

Alpha Resources, Inc.

Certificate Of Analysis

AR 2027
 BARLEY FLOUR STANDARD
 LOT # 021810

REPORTED DRIED BASIS VALUES

Feed Analysis
 % Crude Fat 2.04 +/- 0.3
 % Crude Fiber 4.3 +/- 0.8
 % Carbon (43.51)
 % Hydrogen (6.00)
 % Nitrogen 1.9 +/- 0.04

AS BOTTLED/RECEIVED VALUES

Ultimate Analysis
 % Carbon (43.51)
 % Hydrogen (6.00)
 % Sulfur 0.12 +/- .02
 % Moisture AOAC 930.15/967.03 6.3 +/- 0.9

AS BOTTLED/RECEIVED VALUES

Mineral Analysis

% Calcium 0.04 +/- 0.01
 % Magnesium 0.13 +/- 0.01
 % Phosphorous 0.38 +/- 0.02

Mineral Analysis

% Potassium 0.44 +/- 0.04
 % Sodium (0.01)
 % Ash AOAC 942.05 (2.2)

PPM Boron

(1)
 PPM Iron 54 +/- 3
 PPM Zinc 27 +/- 2

PPM Copper

25 +/- 2
 PPM Manganese 15 +/- 2
 PPM Aluminum N/A

CALORIE AND AMINO ACID PROFILE (REFERENCE ONLY) AS BOTTLED/RECEIVED

Nitrogen Detergent Fiber (NDF)... 28.0% Acid Detergent Fiber (ADF)... 5.2% Calories/Gram... 4085
 Aspartic Acid... 0.68% Threonine... 0.36% Serine... 0.38% Glutamic Acid... 2.65%
 Glycine... 0.51% Alanine... 0.45% Cystine... 0.28% Valine... 0.58%
 Methionine... 0.2% Isoleucine... 0.41% Leucine... 0.79% Tyrosine... 0.31%
 Phenylalanine... 0.61% Lysine... 0.41% Histidine... 0.28% Tryptophan... 0.12%
 Arginine... 0.52% Methods: AOAC 982.30a, 985.28, 988.15, HPLC, ASTM D2015 (calorie)

The following additional procedures and standards were employed in the analysis of the above standard:

Preparation.....	AOAC 935.13a, 985.01	Nitrogen/Protein.....	AOAC 968.06, 990.03
Crude Fiber.....	AOAC 962.09, AACC 32-10	Crude Fat.....	AOAC 920.39, AACC30-20
Mineral Analysis.....	AOAC 975.03, 968.08-09	NIST SRM.....	1547 Peach Leaves

Remedies for any claimed defect in this product will be limited to product replacement or refund of the purchase price. In no event shall Alpha Resources be liable for incidental or consequential damages.

This is a Certified Reference Material (Working Standard) and is traceable to the above-mentioned NIST standard. For good laboratory practice, we at Alpha Resources Incorporated, recommend that all secondary standards be verified and documented prior to use.

EXPIRATION DATE
THIS CRM IS VALID FOR TWO YEARS FROM THE DATE OF PURCHASE



Certified July 25, 2012

Technical Manager