

Client:	DEF Products, LLC
Contact	Joe Servin, General Manager
Address	422 East Barioni Blvd Imperial, CA 02251
Email	defproducts@gmail.com
Phone	760 355 7997

Enalytic ID	E1907022-001
Batch Number	307092019
Train Number	UTLX647617
Sample ID	DEF 32.5%
Date Sampled	7/9/2019
Date Received	7/10/2019
Report Date	7/15/2019

Certificate of Analysis

Marine Diesel Exhaust Fluid Analytical ISO-18611

Client ID: 32.5% DEF Batch# 307092019 Train# UTLX647617

Test Parameter/Method	Units	Test Method (ISO) ¹	Acceptable Limit ²	Results	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.2	33.0	SPT	7/15/2019	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3836	BDK	7/10/2019	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.09	CND	7/10/2019	Pass
Biuret	%	22241-2 Annex E	<0.3	0.15	CND	7/12/2019	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5	<1.0	BDK	7/12/2019	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	BDK	7/15/2019	Pass
Phosphate	mg/kg	22241-2 Annex H	<0.5	0.34	BDK	7/11/2019	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.09	CLB	7/11/2019	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/11/2019	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/11/2019	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/11/2019	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/11/2019	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/11/2019	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/11/2019	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/11/2019	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/11/2019	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/11/2019	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	BDK	7/10/2019	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0910	BDK	7/10/2019	---

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."

