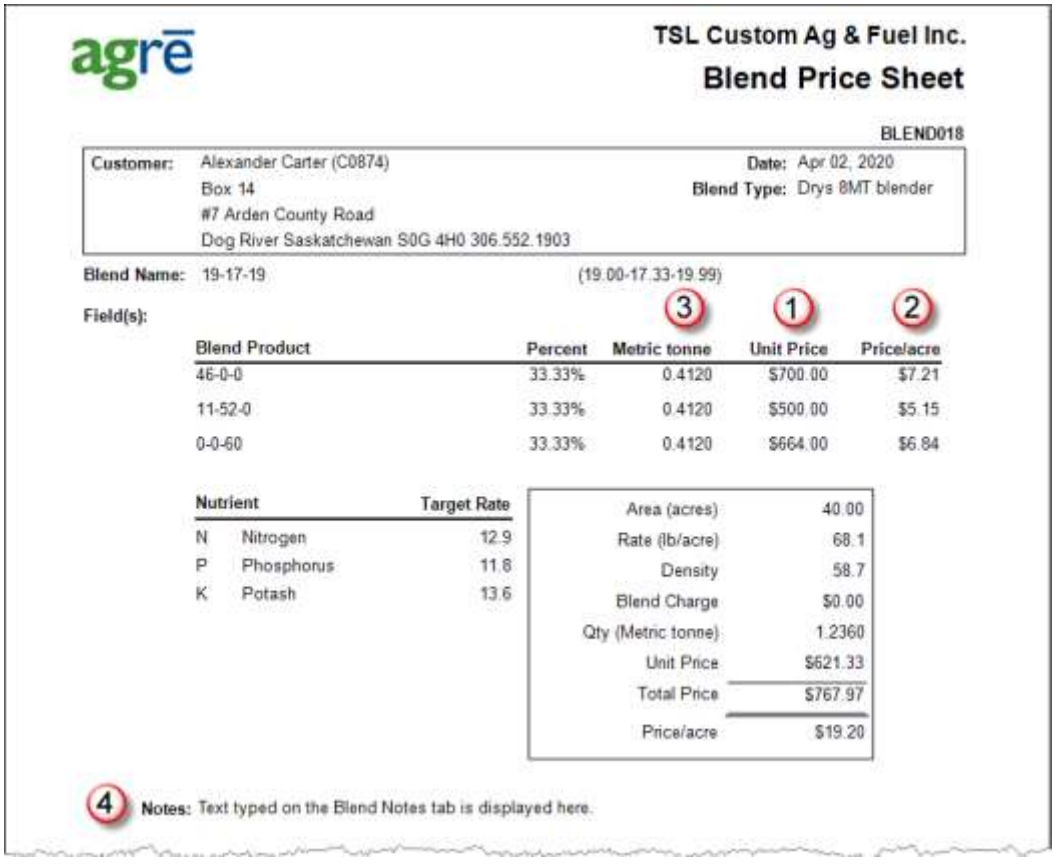
Force Equal Batches by default can be changed on the fly when you are making actual blends.

Price Sheet Defaults tab

The ***Price Sheet Defaults*** tab tells agrē what commodity pricing to print - by default - on the Price Sheet.

