

Eurofins Sample Code: 473-2015-04150160
Sample Description: Composite Sample
Client Sample Code: V5033-1
PO Number:
Client Code: JD0000028

Entry Date: 04/15/2015
Reporting Date: 04/22/2015

Biova
 Attn: Michael DeJong
 3119 Highway 63
 Malcom, IA 50157

CERTIFICATE OF ANALYSIS

AR-15-JD-011980-01

Test	Result	Theoretical Level
QD252 - Protein - Combustion		Completed: 04/20/2015
AOAC 990.03; AOAC 992.15		
* Protein	87.23 %	>=85 %
QD250 - Ash		Completed: 04/20/2015
AOAC 942.05		
* Ash	5.60 %	<=9 %
QD148 - Moisture by Vacuum Oven		Completed: 04/20/2015
AOAC 925.09		
* Moisture and Volatiles - Vacuum Oven	7.1 %	<=9 %
QA00U - Bulk Density		Completed: 04/21/2015
USP 616		
Bulk Density (Loose)	0.300 g/ml	
Bulk Density (Tapped)	0.330 g/ml	
QD251 - Calcium by ICP		Completed: 04/20/2015
AOAC 965.17 / 985.01 mod.		
* Calcium	0.325 %	
QA133 - Arsenic (ICP-MS)		Completed: 04/21/2015
AOAC 986.15 mod.		
Arsenic (As)	<0.02 mg/kg	
QA417 - Lead (ICP-MS)		Completed: 04/21/2015
AOAC 986.15 mod.		
Lead (Pb)	<0.02 mg/kg	
QD610 - Mercury (ICP-MS)		Completed: 04/21/2015
AOAC 986.15 mod.		
Mercury (Hg)	<0.010 mg/kg	
QD172 - pH		Completed: 04/20/2015
EPA 150.1		
pH	6.8	6.5-7.6
QD06E - Elastin by ELISA		Completed: 04/20/2015
Commercial Test Kit		
Elastin by ELISA	23 %	>=20 %
QD06C - Collagen		Completed: 04/20/2015
Commercial Test Kit		
Collagen	25 %	>=20 %

Eurofins Sample Code: 473-2015-04150160
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Test	Result	Theoretical Level
UMABD - Enterobacteriaceae - AOAC 2003.01		Completed: 04/16/2015
AOAC 2003.01 Enterobacteriaceae	< 10 cfu/g (est)	
QQ167 - Water Activity		Completed: 04/20/2015
Instrument instructions Water Activity at 25°C	0.198	<=0.3
K0032 - Total Glycosaminoglycans (Chondroitin Sulfate) CPC		Completed: 04/22/2015
USP Total Glycosaminoglycans	23.4 % (w/w)	>=5 % (w/w)
QA205 - Cadmium (ICP-MS)		Completed: 04/21/2015
AOAC 986.15 mod. Cadmium (Cd)	<0.010 mg/kg	
QA259 - Fluorine		Completed: 04/21/2015
AOAC 975.08 Fluorine (F)	<5.00 mg/kg	
K0144 - Solubility		Completed: 04/22/2015
USP Solubility	Sparsingly soluble	Soluble in water

*The test result is covered by our current A2LA accreditation.

Estimated counts are denoted by (est)

Respectfully Submitted,
 Eurofins Scientific Inc.



Genna Chadderdon

Business Unit Manager

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Biological Testing
 Cert:3329:01



Chemical Testing
 Cert:2927:01

Eurofins Sample Code: 473-2015-04150161
Sample Description: Whirl-Pak bag 1
Client Sample Code: V5033-1
PO Number:
Client Code: JD0000028