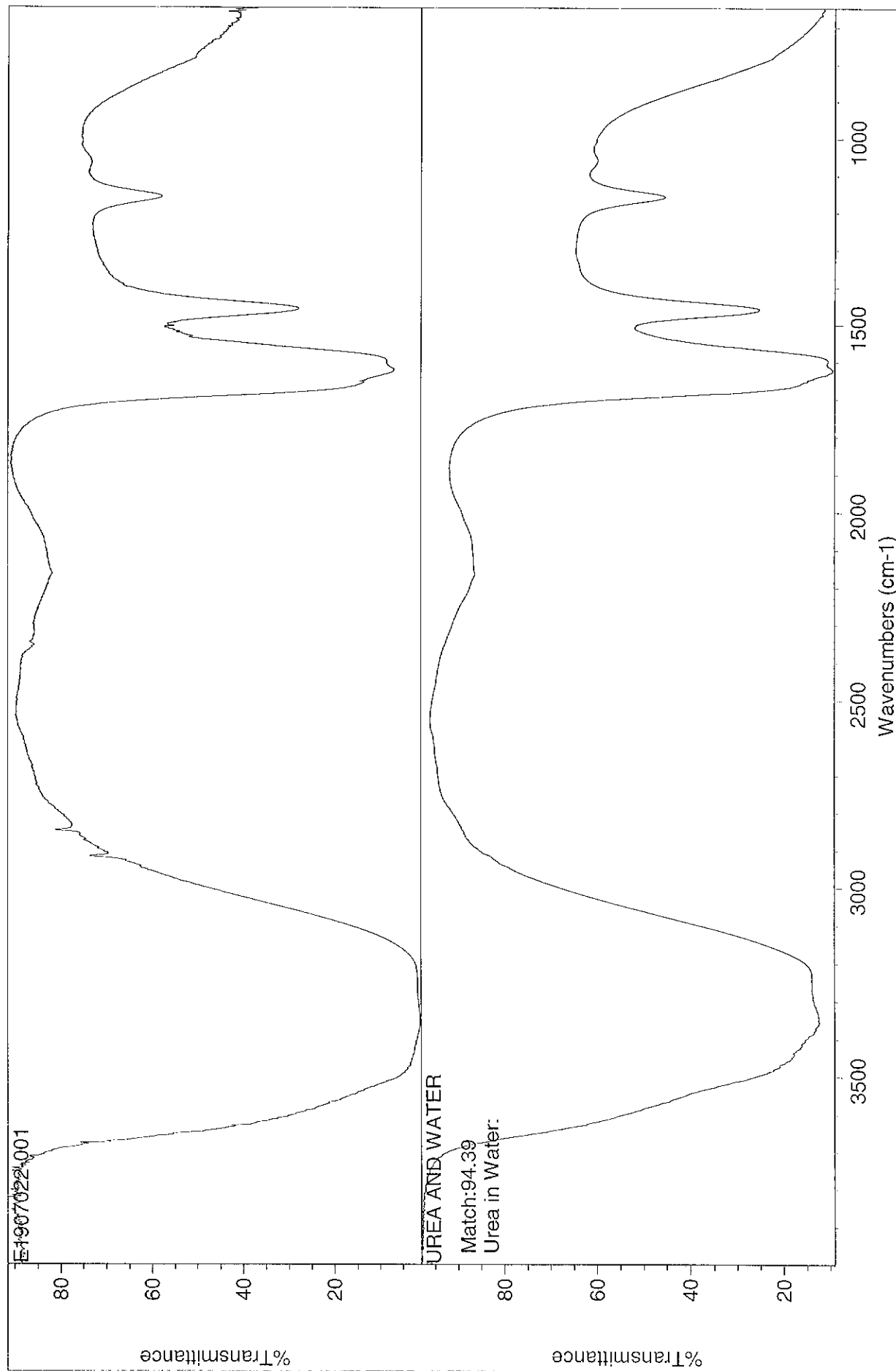
Certification Approval



Laboratory Director: Anthony J Scala

Date: 7/15/2019

Search results for: E1907022-001
Date: Wed Jul 10 15:25:25 2019 (GMT-04:00)
Search algorithm: Search Expert
Regions searched: 2600.00-450.00



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

Project #/ Project Name

[illegible]

Client:	DEF Products, LLC
Contact	Joe Servin, General Manager
Address	422 East Barioni Blvd Imperial, CA 02251
Email	defproducts@gmail.com
Phone	760 355 7997

Enalytic ID	E1907047-001
Batch Number	307192019
Train Number	GATX224336
Sample ID	DEF 32.5%
Date Sampled	7/19/2019
Date Received	7/22/2019
Report Date	7/25/2019

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF Batch# 307192019 Train# GATX224336

Test Parameter/Method	Units	Test Method (ISO) ¹	Acceptable Limit ²	Results	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.2	32.5	SPT	7/25/2019	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3828	CND	7/24/2019	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.07	BDK	7/23/2019	Pass
Biuret	%	22241-2 Annex E	<0.3	0.16	CND	7/22/2019	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	CND	7/23/2019	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	3.0	BDK	7/25/2019	Pass
Phosphate	mg/kg	22241-2 Annex H	<0.5	0.38	CND	7/24/2019	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/25/2019	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/25/2019	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/25/2019	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/25/2019	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/25/2019	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/25/2019	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.02	CLB	7/25/2019	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/25/2019	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.11	CLB	7/25/2019	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/25/2019	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	BDK	7/23/2019	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0905	CND	7/24/2019	---