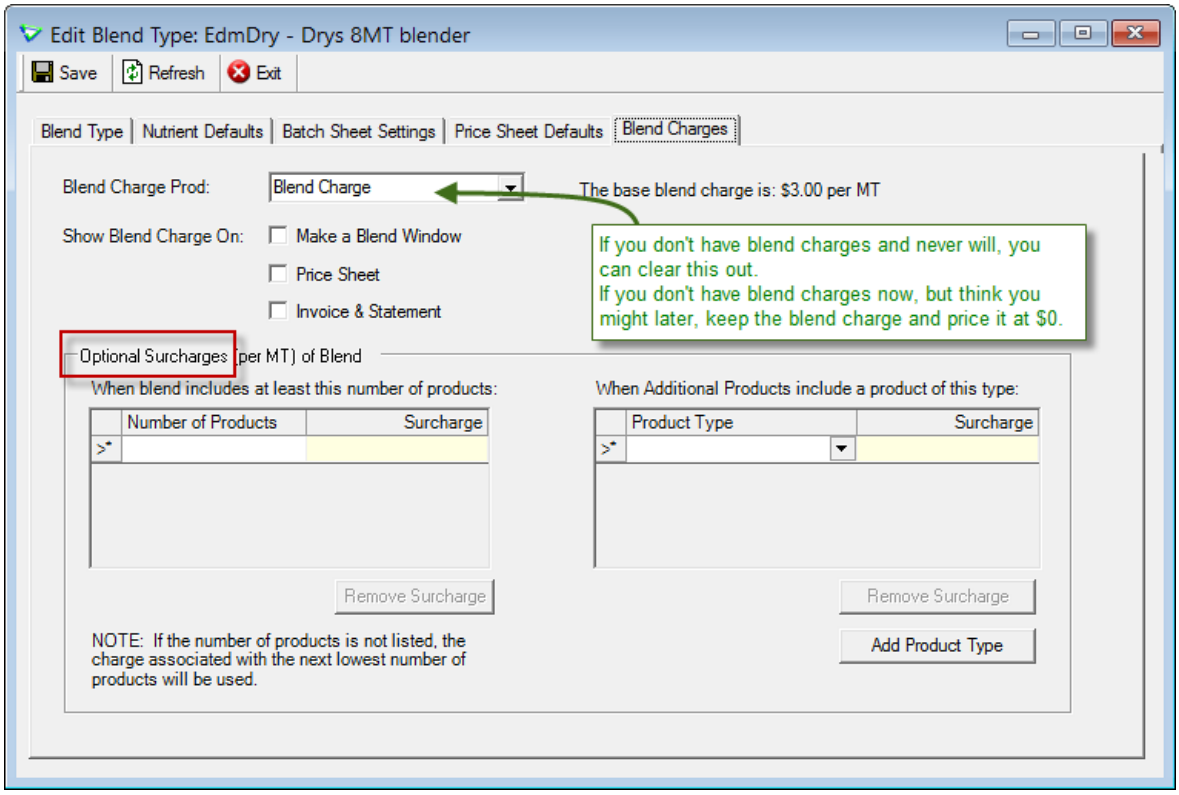


Tip These settings are just defaults - you can change the show/hide status of each price on the ***Make a Blend Price Sheet tab*** before you print.



Blend Charges tab

If your company charges a fee for blending, that can be set up on the last tab:



Caution ***Blend Charge Product*** cannot be changed once the blend type has been used to Make a Blend (but the price of it can be changed at any time).

There may be a ***Blend Charge Product*** already set up in your database called "Blend Charge" – if so its price has been set to $0 but can be changed.

Show Blend Charge On: you can display the blend charge only where you want the customer to see it.

Optional Surcharges can be added based on:

- the number of products in the blend
  (e.g. you'll mix 4 products for free, but add any more and there'll be additional charges)
- product type
  (e.g. the customer wants seed added to the blend which means you'll need to be compensated for the extra time spent to clean out the blender afterwards)

