



WE CRAFT ASSURANCE

SPECTRASTAR XT-R CALIBRATION LIBRARY V9.0

JANUARY 22, 2026

**Did you know?** KPM Analytics now offers NIR Calibration Bundles for certain products. For our current offerings, a part number ("**APPS-BUND-###**") will appear above the product bundle heading on this document. Each calibration listed below that header is included within that bundle. However, you may still purchase individual product calibrations as usual.

Breakfast Cereals (APPS-BUND-015)			
Required Accessories: US-LGOP-0001 Large Open Cup with plunger			
SUBSTANCE	CONSTITUENTS	SAMPLING ACCESSORIES	PART NUMBER
Breakfast Cereals Combo	Moisture, Sugar, Fat, Salt	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-146
Cinnamon Oat Cereal	Moisture	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-160
Colored Fruit Cereal	Moisture, Sugar, Fat, Salt	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-129
Corn Flakes	Moisture, Sugar, Salt	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-107
Nut and Grape Cereal	Moisture, Sugar, Salt	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-130
Nut Nugget Cereal	Moisture, Sugar, Salt	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-131
Cocoa Products (APPS-BUND-006)			
Required Accessories: US-LGOP-0001 Large Open Cup with plunger; US-ISIH-0307 Ring cup; US-LIQK-0003 Liquid Sampling Kit (0.3 mm)			
SUBSTANCE	CONSTITUENTS	SAMPLING ACCESSORIES	PART NUMBER
Chocolate Combo	Moisture, Fat, FFA, Sucrose, Lactose, Dextrose, Total Sugar, Milk Fat	US-ISIH-0307 Ring cup	APPS-CALB-212
Chocolate with Maltitol	Moisture, Fat, FFA, Sucrose, Lactose, Milk_Fat	US-ISIH-0307 Ring cup	APPS-CALB-163
Cocoa Beans	Moisture	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-216
Cocoa Beans Ground	Fat, Moisture, Saturated Fatty Acids, Iodine Value	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-103
Cocoa Butter	Iodine Value (IV), FFA	US-LIQK-0003 Liquid Sampling Kit (0.3 mm)	APPS-CALB-215
Cocoa Cake	Moisture, Fat	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-038
Cocoa Liquor	Fat, Moisture	US-ISIH-0307 Ring cup	APPS-CALB-213
Cocoa Nibs	Moisture	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-217
Cocoa Powder	Fat, Moisture	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-214
Dark Chocolate	Moisture, Fat, FFA, Sucrose, Lactose, Milk Fat	US-ISIH-0307 Ring cup	APPS-CALB-033
Milk Chocolate	Moisture, Fat, FFA, Sucrose, Lactose, Milk Fat	US-ISIH-0307 Ring cup	APPS-CALB-034
White Chocolate	Moisture, Fat, FFA, Sucrose, Lactose, Milk Fat	US-ISIH-0307 Ring cup	APPS-CALB-035
Dairy (APPS-BUND-003)			
Required Accessories: US-ISIH-0307 Ring cup or petri dish; US-SRCP-0025A Small Round Cup 25mm; US-LGOP-0001 Large Open Cup with plunger; US-LIQK-0003 Liquid Sampling Kit; US-SRCP-0025 Small Round Cup, 25mm Height; US-SRCP-0025A Small Round Cup 25mm (with 0.2mm and 0.3mm reflectors)			
SUBSTANCE	CONSTITUENTS	SAMPLING ACCESSORIES	PART NUMBER
Butter	Moisture, Fat, Salt, SNF	US-ISIH-0307 Ring cup or petri dish	APPS-CALB-236
Butter Milk Powder	Moisture, Fat, Protein	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-029
Cheddar Cheese	Solids, Fat, Salt, pH	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-237
Cheese Mix Europe	Moisture, Fat, Protein, Total Solids, Salt, Acidity, pH	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-037
Cheese Powder	Moisture, Fat	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-070
Cottage Cheese	Moisture, Fat, Protein, Acidity	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-045
Cream	Fat	US-SRCP-0025A Small Round Cup 25mm (and 0.3mm reflector)	APPS-CALB-072
Dairy Powders	Moisture, Protein, Fat, FFA, Ash, Lactose	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-069
Greek Yogurt	Protein, Fat, Total Solids	US-ISIH-0307 Ring cup or US-SRCP-0025A Small Round Cup 25mm	APPS-CALB-077
Ice Cream Mix	Solids, Fat	US-SRCP-0025 Small Round Cup, 25mm Height	APPS-CALB-235
Infant Formula Powder	Moisture, Protein, Fat	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-238
Liquid Milk	Fat, Protein, Carbohydrates, Lactose, Total Solids	US-SRCP-0025A Small Round Cup 25mm (and 0.2mm reflector)	APPS-CALB-060

