

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

Analytic ID	E1910055-001
Batch Number	310182019M
Train Number	UTLX647562
Sample ID	DEF 32.5%
Date Sampled	10/18/2019
Date Received	10/21/2019
Report Date	10/24/2019

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF Batch# 310182019M Train# UTLX647562

Test Parameter/Method	Units	Test Method (ISO) ¹	Acceptable Limit ²	Results	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.4	33.0	SPT	10/24/2019	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3835	BDK	10/21/2019	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	<0.01	BDK	10/22/2019	Pass
Biuret	%	22241-2 Annex E	<0.3	0.16	BDK	10/23/2019	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	BDK	10/22/2019	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	BDK	10/22/2019	Pass
Phosphate	mg/kg	22241-2 Annex H	<0.5	<0.25	BDK	10/23/2019	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/23/2019	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/23/2019	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	10/23/2019	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	10/23/2019	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	10/23/2019	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	10/23/2019	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/23/2019	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/23/2019	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/23/2019	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/23/2019	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	BDK	10/24/2019	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0920	BDK	10/21/2019	---

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."

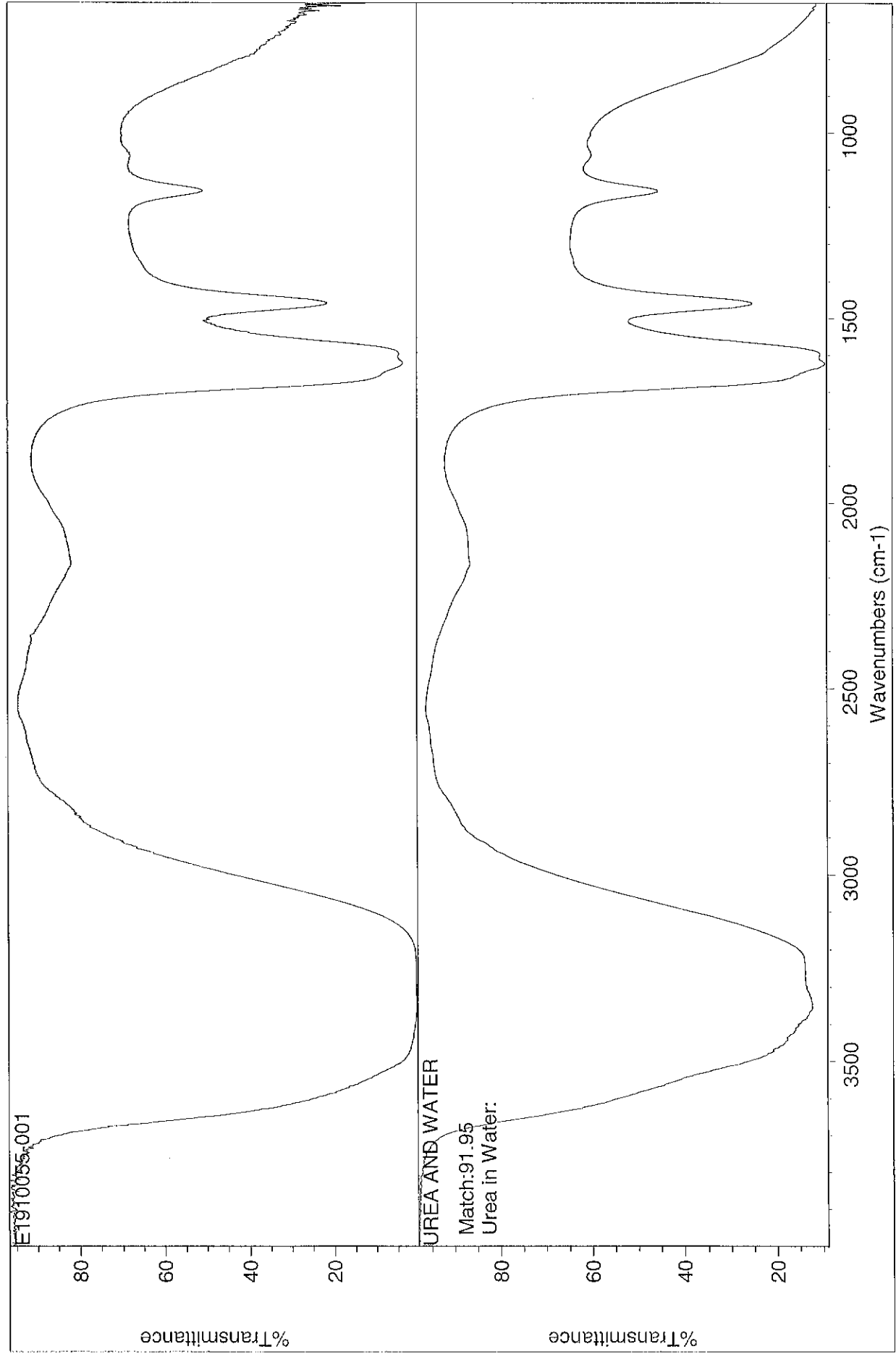
Certification Approval



Laboratory Director: Anthony J Scala

Date: 10/24/2019

Search results for: E1910055-001
Date: Thu Oct 24 09:02:32 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
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Analytic ID	E1910069-001
Batch Number	310242019P
Train Number	UTLX647990
Sample ID	DEF 32.5%
Date Sampled	10/23/2019
Date Received	10/24/2019
Report Date	10/29/2019

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF Batch# 310242019P Train# UTLX647990

Test Parameter/Method	Units	Test Method (ISO) ¹	Acceptable Limit ²	Results	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.4	33.0	SPT	10/29/2019	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3837	BDK	10/29/2019	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	<0.01	BDK	10/25/2019	Pass
Biuret	%	22241-2 Annex E	<0.3	0.16	BDK	10/28/2019	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	BDK	10/28/2019	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	BDK	10/29/2019	Pass
Phosphate	mg/kg	22241-2 Annex H	<0.5	<0.25	BDK	10/29/2019	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/28/2019	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/28/2019	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	10/28/2019	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	10/28/2019	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	10/28/2019	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	10/28/2019	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/28/2019	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/28/2019	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/28/2019	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/28/2019	Pass
Miscellaneous Secondary Unregulated Quality Standards							
Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	BDK	10/29/2019	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0915	BDK	10/24/2019	---

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.

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Certification Approval



Laboratory Director: Anthony J Scala

Date: 10/29/2019

Search results for: E1910069-001
Date: Tue Oct 29 11:17:44 2019 (GMT-04:00)
Search algorithm: Search Expert
Regions searched: 2600.00-450.00