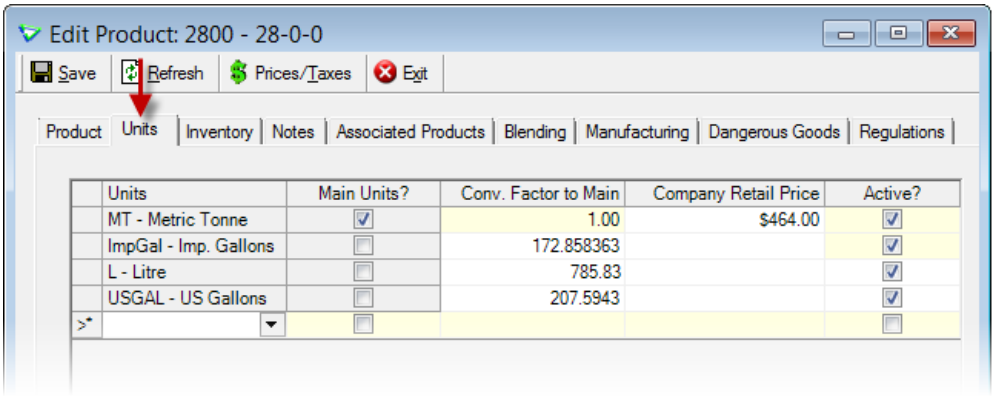
Liquid Blends

> **Note** Much of the liquid setup is the same as dry, so mainly what's different for liquids will be covered here. Head back up to the Dry Blends section for more details about the fields and settings common to both types.

Setting Up Liquid Blend Products

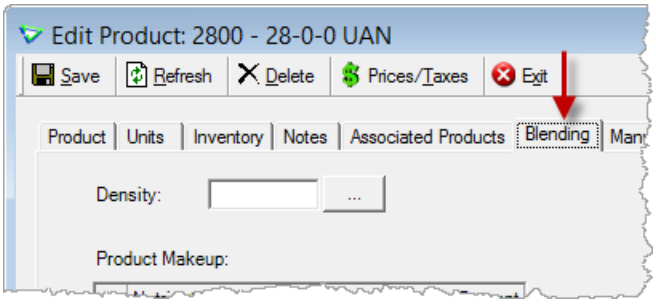
You will need to setup *each* product that will be used in liquid blends.

- On the ***Units tab***, MT (or whichever Main Unit is specified on the blend type) is required, but products also need a unit type to reflect the volume. Add your liquid ***Unit***, usually GAL (either US or Imperial but keep it consistent for all products), along with the applicable ***Conversion Factor to Main***.



> **Note** Different products will likely have different conversion factors.

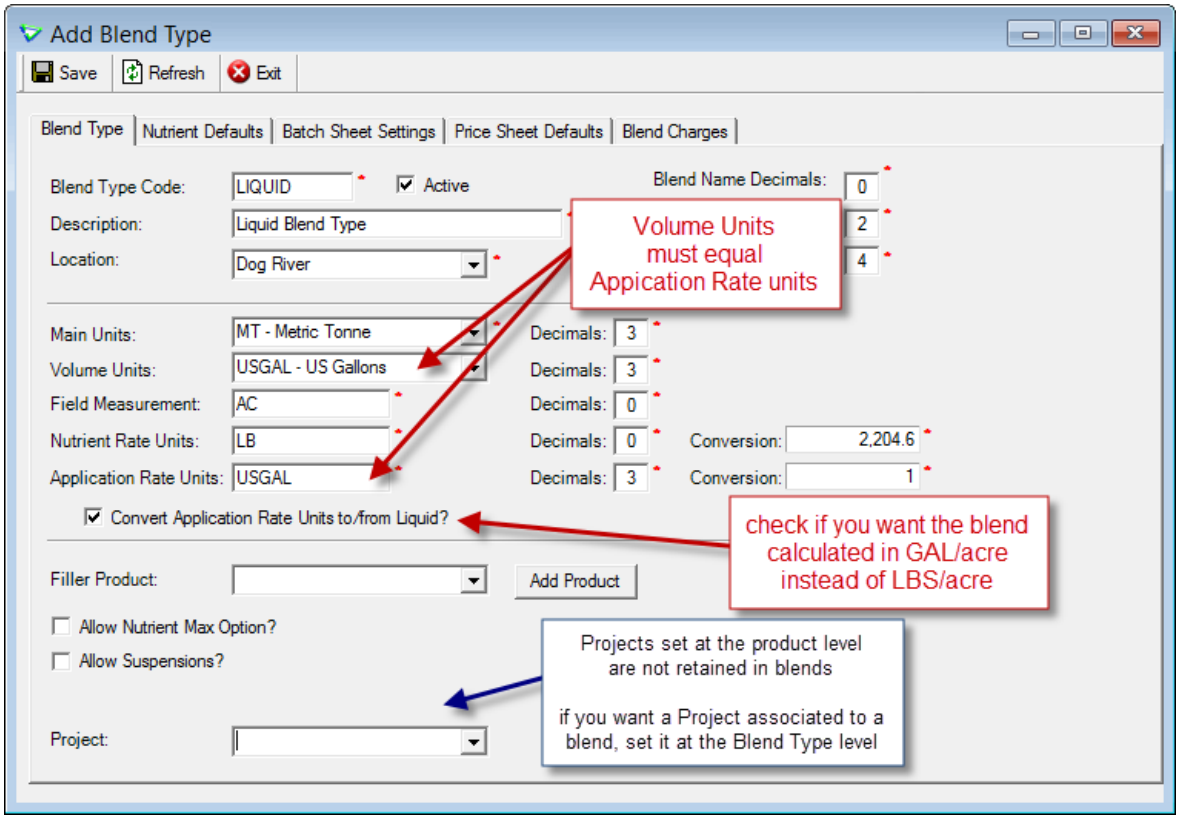
- Fill in the ***Blending tab***.