Mayonnaise	Moisture, Fat, pH, Salt, Acidity	US-ISIH-0307 Ring cup	APPS-CALB-062
Milk Protein Concentrate (MPC)	Moisture, Fat, Protein, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-234
Mozzarella Cheese	Dry Matter, Fat, Protein, Salt	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-248
Processed Cheese	Moisture, Fat, Salt, pH	US-ISIH-0307 Ring cup	APPS-CALB-239
Quark	Moisture, Fat, Protein, Acidity	US-ISIH-0307 Ring cup	APPS-CALB-121
Skim Milk Chocolate	Fat	US-SRCP-0025A Small Round Cup 25mm (and 0.2mm reflector)	APPS-CALB-118
Skim Milk Powder	Moisture, Protein, Fat, Lactose	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-232
Sweet Whey	Moisture, Protein, Fat	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-149
Sweetened Condensed Milk	Fat, Solids, Sucrose, Protein	US-SRCP-0025A Small Round Cup 25mm (and 0.2mm reflector)	APPS-CALB-040
Various Cheeses	Moisture, Fat, pH, Salt, Protein	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-006
Whey Concentrate Liquid	Total Solids, Protein	US-SRCP-0025A Small Round Cup 25mm (and 0.2mm reflector)	APPS-CALB-240
Whey Liquid	Fat, True Protein, Total Protein, Lactose, Total Solids	US-LIQK-0003 Liquid Sampling Kit	APPS-CALB-210
Whey Powder	Moisture, Protein, Fat, Lactose, Ash, NaCl, Acidity	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-211
Whole Milk Powder	Moisture, Protein, Fat, Lactose, Acidity, Ash, Centrifugal Sedimentation Rate	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-233
WPC Powder	Moisture, Fat, Protein, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-012
<b>Feed (APPS-BUND-001)</b>			
Required Accessories: US-LGOP-0001 Large Open Cup with plunger			
SUBSTANCE	CONSTITUENTS	SAMPLING ACCESSORIES	PART NUMBER
Cow and Cattle Feed	Moisture, Protein, Oil, Fiber, Starch, Ash, ADF, NDF, ADL, Ca, P, NaCl	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-023
Duck Feed	Moisture, Protein, Fat, Sugar, Starch, Energy (MJ/kg), Lysine, Methionine, Cysteine, Calcium, Phosphorus	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-076
Feed General	Protein, Moisture, Fat, Ash, Fiber, Calcium, Sodium, Phosphorus	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-007
Feed Pellets	Moisture, Oil, Protein	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-052
Finished Feed	Moisture, Protein, Fat, Fiber, Ash, Acid Insoluble Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-053
Fish Feed	Protein, Fat, Moisture, Ash, Fiber	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-024
Horse Feed	Moisture, Protein, Fat, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-058
Mixed Feeds	Protein, Fiber, Fat, Moisture, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-084
Pig and Swine Feed	Moisture, Protein, Fat, Fiber, Lysine, Ash, Ca, P, NaCl, Cu, Zn	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-087
Poultry Feed Combo	Moisture, Protein, Fat, Fiber, Sugar, Starch, ME[MJ/KG], Ash, Ca, P, NaCl, Lysine, Methionine, Cysteine	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-137
Rabbit Feed	Moisture, Protein, Fat, Fiber	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-191
Salmon Feed Pellets	Fat, Moisture, Protein, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-106
<b>Feed Ingredients (APPS-BUND-002)</b>			
Required Accessories: US-LGOP-0001 Large Open Cup with plunger			
SUBSTANCE	CONSTITUENTS	SAMPLING ACCESSORIES	PART NUMBER
Bakery Byproduct	Moisture, Protein, Fat, Fiber, Ash, Salt	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-229
Canola Cake	Moisture, Fat, Protein, Fiber	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-030
Canola Flakes	Oil	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-009
Canola Meal	Moisture, Protein, Oil, Fiber	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-221
Cassava	Moisture, Protein, Fat, Fiber, Ash, pH, N, Ca, P	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-093
Coconut Meal	Moisture, Protein, Fat, Fiber, Ash, Silicate	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-039
Concentrates	Moisture, Protein, Fat, Fiber, Ash, Ca, P	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-127
Corn Bran	Protein, Fat, Moisture, Ash, Fiber, Guanidinoacetic Acid (GAA)	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-171
Corn Cake	Moisture, Protein, Fat, Fiber, Ash, GAA	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-175

