

Brix Readings for Milk Replacer Solution Standards

The Brix scale originated in the food industry and is primarily a unit of measure corresponding to the percent of sugar in a sugar and water solution. The actual Brix value represents the number of grams of cane sugar in a 100 gm cane sugar solution. The relationship of the Brix reading to a milk replacer solution must be created. Each milk replacer powder is different so a standard curve should be made for each.

Step 1

Make a set of known milk replacer solutions, concentrations of which match points above and below the anticipated milk replacer solutions you will be testing. We usually select 3 or 4 of the concentrations shown in the graphs below, created on a weight/weight basis.

Using ounces as the weight measurement

| Percent solution | Powder weight (oz) | Water weight (oz) | Combined weight of solution (oz) |
|------------------|--------------------|-------------------|----------------------------------|
| 8% | 0.1 | 1.15 | 1.25 |
| 10% | 0.1 | 0.90 | 1.00 |
| 12% | 0.1 | 0.73 | 0.83 |
| 14% | 0.1 | 0.61 | 0.71 |
| 16% | 0.1 | 0.525 | 0.625 |
| 18% | 0.1 | 0.46 | 0.56 |

Using grams as the weight measurement

| Percent solution | Powder weight (gm) | Water weight (gm) | Combined weight of solution (gm) |
|------------------|--------------------|-------------------|----------------------------------|
| 8% | 1.0 | 11.50 | 12.5 |
| 10% | 1.0 | 9.00 | 10.0 |
| 12% | 1.0 | 7.33 | 8.33 |
| 14% | 1.0 | 6.14 | 7.14 |
| 16% | 1.0 | 5.25 | 6.25 |
| 18% | 1.0 | 4.56 | 5.56 |

Step 2

Zero set the instrument so that you add a point at 0.0 Brix for distilled water

Step 3

Create a standard curve with the Brix reading on the X-axis and milk replacer solution concentration on the Y-axis. Remember to add a point at 0.0 Brix for water. Make a trend line, display the formula and then enter your Brix readings from the test samples and solve for Y.