Entry Date: 04/15/2015
Reporting Date: 04/21/2015

Biova
 Attn: Michael DeJong
 3119 Highway 63
 Malcom, IA 50157


CERTIFICATE OF ANALYSIS

AR-15-JD-011871-01

Test	Result	Theoretical Level
UMAEK - Salmonella - AOAC 2003.09		Completed: 04/17/2015
AOAC 2003.09		
* Salmonella spp.	Negative per 25 g	Negative /25 g
UMBIP - Confirmation E. coli - BAM Chapter 4		Completed: 04/19/2015
BAM Chapter 4		
* E. coli	< 3 MPN/g	<= 5 mpn/g
UMHBM - Staphylococcus aureus - BAM Chapter 12		Completed: 04/17/2015
BAM Chapter 12		
* Staphylococcus aureus	< 10 cfu/g (est)	<=10 cfu/g
UMHM3 - Aerobic Spore-forming Thermophilic Count - AACC 42-40		Completed: 04/18/2015
AACC Method 42-40		
Aerobic Spore-forming Thermophilic Count	430 cfu/g	<=10 cfu/g
UMJP9 - Aerobic Plate Count - CMMEF Chapter 7-Pour Plate		Completed: 04/17/2015
CMMEF Chapter 7		
* Aerobic Plate Count	820 cfu/g	<=400 cfu/g
UMMJ8 - Confirmation Total Coliforms - BAM Chapter 4		Completed: 04/19/2015
BAM Chapter 4		
* Total Coliforms	< 3 MPN/g	<=10 mpn/g
UMZK7 - Moulds - AACC 42-50		Completed: 04/20/2015
AACC Method 42-50		
* Mold	10 cfu/g (est)	<=100 cfu/g
* Yeast	< 10 cfu/g (est)	<10 cfu/g
* Yeast & Moulds	10 cfu/g (est)	
UMZT1 - Aerobic Spore-forming Mesophilic Count - AACC 42-40-M		Completed: 04/17/2015
AACC Method 42-40-M		
Aerobic Spore-forming Mesophilic Count	< 10 cfu/g (est)	<=25 cfu/g

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Eurofins Sample Code: 473-2015-04150161**Client Sample Code:** V5033-1Respectfully Submitted,
Eurofins Scientific Inc.

Stephan McDanel

Microbiologist

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Biological Testing
Cert:3329:01Chemical Testing
Cert:2927:01

Eurofins Sample Code: 473-2015-04150162
Sample Description: Whirl-Pak bag 2
Client Sample Code: V5033-1
PO Number:
Client Code: JD0000028

Entry Date: 04/15/2015
Reporting Date: 04/23/2015

Biova
 Attn: Michael DeJong
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 Malcom, IA 50157

CERTIFICATE OF ANALYSIS

AR-15-JD-012208-01

Test	Result	Theoretical Level
UMA EK - Salmonella - AOAC 2003.09		Completed: 04/17/2015
AOAC 2003.09		
* Salmonella spp.	Negative per 25 g	Negative /25 g
UMBIP - Confirmation E. coli - BAM Chapter 4		Completed: 04/19/2015
BAM Chapter 4		
* E. coli	< 3 MPN/g	<=10 mpn/g
UMHBM - Staphylococcus aureus - BAM Chapter 12		Completed: 04/17/2015
BAM Chapter 12		
* Staphylococcus aureus	< 10 cfu/g (est)	<=10 cfu/g
UMHM3 - Aerobic Spore-forming Thermophilic Count - AACC 42-40		Completed: 04/18/2015
AACC Method 42-40		
Aerobic Spore-forming Thermophilic Count	460 cfu/g	<=10 cfu/g
UMJP9 - Aerobic Plate Count - CMMEF Chapter 7-Pour Plate		Completed: 04/17/2015
CMMEF Chapter 7		
* Aerobic Plate Count	810 cfu/g	<=400 cfu/g
UMMJ8 - Confirmation Total Coliforms - BAM Chapter 4		Completed: 04/23/2015
BAM Chapter 4		
* Total Coliforms	< 3 MPN/g	<=10 mpn/g
UMZK7 - Moulds - AACC 42-50		Completed: 04/20/2015
AACC Method 42-50		
* Mold	< 10 cfu/g (est)	<=100 cfu/g
* Yeast	< 10 cfu/g (est)	<=10 cfu/g
* Yeast & Moulds	< 10 cfu/g (est)	
UMZT1 - Aerobic Spore-forming Mesophilic Count - AACC 42-40-M		Completed: 04/17/2015
AACC Method 42-40-M		
Aerobic Spore-forming Mesophilic Count	30 cfu/g (est)	<=25 cfu/g

*The test result is covered by our current A2LA accreditation.