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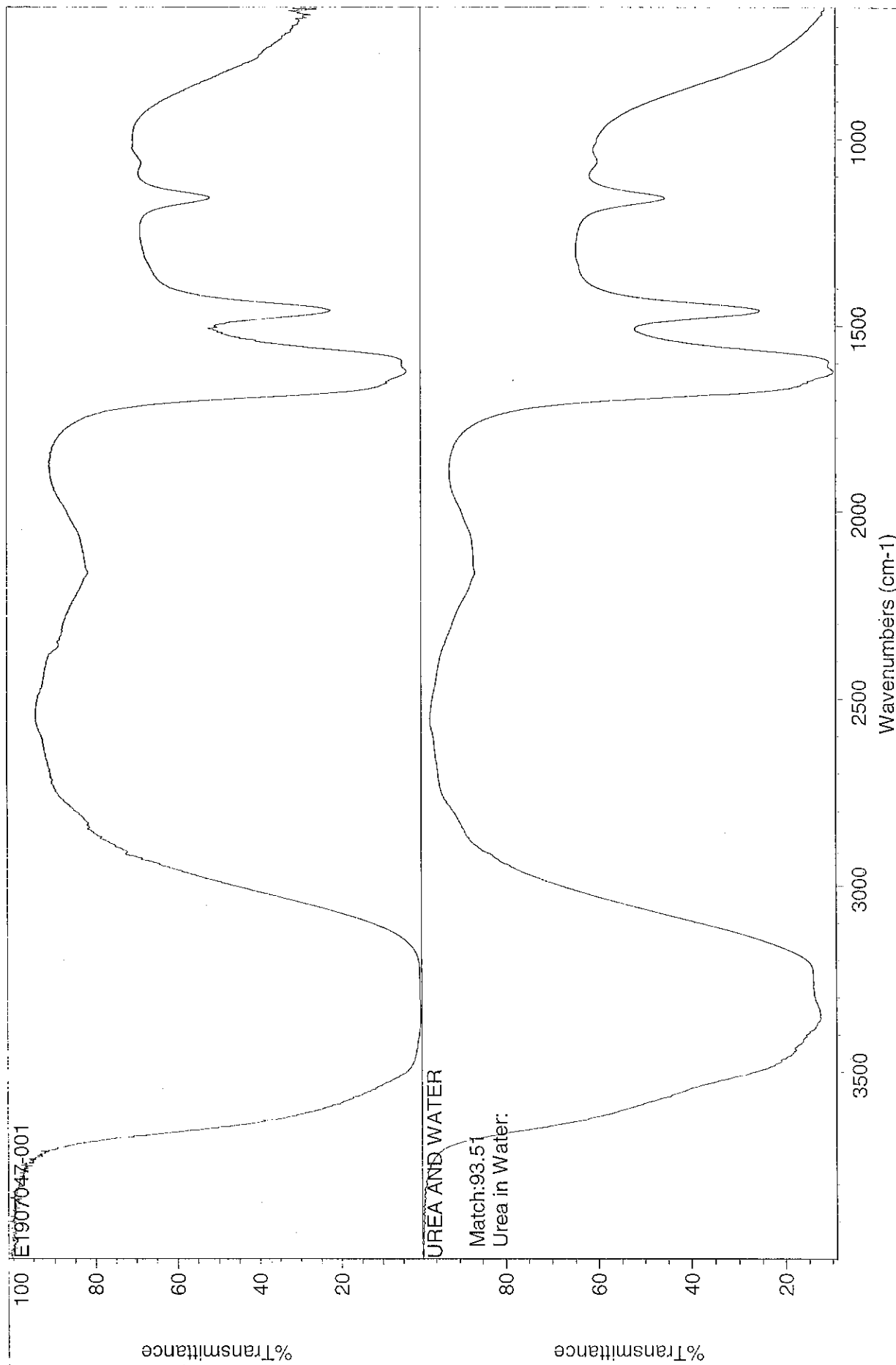
Certification Approval

Laboratory Director: Anthony J Scala



Date: 7/25/2019

Search results for: E1907047-001
Date: Tue Jul 23 13:47:30 2019 (GMT-04:00)
Search algorithm: Search Expert
Regions searched: 2600.00-450.00



Client:	DEF Products, LLC
Contact	Joe Servin, General Manager
Address	422 East Barioni Blvd Imperial, CA 02251
Email	defproducts@gmail.com
Phone	760 355 7997

Enalytic ID	E1907054-001
Batch Number	307222019
Train Number	TILX264976
Sample ID	DEF 32.5%
Date Sampled	7/22/2019
Date Received	7/23/2019
Report Date	7/26/2019

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF Batch# 307222019 Train# TILX264976

Test Parameter/Method	Units	Test Method (ISO) ¹	Acceptable Limit ²	Results	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.2	32.4	SPT	7/25/2019	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3826	CND	7/24/2019	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.04	BDK	7/24/2019	Pass
Biuret	%	22241-2 Annex E	<0.3	0.16	CND	7/24/2019	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	CND	7/25/2019	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	BDK	7/25/2019	Pass
Phosphate	mg/kg	22241-2 Annex H	<0.5	<0.25	CND	7/24/2019	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/25/2019	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/25/2019	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/25/2019	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/25/2019	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/25/2019	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/25/2019	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.02	CLB	7/25/2019	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/25/2019	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/25/2019	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/25/2019	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	BDK	7/23/2019	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0900	CND	7/24/2019	---

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.

