

Client:	DEF Products, LLC
Contact	Joe Servin, General Manager
Address	422 East Barioni Blvd Imperial, CA 02251
Email	<a href="mailto:defproducts@gmail.com">defproducts@gmail.com</a>
Phone	760 355 7997

Enalytic ID	E1903059-001
Batch Number	303192019
Train Number	UTLX647702
Sample ID	DEF 32.5%
Date Sampled	3/19/2019
Date Received	3/20/2019
Report Date	3/25/2019

## Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241


Client ID: 32.5% DEF Batch# 303192019 Train# UTLX647702

Test Parameter/Method	Units	Test Method (ISO) <sup>1</sup>	Acceptable Limit <sup>2</sup>	Results	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.2	33.1	SPT	3/25/2019	Pass
Density @ 20degC	g/cm <sup>3</sup>	3675	---	1.0920	CND	3/20/2019	---
Refractive Index @ 20degC	N <sub>D</sub> <sup>20</sup>	22241-2 Annex C	1.3814-1.3843	1.3836	CND	3/21/2019	Pass
Alkalinity as NH <sub>3</sub>	%	22241-2 Annex D	<0.2	<0.01	BDK	3/21/2019	Pass
Biuret	%	22241-2 Annex E	<0.3	0.12	CND	3/25/2019	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5	<1.0	BDK	3/21/2019	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	BDK	3/25/2019	Pass
Phosphate	mg/kg	22241-2 Annex H	<0.5	<0.25	BDK	3/22/2019	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	3/22/2019	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	3/22/2019	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	3/22/2019	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	3/22/2019	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	3/22/2019	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	3/22/2019	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	3/22/2019	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	3/22/2019	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	3/22/2019	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.12	CLB	3/22/2019	Pass
Identity by FTIR (attached)	Spectra	22241-2 Annex J	Match	Reference Match	CND	3/21/2019	---

Note 1: All ISO standards are up to date with the latest revisions.

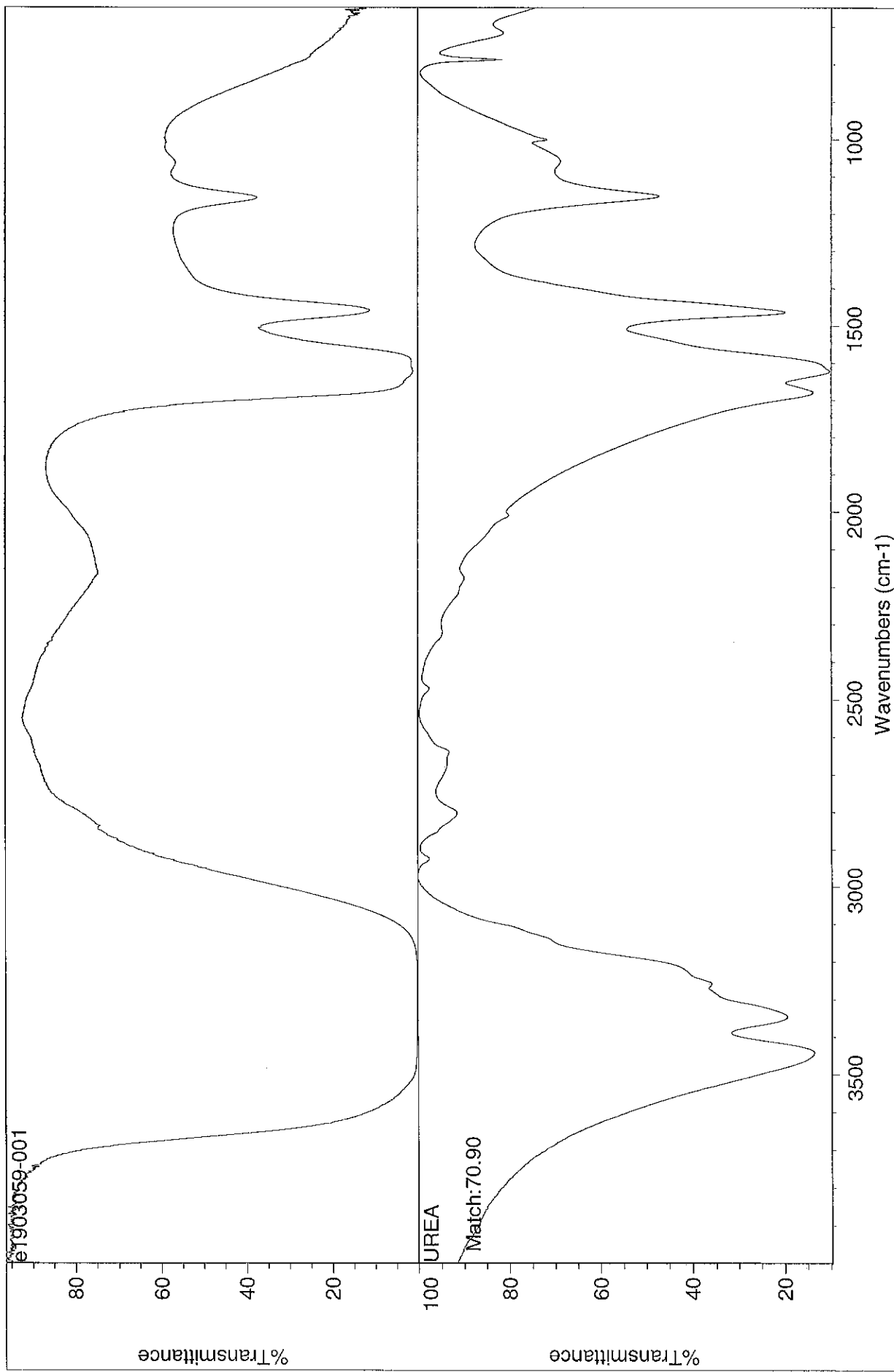
Note 2: The acceptable values are based on the standard 32.5% unless otherwise stated, and are less than or equal to the values shown.