Setting Up Liquid Blend Types

Blend Type tab

Since blend types are setup usually by location, if you have a liquid blender in more than one location you will likely want to setup a blend type for each one.



Caution ***Volume Units*** and **Convert Broadcast Rate Units to/from Liquid** cannot be changed once the blend type has been used to Make a Blend.

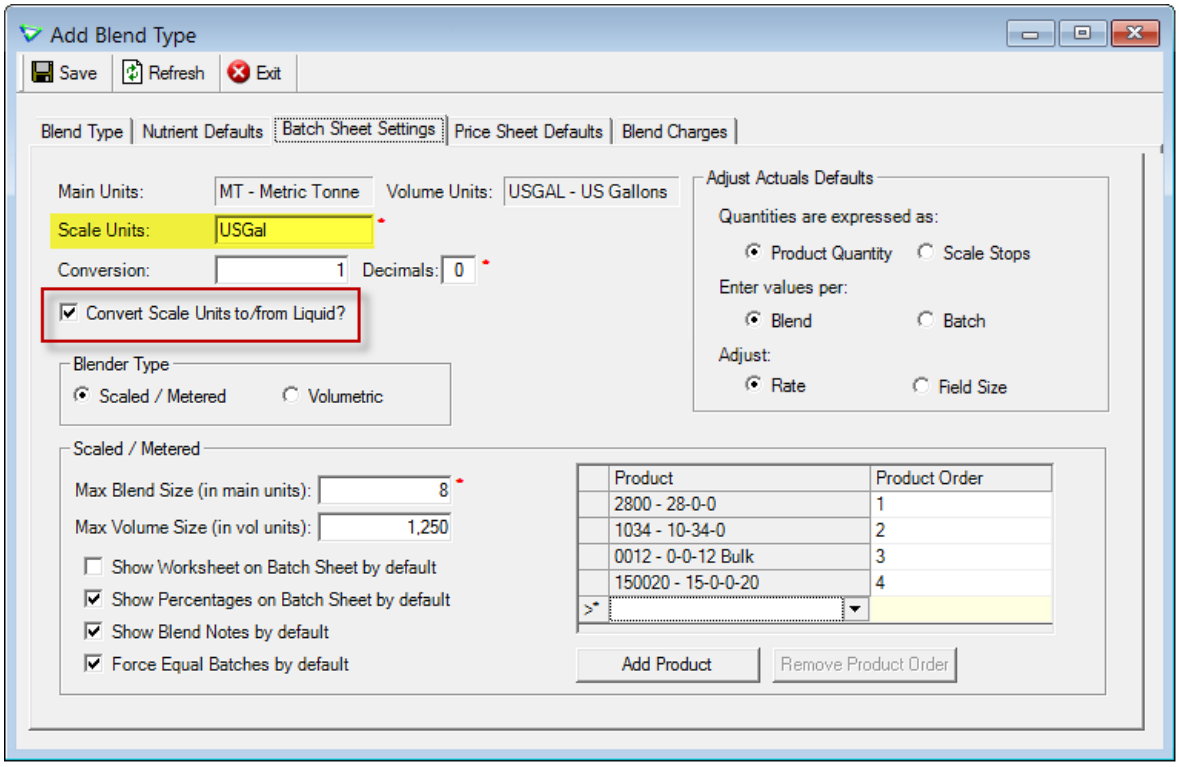
Batch Sheet Settings tab

Show Gallons