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Biological Testing
Cert:3329:01Chemical Testing
Cert:2927:01

Eurofins Sample Code: 473-2015-04150163
Sample Description: Whirl-Pak bag 3
Client Sample Code: V5033-1
PO Number:
Client Code: JD0000028

Entry Date: 04/15/2015
Reporting Date: 04/21/2015

Biova
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CERTIFICATE OF ANALYSIS

AR-15-JD-011872-01

Test	Result	Theoretical Level
UMA EK - Salmonella - AOAC 2003.09		Completed: 04/17/2015
AOAC 2003.09		
* Salmonella spp.	Negative per 25 g	Negative /25 g
UMBIP - Confirmation E. coli - BAM Chapter 4		Completed: 04/19/2015
BAM Chapter 4		
* E. coli	< 3 MPN/g	<=5 mpn/g
UMHBM - Staphylococcus aureus - BAM Chapter 12		Completed: 04/17/2015
BAM Chapter 12		
* Staphylococcus aureus	< 10 cfu/g (est)	<=10 cfu/g
UMHM3 - Aerobic Spore-forming Thermophilic Count - AACC 42-40		Completed: 04/18/2015
AACC Method 42-40		
Aerobic Spore-forming Thermophilic Count	590 cfu/g	<=10 cfu/g
UMJP9 - Aerobic Plate Count - CMMEF Chapter 7-Pour Plate		Completed: 04/17/2015
CMMEF Chapter 7		
* Aerobic Plate Count	1,000 cfu/g	<=400 cfu/g
UMMJ8 - Confirmation Total Coliforms - BAM Chapter 4		Completed: 04/19/2015
BAM Chapter 4		
* Total Coliforms	< 3 MPN/g	<=10 mpn/g
UMZK7 - Moulds - AACC 42-50		Completed: 04/20/2015
AACC Method 42-50		
* Mold	< 10 cfu/g (est)	<=100 cfu/g
* Yeast	< 10 cfu/g (est)	<=10 cfu/g
* Yeast & Moulds	< 10 cfu/g (est)	
UMZT1 - Aerobic Spore-forming Mesophilic Count - AACC 42-40-M		Completed: 04/17/2015
AACC Method 42-40-M		
Aerobic Spore-forming Mesophilic Count	20 cfu/g (est)	<=25 cfu/g

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Eurofins Sample Code: 473-2015-04150163

Client Sample Code: V5033-1

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Microbiologist

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Biological Testing
Cert:3329:01



Chemical Testing
Cert:2927:01

Eurofins Sample Code: 473-2015-04150164
Sample Description: Whirl-Pak bag 4
Client Sample Code: V5033-1
PO Number:
Client Code: JD0000028

Entry Date: 04/15/2015
Reporting Date: 04/21/2015

Biova
 Attn: Michael DeJong
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 Malcom, IA 50157