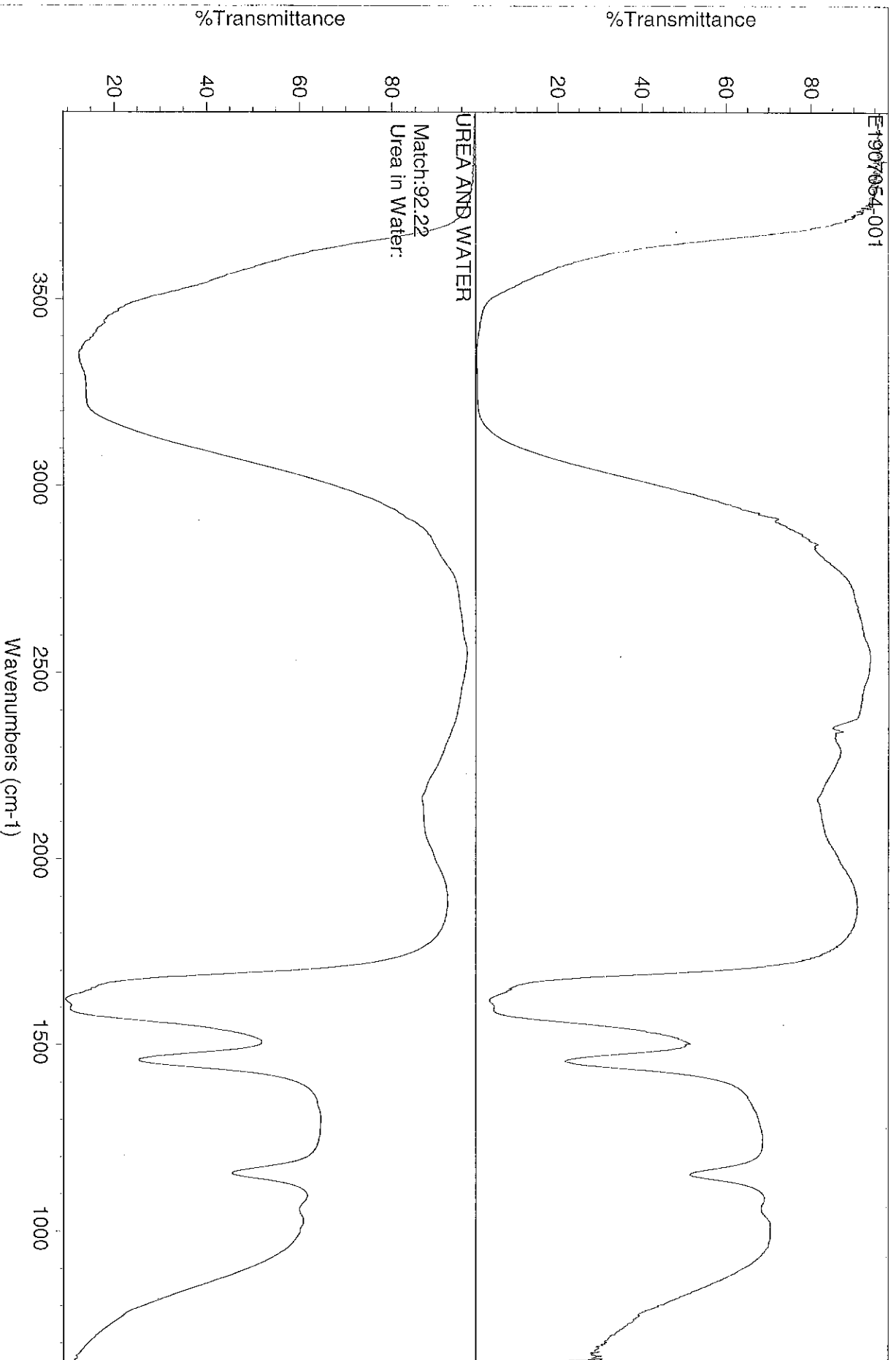
Note 3: Product is high grade A Diesel Exhaust Fluid.