> **Note** If you want the batch sheet to show **metric tonnes**, leave the ***Convert Scale Units to/from Liquid?*** checkbox *un*checked - see **page 19** for an example.

On the ***Batch Sheet Settings tab***, specify the ***Scale Units***, ***Conversion factor***, (which is the conversion factor between the Volume Units and the Scale Units) and default ***Products***.

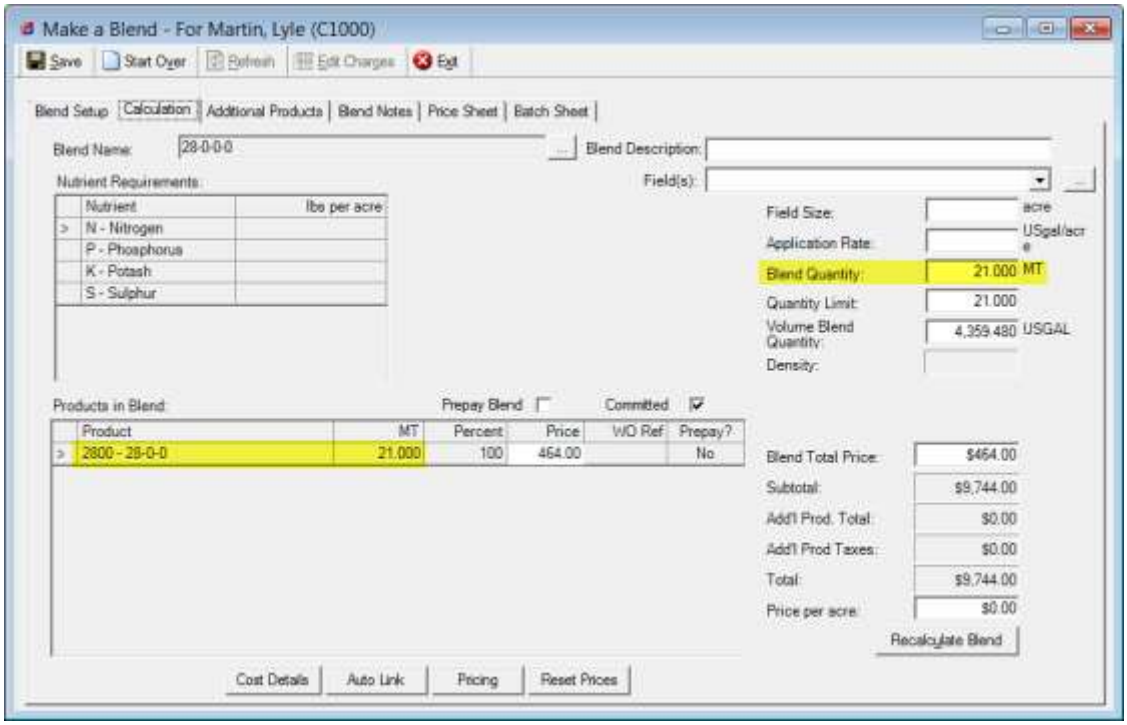
Since you want the batch sheet to show **gallons** instead of metric tonnes, check the ***Convert Scale Units to/from Liquid?*** checkbox.