**"The undersigned certifies that the value(s) reported have met the highest analytical quality control standards."**

Certification Approval   
 Laboratory Director: Anthony J Scala

Date: 3/25/2019

Search results for: e1903059-001  
Date: Thu Mar 21 09:32:55 2019 (GMT-04:00)  
Search algorithm: Search Expert  
Regions searched: 2600.00-450.00





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Contact	Joe Servin, General Manager
Address	422 East Barioni Blvd Imperial, CA 02251
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Phone	760 355 7997

Enalytic ID	E1903064-001
Batch Number	303202019
Train Number	GATX220444
Sample ID	DEF 32.5%
Date Sampled	3/20/2019
Date Received	3/21/2019
Report Date	3/26/2019

## Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241


Client ID: 32.5% DEF Batch# 303202019 Train# GATX220444

Test Parameter/Method	Units	Test Method (ISO) <sup>1</sup>	Acceptable Limit <sup>2</sup>	Results	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.2	33.0	SPT	3/26/2019	Pass
Density @ 20degC	g/cm <sup>3</sup>	3675	---	1.0925	CND	3/21/2019	---
Refractive Index @ 20degC	N <sub>D</sub> <sup>20</sup>	22241-2 Annex C	1.3814-1.3843	1.3835	CND	3/21/2019	Pass
Alkalinity as NH <sub>3</sub>	%	22241-2 Annex D	<0.2	<0.01	BDK	3/21/2019	Pass
Biuret	%	22241-2 Annex E	<0.3	0.14	CND	3/25/2019	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5	<1.0	BDK	3/21/2019	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	BDK	3/25/2019	Pass
Phosphate	mg/kg	22241-2 Annex H	<0.5	<0.25	BDK	3/26/2019	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	3/22/2019	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	3/22/2019	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	3/22/2019	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	3/22/2019	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	3/22/2019	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	3/22/2019	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	3/22/2019	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	3/22/2019	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	3/22/2019	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	3/22/2019	Pass
Identity by FTIR (attached)	Spectra	22241-2 Annex J	Match	Reference Match	CND	3/21/2019	---

Note 1: All ISO standards are up to date with the latest revisions.