Corn Germ	Moisture, Oil, Protein, Starch	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-224
Corn Germ Cake	Moisture, Oil DM	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-089
Corn Gluten Feed	Moisture, Protein, Starch, Oil Fiber	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-010
Corn Gluten Meal	Moisture, Protein, Fat, Fiber, Starch, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-185
Corn Grits	Moisture, Protein, Fat, Fiber, Ash, %Extract As Is, %Extract Dry, Gelatinization	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-126
Corn Meal	Moisture, Oil, Protein, Fiber, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-225
Corn Spent Flake	Oil	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-044
Cotton Seed Flour	Moisture, Oil, Protein	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-046
Cotton Seed Meal	Moisture, Oil, Protein	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-047
Cotton Seed Protein	Moisture, Protein, Fat, Ash, Fiber, Gossipol	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-177
Cotton Seed Spent Flake	Moisture, Oil	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-048
Dried Distillers Grains (DDGS)	Moisture, Protein, Fat, Fiber, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-227
Flax Cake	Moisture, Protein, Fat Fiber, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-104
Grain Husk	Moisture, Protein, Fat, Fiber	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-138
Lupin	Protein, Alkaloids	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-164
Lysine	Moisture, Lysine	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-199
Maize Composites	Moisture, Protein, Oil, Starch	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-166
Oilseed Meal Mix	Moisture, Protein, Oil, Fiber	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-180
Rice Husk	Moisture, Protein, Fat, Fiber, Ash, Acid Value	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-179
Soy Flour	Protein, Fiber, Ash, Protein Dispersibility Index (PDI), Dry Matter	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-110
Soy Grits	Protein, Moisture	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-155
Soy Hulls	Protein, Fat, Ash, CF, DM	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-117
Soy Protein Concentrate	Moisture, Protein	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-154
Soy White Flakes	Oil	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-152
Soybean Cake	Moisture, Protein, Fat, Fiber, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-091
Soybean Meal Expanded	Moisture, Protein, Fat, Fiber, ADF, NDF, Ash, Ca, P, Cl, Cu, Zn, Na, Fe, Urease Activity, EFOS, KOHPD	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-193
Soybean Meal Full Fat	Moisture, Protein, Fat, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-194
Sunflower Cake	Moisture, Protein, Fat	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-124
Sunflower Meal	Protein, Fiber, Fat, Moisture	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-123

Flour (APPS-BUND-007)			
Required Accessories: US-LGOP-0001 Large Open Cup with plunger			
SUBSTANCE	CONSTITUENTS	SAMPLING ACCESSORIES	PART NUMBER
Corn Flour	Moisture, Protein, Oil, Ash, Fiber	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-223
Hard Wheat Flour	Moisture, Protein14M, Ash14M, Protein, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-013
Oat Flour	Moisture, Protein, Fat, Fiber, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-116
Rye Flour	Moisture, Ash, Protein	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-073
Soft Wheat Flour	Moisture, Protein14M, Ash14M, Protein, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-014
Spelt Flour	Ash, Moisture, Protein, Sedimentation, Water Absorption	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-142
Wheat Flour Clear	Moisture, Ash, Protein, Protein14M, Ash14M	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-011
Wheat Flour High-Protein	Protein, Ash, Moisture	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-140
Wheat Midds	Moisture, Protein, Fat, Fiber, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-218
Whole Wheat Flour	Protein, Ash, Proten	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-074
Yellow Corn Flour	Moisture, Fat, Protein, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-027