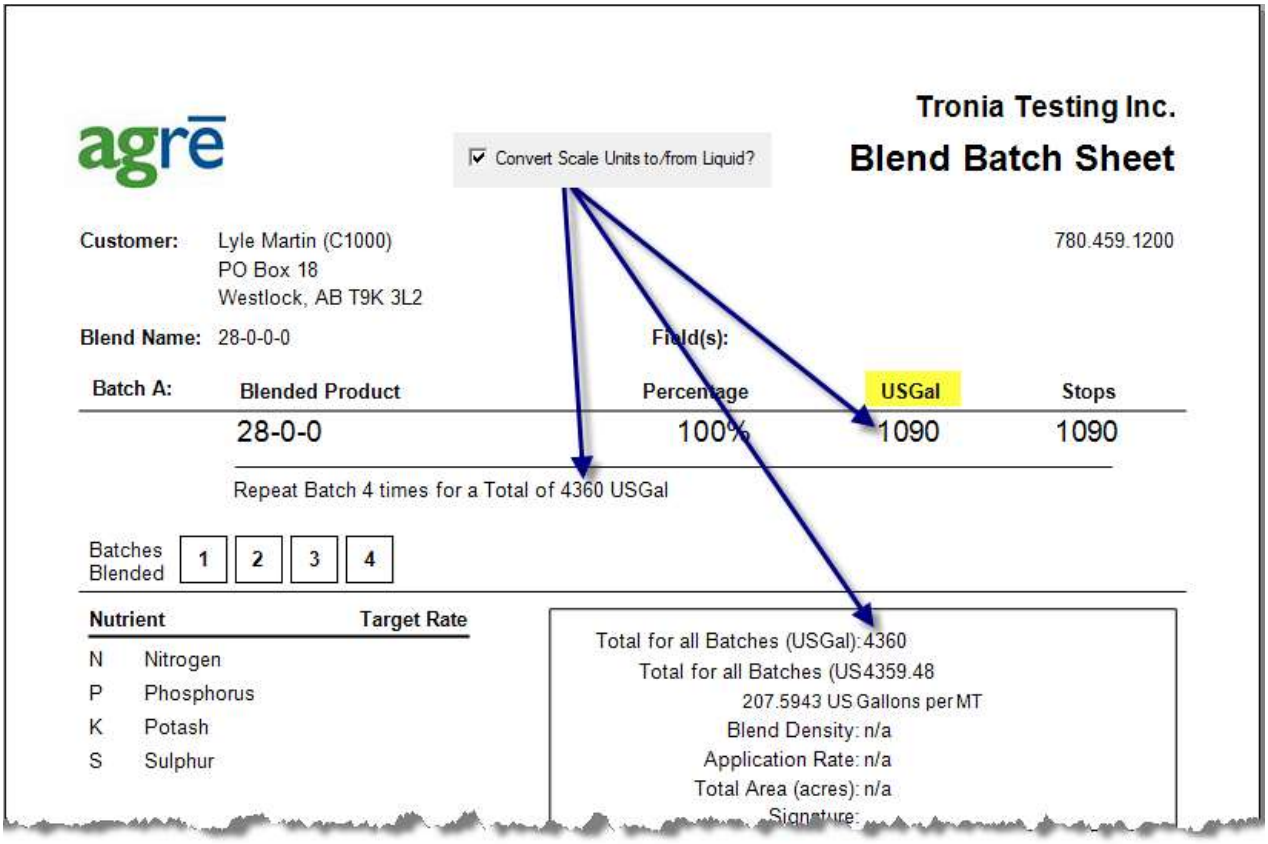


Max Volume Size is the capacity of the blender in volume units (in this case, US gallons).

Sample Batch Sheet – Show Gallons

The following is a sample batch sheet for **21 MT of 2800**, with the ***Convert Scale Units to/from Liquid?*** box checked.