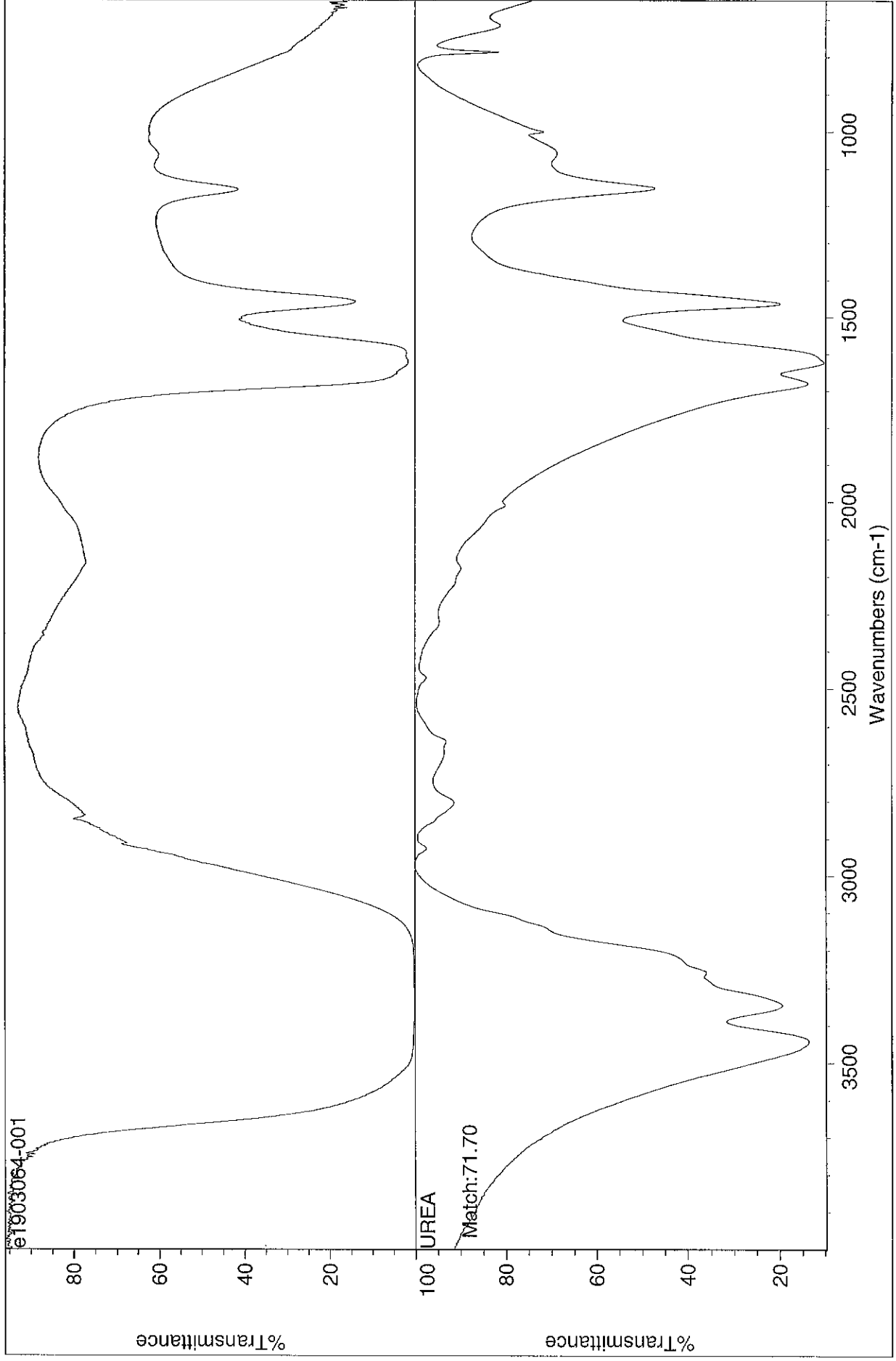
Note 2: The acceptable values are based on the standard 32.5% unless otherwise stated, and are less than or equal to the values shown.