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

Certification Approval 
Laboratory Director: Anthony J Scala

Date: 7/26/2019

Search results for: E1907054-001
Date: Tue Jul 23 14:01:46 2019 (GMT-04:00)
Search algorithm: Search Expert
Regions searched: 2600.00-450.00



Analytical Testing Laboratories

Chain of Custody Record

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

Quote Number:

[illegible]

Client:	DEF Products, LLC
Contact	Joe Servin, General Manager
Address	422 East Barioni Blvd Imperial, CA 02251
Email	defproducts@gmail.com
Phone	760 355 7997

Enalytic ID	E1907057-001
Batch Number	307232019
Train Number	UTLX680543
Sample ID	DEF 32.5%
Date Sampled	7/23/2019
Date Received	7/24/2019
Report Date	7/29/2019

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF Batch# 307232019 Train# UTLX680543

Test Parameter/Method	Units	Test Method (ISO) ¹	Acceptable Limit ²	Results	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.2	32.7	SPT	7/25/2019	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3831	CND	7/24/2019	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.03	BDK	7/24/2019	Pass
Biuret	%	22241-2 Annex E	<0.3	0.17	BDK	7/25/2019	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	CND	7/25/2019	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	BDK	7/26/2019	Pass
Phosphate	mg/kg	22241-2 Annex H	<0.5	<0.25	BDK	7/26/2019	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/25/2019	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/25/2019	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/25/2019	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/25/2019	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/25/2019	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/25/2019	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.02	CLB	7/25/2019	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/25/2019	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/25/2019	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/25/2019	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	BDK	7/29/2019	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0900	CND	7/24/2019	---

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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