CERTIFICATE OF ANALYSIS

AR-15-JD-011873-01

Test	Result	Theoretical Level
UMAEK - Salmonella - AOAC 2003.09		Completed: 04/17/2015
AOAC 2003.09		
* Salmonella spp.	Negative per 25 g	Negative /25 g
UMBIP - Confirmation E. coli - BAM Chapter 4		Completed: 04/19/2015
BAM Chapter 4		
* E. coli	< 3 MPN/g	<=5 mpn/g
UMHBM - Staphylococcus aureus - BAM Chapter 12		Completed: 04/17/2015
BAM Chapter 12		
* Staphylococcus aureus	< 10 cfu/g (est)	<=10 cfu/g
UMHM3 - Aerobic Spore-forming Thermophilic Count - AACC 42-40		Completed: 04/18/2015
AACC Method 42-40		
Aerobic Spore-forming Thermophilic Count	340 cfu/g	<=10 cfu/g
UMJP9 - Aerobic Plate Count - CMMEF Chapter 7-Pour Plate		Completed: 04/17/2015
CMMEF Chapter 7		
* Aerobic Plate Count	1,200 cfu/g	<=400 cfu/g
UMMJ8 - Confirmation Total Coliforms - BAM Chapter 4		Completed: 04/19/2015
BAM Chapter 4		
* Total Coliforms	< 3 MPN/g	<=10 mpn/g
UMZK7 - Moulds - AACC 42-50		Completed: 04/20/2015
AACC Method 42-50		
* Mold	< 10 cfu/g (est)	<=100 cfu/g
* Yeast	< 10 cfu/g (est)	<=10 cfu/g
* Yeast & Moulds	< 10 cfu/g (est)	
UMZT1 - Aerobic Spore-forming Mesophilic Count - AACC 42-40-M		Completed: 04/17/2015
AACC Method 42-40-M		
Aerobic Spore-forming Mesophilic Count	40 cfu/g (est)	<=25 cfu/g

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Estimated counts are denoted by (est)

Eurofins Sample Code: 473-2015-04150164

Client Sample Code: V5033-1

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Stephan McDanel

Microbiologist

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Biological Testing
Cert:3329:01



Chemical Testing
Cert:2927:01

Eurofins Sample Code: 473-2015-04150165
Sample Description: Whirl-Pak bag 5
Client Sample Code: V5033-1
PO Number:
Client Code: JD0000028

Entry Date: 04/15/2015
Reporting Date: 04/21/2015

Biova
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 Malcom, IA 50157

CERTIFICATE OF ANALYSIS

AR-15-JD-011874-01

Test	Result	Theoretical Level
UMAEK - Salmonella - AOAC 2003.09		Completed: 04/17/2015
AOAC 2003.09		
* Salmonella spp.	Negative per 25 g	Negative /25 g
UMBIP - Confirmation E. coli - BAM Chapter 4		Completed: 04/19/2015
BAM Chapter 4		
* E. coli	< 3 MPN/g	<=5 mpn/g
UMHBM - Staphylococcus aureus - BAM Chapter 12		Completed: 04/17/2015
BAM Chapter 12		
* Staphylococcus aureus	< 10 cfu/g (est)	<=10 cfu/g
UMHM3 - Aerobic Spore-forming Thermophilic Count - AACC 42-40		Completed: 04/18/2015
AACC Method 42-40		
Aerobic Spore-forming Thermophilic Count	270 cfu/g	<=10 cfu/g
UMJP9 - Aerobic Plate Count - CMMEF Chapter 7-Pour Plate		Completed: 04/17/2015
CMMEF Chapter 7		
* Aerobic Plate Count	270 cfu/g	<=400 cfu/g
UMMJ8 - Confirmation Total Coliforms - BAM Chapter 4		Completed: 04/19/2015
BAM Chapter 4		
* Total Coliforms	< 3 MPN/g	<=10 mpn/g
UMZK7 - Moulds - AACC 42-50		Completed: 04/20/2015
AACC Method 42-50		
* Mold	< 10 cfu/g (est)	<=100 cfu/g
* Yeast	< 10 cfu/g (est)	<=10 cfu/g
* Yeast & Moulds	< 10 cfu/g (est)	
UMZT1 - Aerobic Spore-forming Mesophilic Count - AACC 42-40-M		Completed: 04/17/2015
AACC Method 42-40-M		
Aerobic Spore-forming Mesophilic Count	< 10 cfu/g (est)	<=25 cfu/g

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