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Certification Approval   
 Laboratory Director: Anthony J Scala

Date: 3/26/2019

Search results for: e1903064-001  
Date: Thu Mar 21 09:35:08 2019 (GMT-04:00)  
Search algorithm: Search Expert  
Regions searched: 2600.00-450.00





# Chain of Custody Record

6034 Corporate Drive, East Syracuse, NY 13057  
 Phone: 315.437.0255 Fax: 315.437.1209

Quote Number:

Client: DEF Products, LLC Phone #: (760) 355-7997		Project #/ Project Name: ISO 22241 DEF Testing		Number of Containers: 2		Remarks: Product Testing Certificate of Analysis	
Client Contact: Sharon Stegmuller Sample ID: Batch # 303202019 Train # GATX220444 PERCENT DEF 32.5%		Location (City/State): 422 E. Barioni Blvd., Imperial CA Lab Internal Use Only: E1903064 Matrix: Liquid Time: N/A Date: 3/20/2019		1 2 3 4 5 6 7 8 9 10 <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>			
Grab or Comp: Comp Size: 500 ml Type: HDPE Sample bottle:		Preservative: None		Sampled by (Print): Client Company: DEF Products, LLC		Name of Courier: FedEx First Overnight	
Parameter and Method: Urea Content Refractive Index @ 20degC Density @ 20degC Alkalinity (as NH3) Biuret Aldehydes Insolubles Phosphate Total Metals: Al, Ca, Cr, Cu, Fe, K, Mg, Ni, Na, Zn. FTIR		Relinquished by: (sign) Lois Telles DEF Products, LLC		Relinquished by: (sign)		Received by: (sign)	
				Date: 3/21/19 8:38 am		Received by: (sign) C. Scala	

Client:	DEF Products, LLC
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Address	422 East Barioni Blvd Imperial, CA 02251
Email	<a href="mailto:defproducts@gmail.com">defproducts@gmail.com</a>
Phone	760 355 7997

Enalytic ID	E1903085-001
Batch Number	303262019
Train Number	UTLX647703
Sample ID	DEF 32.5%
Date Sampled	3/26/2019
Date Received	3/27/2019
Report Date	4/1/2019

## Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF Batch# 303262019 Train# UTLX647703

Test Parameter/Method	Units	Test Method (ISO) <sup>1</sup>	Acceptable Limit <sup>2</sup>	Results	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.2	32.9	SPT	4/1/2019	Pass
Refractive Index @ 20degC	N <sub>D</sub> <sup>20</sup>	22241-2 Annex C	1.3814-1.3843	1.3835	CND	3/29/2019	Pass
Alkalinity as NH <sub>3</sub>	%	22241-2 Annex D	<0.2	<0.01	CND	3/28/2019	Pass
Biuret	%	22241-2 Annex E	<0.3	0.19	CND	4/1/2019	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5	<1.0	BDK	3/29/2019	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	CND	4/1/2019	Pass
Phosphate	mg/kg	22241-2 Annex H	<0.5	<0.25	BDK	3/29/2019	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	3/29/2019	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	3/29/2019	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	3/29/2019	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	3/29/2019	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	3/29/2019	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	3/29/2019	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	3/29/2019	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	3/29/2019	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	3/29/2019	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	3/29/2019	Pass

### Miscellaneous Secondary Unregulated Quality Standards

Identity by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	CND	3/29/2019	---
Density @ 20degC	g/cm <sup>3</sup>	3675	Not Applicable	1.0930	CND	3/29/2019	---

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Certification Approval \_\_\_\_\_  
 Laboratory Director: Anthony J Scala

Date: 4/1/2019

Search results for: e1903085-001  
Date: Fri Mar 29 09:42:16 2019 (GMT-04:00)  
Search algorithm: Search Expert  
Regions searched: 2600.00-450.00