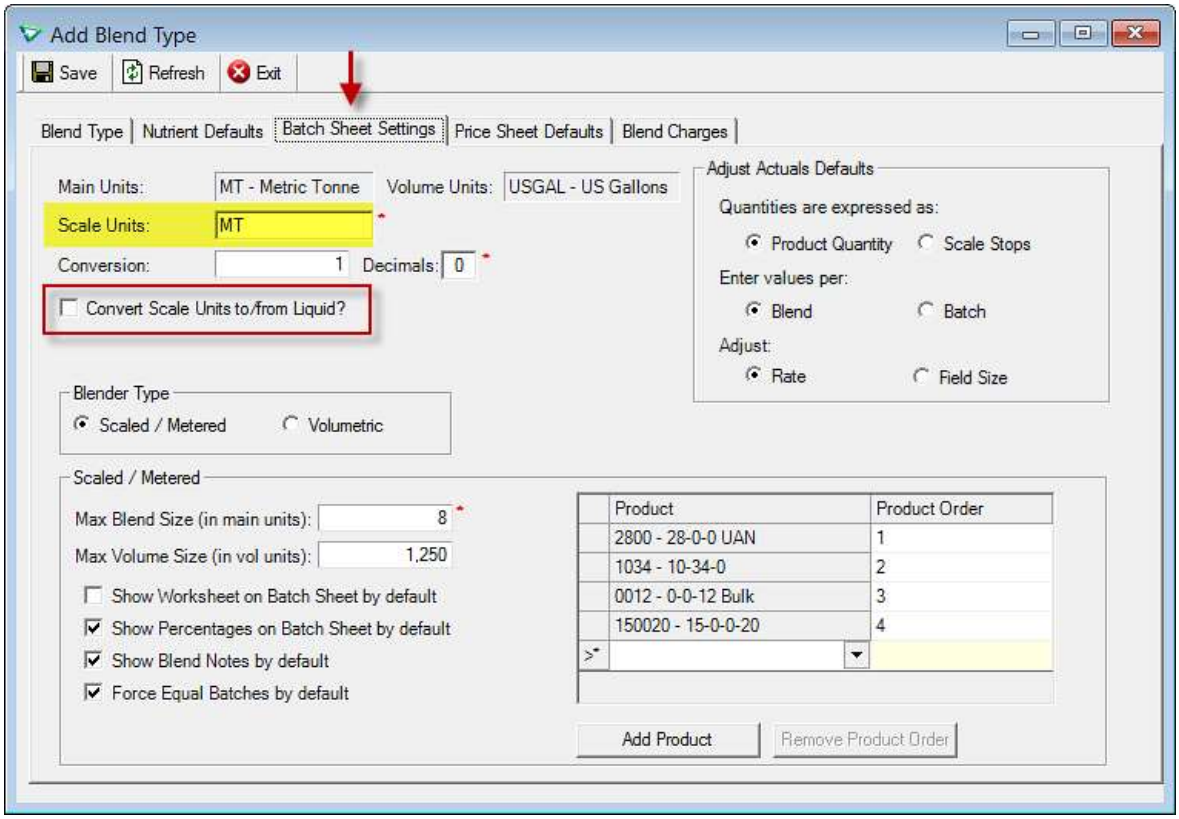


Show Metric Tonnes

Note	If you want the batch sheet to show **gallons** instead of metric tonnes, check the ***Convert Scale Units to/from Liquid?*** checkbox - see **page 17** for an example.

On the ***Batch Sheet Settings tab***, specify the ***Scale Units***, ***Conversion factor***, (which is the conversion factor between the Volume Units and the Scale Units) and default ***Products***.

Since you want the batch sheet to show metric tonnes instead of gallons, leave ***Convert Scale Units to/from Liquid?*** unchecked.



Max Volume Size is the capacity of the blender in volume units (in this case, US gallons).

Sample Batch Sheet – Show Metric Tonnes

The following is a sample batch sheet for **21 MT of 2800**, with the ***Convert Scale Units to/from Liquid?*** box *un*checked.