Food Additives (APPS-BUND-011)			
Required Accessories: US-LGOP-0001 Large Open Cup with plunger; US-ISIH-0307 Ring cup; US-SRCP-0025A Small Round Cup 25mm (with 0.2mm reflector and 0.3mm reflector)			
SUBSTANCE	CONSTITUENTS	SAMPLING ACCESSORIES	PART NUMBER
Avocado	DM	N/A	APPS-CALB-020
Banana Shreds Dry	Moisture	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-170
Caraway Seeds	Essential Oils Total, Limonene, Carvone	US-ISIH-0307 Ring cup	APPS-CALB-159
Chickpea	Moisture, Oil	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-176
Corn Starch Dry	Moisture, Protein, Starch, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-226
Cotton Seed Oil	FFA	US-SRCP-0025A Small Round Cup 25mm (and 0.3mm reflector)	APPS-CALB-018
Dextrose	Moisture, %Dextrose, D.E. (Dextrose Equivalent)	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-172
Egg Liquid	Total Nitrogen, Fat, Dry Matter	US-SRCP-0025A Small Round Cup 25mm (and 0.2mm reflector)	APPS-CALB-080
Egg Powder	Dry Matter, Protein, Fat, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-228
Fermipan (Instant Yeast)	Moisture, Bulk Volume/100mL	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-094
Gelatin	Moisture	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-092
Gluten	Protein, Moisture, Oil, Starch	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-105
Green Coffee	Moisture, Color	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-005
Green Malt	Moisture, Soluble Protein	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-109
Hazelnut Unground	Moisture, Oil, Protein	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-202
Lentil	Moisture, Protein, Fat, Starch, Ash, ADF, NDF	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-165
Liquid Starch	Protein, Solids	US-SRCP-0025A Small Round Cup 25mm (and 0.2mm reflector)	APPS-CALB-065
Mustard Bran	Moisture, Protein, Oil, Volatile Oil, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-141
Mustard Flour	Moisture, Protein, Oil, Ash, Volatile Oil	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-209
Oat Groats	Moisture, Fat, Protein	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-057
Pea Flour	Moisture, Protein (AS-IS), Protein (db)	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-086
Peanut Flour	Fat, Moisture	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-087
Potato Flakes	Reducing Sugar, Moisture	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-088
Potatoes Raw	Moisture	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-242
Raisins	Moisture, Glycerin, Oil	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-145
Rosehip Seed Meal	Crude Fat, Moisture	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-120
Shortening	IV, TAV, SAV, SFC10, SFC20, SFC25	US-SRCP-0025A Small Round Cup 25mm (and 0.3mm reflector)	APPS-CALB-119
Starch	Protein, Moisture	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-111
Sugar	Moisture, Color	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-112
Vinegar	Grains, Alcohol, Total_Con	US-SRCP-0025A Small Round Cup 25mm (and 0.2mm reflector)	APPS-CALB-148
Wheat Gluten	Protein	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-150
Yeast	Moisture, Fat, Protein, Ash, Fiber	US-ISIH-0307 Ring cup	APPS-CALB-028
Forage (APPS-BUND-004)			
Required Accessories: US-LGOP-0001 Large Open Cup with plunger			
SUBSTANCE	CONSTITUENTS	SAMPLING ACCESSORIES	PART NUMBER
Alfalfa Hay	Moisture, Protein, Fat, Starch, Ash, ADF, NDF, DNDF48, DP, ADP, WSC ESC, Lignin, P, Ca, K, Mg	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-219
Corn Cob Mix CCM	Dry Matter, Protein, Fiber, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-051
Corn Silage	Dry Matter, Protein, Ash, Fat, Starch, Sugar, Fiber, ADF, ADFom, NDF, NDFom, Enzyme Soluble Organic Matter, Ca, P, K, Mg	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-043
Grain Silage	Moisture, ADF, NDF, Protein, Ash, Fat, Starch, Ca, P, Mg, K	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-025

Grass Hay Expanded	Moisture, Protein, Fat, Fiber, Sugar, Starch, Ash, ADF, ADFom, NDF, NDFom, Mg, K, Ca, P, WSC, ESC, Gas Production, Enzyme Soluble Organic Matter, Vitamine A, Vitamine B1, Vitamine B3, Vitamine C	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-192
Grass Silage	Dry Matter, Protein, Soluble Protein, Ash, ADF, NDF, Lignine	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-056
Green Maize	Dry Matter, Protein, Ash, Fat, Starch, Sugar, Fiber, ADFom, NDFom, Enzyme Soluble Organic Matter	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-063
Haylage	Protein, Fiber, Fat, Ash, Ca, P, Moisture, Sugar, pH	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-059
Legumes	DM, Protein, Fat, Fiber, Sugar, Ash, ADFom, NDFom, Gas Production, Enzyme Soluble Organic Matter	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-144
Mixed Hay	Moisture, Protein, Fat, Ash, Lignin, ADF, NDF, DNDF48, ADP, DP, Ca, P, K, Mg	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-220
Plant Mix Dry	Dry Matter, Protein, Fiber, Fat, Sugar, Starch, Ash, ADF, NDF, ADL, Enzyme Soluble Organic Matter, Enzyme Insoluble Organic Matter, Gas Production, oNDF, oADF, C, Ca, K, Mg, N, P, C/N	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-134
Total Mixed Ration TMR	Moisture, Protein, Fat, Ash, Fiber, Starch, Sugar, ADF, ADFom, NDF, aNDFom, Lignin, Invitro_Dig, Ca, P, Mg, K, Na, S, Cl, ADL	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-041
Wet Forage	Moisture, Protein, Starch, NDF, iNDF, Ash, Propionic Acid, Butyric Acid, Acetic Acid, Formic Acid, Ethanol, pH, NH4-N	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-198