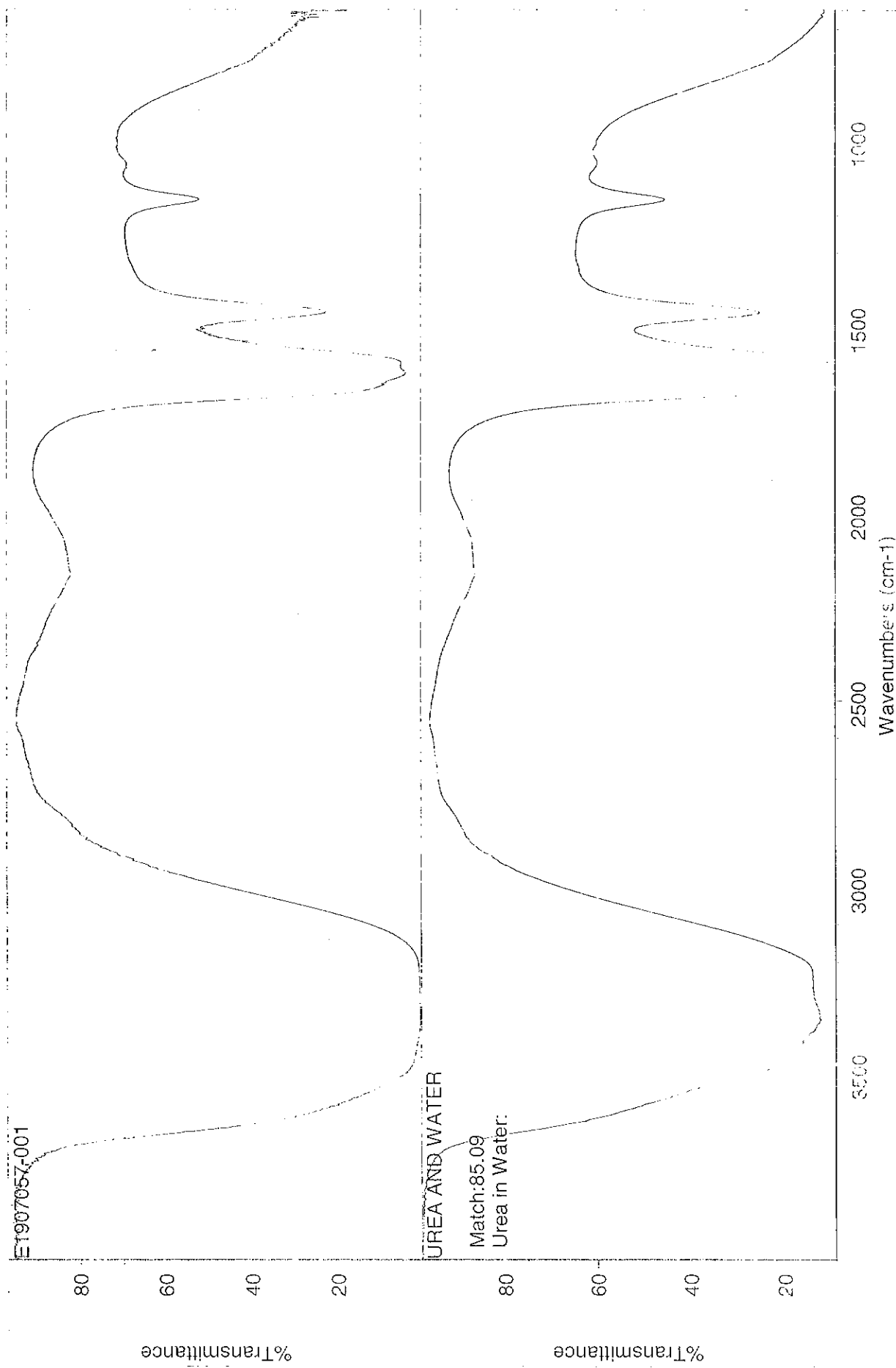
"The undersigned certifies that the value(s) reported have met the highest analytical quality control standards."

Certification Approval

Laboratory Director: Anthony J Scala

Date: 7/29/2019

Search results for: E1907057-001
Date: Mon Jul 29 09:51:52 2019 (GMT-04:00)
Search algorithm: Search Expert
Regions searched: 2600.00-450.00



(C)
(D)
(E)
(F)
(G)
(H)

Quote Number:

[illegible]

Client:	DEF Products, LLC
Contact	Joe Servin, General Manager
Address	422 East Barioni Blvd Imperial, CA 02251
Email	defproducts@gmail.com
Phone	760 355 7997

Enalytic ID	E1907062-001
Batch Number	307242019
Train Number	UTLX647933
Sample ID	DEF 32.5%
Date Sampled	7/24/2019
Date Received	7/25/2019
Report Date	7/30/2019

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF Batch# 307242019 Train# UTLX647933 Mansfield

Test Parameter/Method	Units	Test Method (ISO) ¹	Acceptable Limit ²	Results	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.2	32.9	SPT	7/29/2019	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3834	CND	7/29/2019	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.05	CND	7/29/2019	Pass
Biuret	%	22241-2 Annex E	<0.3	0.16	CND	7/26/2019	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	CND	7/29/2019	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	BDK	7/26/2019	Pass
Phosphate	mg/kg	22241-2 Annex H	<0.5	<0.25	BDK	7/29/2019	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/25/2019	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/25/2019	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/25/2019	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/25/2019	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/25/2019	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/25/2019	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.02	CLB	7/25/2019	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/25/2019	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.06	CLB	7/25/2019	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/25/2019	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	BDK	7/29/2019	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0900	CND	7/29/2019	---

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: 7/30/2019

Search results for: E1907062-001
Date: Mon Jul 29 10:02:45 2019 (GMT-04:00)
Search algorithm: Search Expert
Regions searched: 2600.00-450.00