Grains (APPS-BUND-005)			
Required Accessories: US-LGOP-0001 Large Open Cup with plunger			
SUBSTANCE	CONSTITUENTS	SAMPLING ACCESSORIES	PART NUMBER
Barley Ground	Moisture, Protein, Fat, Fiber, Starch, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-184
Barley Whole Seed	Protein, Moisture, Starch, Fat, Ash, Fiber, Ca, P, Hoodness, Extract, Beta Glucan, Pentosan, IDF, SDF, TDF, NDF	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-174
Bran Combo	Protein, Moisture, Starch, Fat, Fiber, Ash, Ca, P	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-100
Corn Seeds Expanded	Moisture, Protein, Fat, Fiber, Starch, Sugar, NDF, ADF, Ash, EFOS	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-182
Ground Corn	Moisture, Protein, Fat, Fiber, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-042
Ground Wheat	Moisture, Protein, Fat, Fiber, Ash, Gluten, Vitreousity, Ca, P	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-151
Malted Barley	MaltMoisture, MaltProtein, WortProtein, FAN, Beta Glucan, Alpha Amylase, Diastatic Power	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-015
Rice Bran	Moisture, Protein, Fat, Fiber, Ash, Ca, P, DM	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-114
Rice Combo	Moisture, Protein, Amylose	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-075
Rye Whole Seed	Moisture, Protein, Fat, Fiber, Ash, Calcium, Phosphorus	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-183
Sorghum	Protein, Ash, Moisture, Starch, Total_Extractives, Water_Extractives, Ethanol_Extractives	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-156
Triticale Whole Seed	Moisture, Protein, Fat, Fiber, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-026
Wheat Bran	Moisture, Protein, Fat, Fiber, Starch % OM, Starch % DM, Ash, Ca, P	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-068
Wheat Semolina	Moisture, Ash, Protein	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-143
Wheat Whole Seed	Moisture, Protein, Ash, Gluten, Fat, Fiber, Ca, P, Vitreousity	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-066
Whole Grains Combo	Moisture, Protein, Gluten, Fat, Starch, Ash, Density, Beta Glucan (Dry Basis)	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-128
Whole Oats	Moisture, Protein, Oil, Beta Glucan	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-231
Whole Peas	Moisture, Protein	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-230
Wild Rye	DM, Protein, ADF, NDF, DDM, DMI, RFV	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-147

Meat & Seafood (APPS-BUND-013)			
Required Accessories: US-LGOP-0001 Large Open Cup with plunger; US-ISIH-307 Ring Cup			
SUBSTANCE	CONSTITUENTS	SAMPLING ACCESSORIES	PART NUMBER
Beef	Moisture, Protein, Fat, Ash, Collagen	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-031
Chicken By-Product	Moisture, Fat	US-ISIH-0307 Ring cup	APPS-CALB-158
Lamb Meat	Water, Protein, Fat	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-099
Mechanically Separated Chicken Meat	Moisture, Protein, Fat	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-083



Pork Beef Rind Raw	Dry Matter, Protein, Fat, Collagen	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-122
Pork Meat	Moisture, Fat, Protein	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-136
Raw meat blend	Moisture, Protein, Fat, Ash, Collagen	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-241
Salami	Moisture, Water Activity	US-ISIH-0307 Ring cup	APPS-CALB-178
Salmon Meat	Moisture, Fat	US-ISIH-0307 Ring cup	APPS-CALB-157
Sausages and Ham	Moisture, Protein, Fat, Ash, Sodium, Carbohydrates, Hydroxiprolin, Collagen, Collagen-free Protein	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-200
Silver Carp Surimi	Moisture	US-ISIH-0307 Ring cup	APPS-CALB-197
Neonatal			
SUBSTANCE	CONSTITUENTS	SAMPLING ACCESSORIES	PART NUMBER
Neonatal Milk	Protein, Fat, Lactose, Carbohydrates	US-LIQK-0003 Liquid Sampling Kit	APPS-CALB-203
Oil Seeds (APPS-BUND-008)			
Required Accessories: US-LGOP-0001 Large Open Cup with plunger			
SUBSTANCE	CONSTITUENTS	SAMPLING ACCESSORIES	PART NUMBER
Canola Seeds	Moisture, Protein, Oil, FFA, IV, Oleic Acid, Linoleic Acid, Erucic Acid, Glucosinolates, Chlorofyll, Total Saturates, Waste	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-222
Flax Seeds Unground	Moisture, Oil, Protein, C16:0, C18:0, C18:1, C18:2, C18:3, SATs, IV	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-054
Ground Soybeans	Moisture, Protein, Fat, Fiber, Ash, Palmitic, Stearic, Oleic, Linoleic, Linolenic	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-207
Mustard Seeds Unground	Moisture, Protein, Oil, Palmitic, Stearic, Oleic, Linoleic, Linolenic, Erucic, SATS	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-208
Sesame Seeds	Moisture, Protein, Fat, Fiber, C160, C161, C180, C181, C182, C183, C200, C220	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-079
Shea Kernels	Moisture, Fat, FFA	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-078
Soybeans with AA	Protein, Oil, Moisture, Ala, Arg, Asp, Cys, Glu, Gly, His, Ile, Leu, Lys, Met, Phe, Pro, Ser, Thr, Trp, Tyr, Val	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-008
Sunflower Seeds - Ground	Moisture, Protein As-Is, Oil DM, FFA, C16:0, C18:0, C18:1, C18:2	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-016
Sunflower Seeds - Unground	Moisture, Protein As-Is, Oil DM, FFA, C16:0, C18:0, C18:1, C18:2	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-071
Sunflower Seeds De-hulled	Oleic, Linoleic, Palmitic, Stearic	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-125
Olives (APPS-BUND-014)			
Required Accessories: US-LGOP-0001 Large Open Cup with plunger; US-SRCP-0025A Small Round Cup 25mm (and 0.3mm reflector)			
SUBSTANCE	CONSTITUENTS	SAMPLING ACCESSORIES	PART NUMBER
Olives Crushed	Moisture, Oil, Palmitic, Palmitoleic, Stearic, Oleic, Linoleic, Linolenic, Arachidic, Gadoleic, Behenic, Lignoceric	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-003
Olive Oil	FFA, PV, K232, K270, DK, Polyphenol, Bitterness, Moisture, IND, Acidity, Stearic, Palmitoleic, Heptadecenoic, Heptadecanoic, Oleic, Palmitic, Linolenic, Linoleic, Arachidic, Eicosenoic, TotalSterols	US-SRCP-0025A Small Round Cup 25mm (and 0.3mm reflector)	APPS-CALB-002
Olive Pomace	Moisture, Fat	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-004
Others			
SUBSTANCE	CONSTITUENTS	SAMPLING ACCESSORIES	PART NUMBER
Dried Marijuana	Moisture, THC, CBD, CBN, THCa, CBDa, CBG	US-ISIH-0307 Ring cup	APPS-CALB-021
Fertilizer	%N, %NH4, %NO3, %H2O, %P2O5, %K2O	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-090
Mushroom Compost	Moisture, pH, NH4, Ntot, NH4 as is, Ntot as is	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-098
Poppy Capsules	% Morphine, % Moisture	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-135
Soil	pH H2O, pH Salt, P2O5 Chir, K2O Chir, P2O5 Mach, K2O Mach, N, Humus, Ca, Mg, S	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-187
Tobacco	Moisture, Nicotine, Total Sugar, Reducing Sugar, Nornicotine, Anabasine, Anatabine, Total Alkaloids	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-036
Pet Food			
SUBSTANCE	CONSTITUENTS	SAMPLING ACCESSORIES	PART NUMBER
Petfood Dry	Moisture, Protein, Fat, Fiber, Ash, Calories	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-139

Petfood Semi-Moist	Moisture, Protein, Fat, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-133
Petfood Wet	Moisture, Protein, Fat, Ash, Fiber	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-173
<b>Processed Food (APPS-BUND-012)</b> <b>Required Accessories:</b> US-LGOP-0001 Large Open Cup with plunger; US-ISIH-0307 Ring cup; US-SRCP-0025A Small Round Cup 25mm (with 0.2mm and 0.3mm reflector)			
SUBSTANCE	CONSTITUENTS	SAMPLING ACCESSORIES	PART NUMBER
Caramel	Fat, Solids	US-ISIH-0307 Ring cup	APPS-CALB-032
Coffee	Moisture, Caffeine, pH, L-Value, 5-CQA, Trigonelline, Density	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-169
Corn Seeds for Popcorn	Moisture, Protein, Fat, Ash, Fiber	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-201
Custard Powder	Fat	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-064
Foods Powders	Moisture, Fat	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-055
Frozen French Fries	Moisture, Fat, Solids	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-243
Instant Noodles	Moisture, Fat, Acid Value, Peroxide Value, Salt, Iodine Visibility	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-168
Ketchup	Moisture, Dry Matter, Salt, Acidity, pH, Density	US-ISIH-0307 Ring cup	APPS-CALB-167
Margarine	Fat, Salt, pH	US-ISIH-0307 Ring cup	APPS-CALB-061
Pasta	Moisture, Protein, Fat, Ash	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-067
Peanut Butter	Fat, Salt, Color	US-ISIH-0307 Ring cup	APPS-CALB-001
Potatoes Parfried	Moisture, Fat, Sugar	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-162
Soy Sauce	Brix, Total Nitrogen, NaCl, Ethanol	US-SRCP-0025A Small Round Cup 25mm (and 0.2mm reflector)	APPS-CALB-095
Sunflower Oil	Moisture, Oleic Acid, FFA, IV, AV, Phosphorus ppm, Phosphorus %Stearic, PV, Impurities	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-186
Sweet Chili Sauce	Acid, Salt, Brix, pH	US-SRCP-0025A Small Round Cup 25mm (and 0.2mm reflector)	APPS-CALB-196
Tomato Paste	DM, pH, Blotter, Bostwick Viscosity, Inclusions, a, a/b, b, L, Lycopene, Titratable Acids, Chlorides, Nitrates, Mineral Impurities	US-SRCP-0025A Small Round Cup 25mm (and 0.3mm reflector)	APPS-CALB-097
Tomato Powder	AW, Moisture, pH, Bostwick Viscosity, a, a/b, b, L, Lycopene, Titratable Acids, Chlorides	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-096
Waffle Cut Fries	Moisture, Fat, Sugar	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-153
<b>Raw Materials</b>			
SUBSTANCE	CONSTITUENTS	SAMPLING ACCESSORIES	PART NUMBER
Elder Seeds	Moisture, Protein, Fat, Ash, Fiber	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-101
Elder Seeds Cake	Moisture, Protein, Fat, Ash, Fiber	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-102
<b>Rendering (APPS-BUND-009)</b> <b>Required Accessories:</b> US-LGOP-0001 Large Open Cup with plunger			
SUBSTANCE	CONSTITUENTS	SAMPLING ACCESSORIES	PART NUMBER
Animal Proteins	Moisture, Protein, Fat, Ash, Digestibility, Ca	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-049
Blood Meal	Moisture, Protein, Fat, Ash, Digestibility, Soluble Protein, Acid Value, Ca, Salt	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-205
Chicken Viscera Meal	Moisture, Protein, Fat, Ash, Digestibility	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-050
Feather Meal	Moisture, Protein, Fat, Ash, Digestibility, Ca, Soluble Protein, P	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-113
Fish Meal	Moisture, Protein, Fat, Ash, Salt, Soluble Solids, Acid Value, Digest, TVN, AW, VBN, Ca, P, N, NH3-N, Ethoxyquin	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-204
Lamb Meal	Protein, Fat, Ash, DM	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-115
Meat and Bone Meal Expanded	Moisture, Protein, Fat, Fiber, Ash, Acid Value, Soluble Protein, Salt, Ca, P, Boisen Digestibility, Pepsin Digestibility	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-195
Pork Meal	Moisture, Protein, Fat, Fiber, Ash, Ca, P	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-206
Poultry Meal Expanded	Moisture, Protein, Fat, Ash, Fiber, Ca, P, Mg	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-181

Snack Food (APPS-BUND-010)			
Required Accessories: US-LGOP-0001 Large Open Cup with plunger			
SUBSTANCE	CONSTITUENTS	SAMPLING ACCESSORIES	PART NUMBER
Chicken Tenders	Seasoning	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-190
Cookies	Moisture, Fat, Sugar	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-246
Crackers	Fat, Moisture	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-019
Onion Rings	Seasoning	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-189
Pita Chips	Moisture, Fat	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-244
Popcorn Ground	Moisture, Oil, Salt	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-132
Pork Rinds	Seasoning, Oil	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-188
Potato Chips	Moisture, Oil, Seasoning, FFA	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-161
Raw Peanuts	Moisture, Fat, FFA, PV	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-017
Seasoning	Seasoning	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-022
Tortilla Chips	Moisture, Oil	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-245
Sugar Processing			
SUBSTANCE	CONSTITUENTS	SAMPLING ACCESSORIES	PART NUMBER
Dried Sugar Beet Pulp	Moisture, Protein, Ash, Fat, Fiber, Calcium, Phosphorus	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-108
Molasses	Brix, Sucrose	US-SRCP-0025A Small Round Cup 25mm (and 0.2mm reflector)	APPS-CALB-081
Sugar Beet Shavings	POL, RDS, Sugar, Sucrose, RWST	US-LGOP-0001 Large Open Cup with plunger	APPS-CALB-247
Sugar Cane Juice	Brix, Sucrose	US-SRCP-0025A Small Round Cup 25mm (and 0.2mm reflector)	APPS-CALB-082



## GLOSSARY

CONSTITUENTS	DEFINITION
Acid Detergent Fiber (ADF)	The fibrous component represents the least digestible fiber portion of forage or other roughage
Acid Detergent Protein (ADP)	The insoluble protein fraction
Acidity	The level of acid in substances such as water, soil, or wine
Alanine (ALA)	Amino Acid
Alpha Amylase	Enzyme that catalyze the hydrolysis of the internal $\alpha$ -1,4-glycosidic linkages in starch
Alveo P	Maximum pressure required for the deformation of the sample or overpressure
Alveo W	Indicates dough baking strength
Arachidic	Fatty Acid
Arginine (ARG)	Amino Acid
Ash	The residue containing inorganic mineral elements of a feed sample
Aspartic	Amino Acid
Beta Glucan	One form of soluble dietary fiber that's strongly linked to improving cholesterol levels and boosting heart health
Calcium (Ca)	Essential mineral
Calories	Calorie is a unit of measurement for energy
Carbohydrates	Biochemical compounds composed only of the elements carbon, hydrogen and oxygen, and are the main source of energy for animals
Color B	Yellow to Blue color axis
Cysteine (CYS)	Amino Acid
Dev Time	Classification for water absorption in flour
Diastatic Power	A measurement of a malted grain's enzymatic content
Digestibility	Measure of nutrition a food provides in a given volume. It indicates how much of the food is absorbed by the gut into the blood-stream
Digestible Protein (DP)	Measure of how well the proteins are digested
DK	Index DK is a criterion of discrimination between a bad quality virgin olive oil and a virgin olive oil adulterated with refined olive oil
Dry Matter (DM)	A measurement of a sample with all volatiles removed
Erucic	Fatty Acid
Fat/Oil	The term often refers specifically to triglycerides, that are the main components of vegetable oils and of fatty tissue in animals
Fiber	The insoluble residue of an acid hydrolysis followed by an alkaline one
Free Fatty Acids (FFA)	Are produced by the hydrolysis of oils and fats
Fructose	A common sugar
Glucose	A common sugar
Glutamic (GLU)	Amino Acid
Glycine (GLY)	Amino Acid
Heptadecanoic	Fatty Acid
Histidine (HIS)	Amino Acid
Insoluble Fiber	Refers to all the parts of plant-based foods that cannot be digested or absorbed by the body
Insoluble Fiber	All the parts of plant-based foods that cannot be digested or absorbed by the body
Iodine Value (IV)	Mass of iodine in grams consumed per 100 grams of a chemical substance, often used to determine the amount of unsaturation in fats, oils and waxes
Isoleucine (ILE)	Amino Acid
K232	A delicate indicator of oxidation in oils
K270	Detects the level of adulteration, blends with refined olive oil
Lactose	A large sugar molecule that is made up of two smaller sugar molecules, glucose and galactose
Lenoleic	Fatty Acid
Lenolinic	Fatty Acid

Lignin	A complex organic polymer deposited in the cell walls of many plants, making them rigid and woody
Lysine (LYS)	Amino Acid
Magnesium (Mg)	Essential mineral
Methionine (MET)	Amino Acid
Moisture	Total amount of bound and unbound water contained in a sample
Neutral Detergent Fiber (NDF)	Measures most of the structural components in plant cells (i.e. lignin, hemicellulose and cellulose), but not pectin
Neutral Detergent Fiber Digestibility 48 (dNDF48)	This method mimics rumen digestion. The forage sample is dried, ground and incubated in rumen fluid for 48 hours
Oleic	Fatty Acid
Palmitic	Fatty Acid
Peroxide Value (PV)	Gives the initial evidence of rancidity in unsaturated fats and oils
Phenylalanine (PHE)	Amino Acid
<b>CONSTITUENTS</b>	<b>DEFINITION</b>
Phosphorus (P)	Essential mineral
Polarity (POL)	An approximate measure of the sucrose content of the sugar
Potassium (K)	Essential mineral
Proline (PRO)	Amino Acid
Protein	Organic compounds composed of building blocks called amino acids
pH	Quantitative measure of the acidity or basicity of aqueous or other liquid solutions
Purity	Purity=(pol/rds)*100 Used to determine value of sugar beets to pay farmers
Raffinose	A trisaccharide composed of galactose, glucose, and fructose
RDS	Measurement of total dissolved solids in a sugar liquor
RWST	Recoverable white sucrose per ton
Salt (NaCl)	Mineral Sodium Chloride
Saturated Fat	A saturated fat is a fat or fatty acid in which there are no double bonds between the carbon atoms of the fatty acid chain
Serine (SER)	Amino Acid
Solids	A measurement of the amount of solid substance contained in a liquid sample
Stachyose	A tetrasaccharide consisting of two α-D-galactose units, one α-D-glucose unit, and one β-D-fructose unit sequentially linked as galgalglcfru
Starch	A white, granular, organic chemical that is produced by all green plants
Stearic	Fatty Acid
Sucrose	A common sugar
Sugar	Also called monosaccharides, include glucose, fructose, and galactose
Threonine (THR)	Amino Acid
Tryptophan (TRP)	Amino Acid
Tyrosine (TYR)	Amino Acid
Valine (VAL)	Amino Acid
Water ABS	The amount of water taken up by flour to achieve the desired consistency and create a quality end-product

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