

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	E2007016-001
Batch Number	307072020MI
Truck Number	9F87730
Sample ID	DEF 32.5%
Date Sampled	7/7/2020
Date Received	7/8/2020
Report Date	7/13/2020

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: **32.5% DEF** Batch# **307072020MI** Truck # **9F87730**

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	32.4	SPT	7/13/2020	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3828	ALB	7/8/2020	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.07	BDK	7/9/2020	Pass
Biuret	%	22241-2 Annex E	<0.3	0.19	BDK	7/9/2020	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	BDK	7/13/2020	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	ALB	7/10/2020	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	CLB	7/9/2020	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/9/2020	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/9/2020	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/9/2020	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/9/2020	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/9/2020	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/9/2020	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/9/2020	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/9/2020	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.15	CLB	7/9/2020	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/9/2020	Pass
Miscellaneous Secondary Unregulated Quality Standards							
Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	BDK	7/13/2020	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0890	ALB	7/8/2020	---

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: 7/13/2020

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	E2007027-003
Batch Number	307102020M
Train Number	GATX647647
Sample ID	DEF 32.5%
Date Sampled	7/10/2020
Date Received	7/13/2020
Report Date	7/16/2020

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF Batch# 307102020M Train # GATX647647

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	32.4	SPT	7/15/2020	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3828	ALB	7/14/2020	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.02	ALB	7/16/2020	Pass
Biuret	%	22241-2 Annex E	<0.3	0.19	BDK	7/13/2020	Pass
Aldehyde ³	mg/kg	22241-2 Annex F	<5.0	1.0	ALB	7/15/2020	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	ALB	7/15/2020	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	CLB	7/15/2020	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.06	CLB	7/15/2020	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/15/2020	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/15/2020	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/15/2020	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/15/2020	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/15/2020	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/15/2020	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/15/2020	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/15/2020	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/15/2020	Pass
Miscellaneous Secondary Unregulated Quality Standards							
Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	ALB	7/15/2020	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0900	ALB	7/14/2020	---

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: Sample did not develop the correct color during Aldehyde analysis. Nitrate contamination suspected.

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

Certification Approval 

Laboratory Director: Anthony J Scala

Date: 7/16/2020

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	E2007045-001
Batch Number	307222020L
Train Number	TILX265555
Sample ID	DEF 32.5%
Date Sampled	7/22/2020
Date Received	7/23/2020
Report Date	7/27/2020

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF Batch# 307222020L Train # TILX265555

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	32.3	SPT	7/27/2020	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3825	ALB	7/23/2020	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.02	BDK	7/27/2020	Pass
Biuret	%	22241-2 Annex E	<0.3	0.13	BDK	7/24/2020	Pass
Aldehyde ³	mg/kg	22241-2 Annex F	<5.0	<1.0	ALB	7/23/2020	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	BDK	7/27/2020	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	CLB	7/24/2020	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.06	CLB	7/24/2020	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/24/2020	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/24/2020	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/24/2020	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.03	CLB	7/24/2020	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/24/2020	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/24/2020	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/24/2020	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/24/2020	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/24/2020	Pass
Miscellaneous Secondary Unregulated Quality Standards							
Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	ALB	7/24/2020	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0890	ALB	7/24/2020	---

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: Sample did not develop the correct color during Aldehyde analysis. Nitrate contamination suspected.

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Certification Approval 

Laboratory Director: Anthony J Scala

Date: 7/27/2020

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	E2007056-001
Batch Number	307242020M
Train Number	TILX265022
Sample ID	DEF 32.5%
Date Sampled	7/24/2020
Date Received	7/27/2020
Report Date	7/29/2020

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF Batch# 307242020M Train # TILX265022

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	32.5	SPT	7/29/2020	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3829	ALB	7/29/2020	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.07	BDK	7/29/2020	Pass
Biuret	%	22241-2 Annex E	<0.3	0.17	BDK	7/29/2020	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	ALB	7/28/2020	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	BDK	7/28/2020	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	CLB	7/27/2020	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.08	CLB	7/27/2020	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/27/2020	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/27/2020	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/27/2020	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/27/2020	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	7/27/2020	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/27/2020	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/27/2020	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.20	CLB	7/27/2020	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	7/27/2020	Pass
Miscellaneous Secondary Unregulated Quality Standards							
Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	ALB	7/29/2020	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0900	ALB	7/29/2020	---

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Certification Approval 
Laboratory Director: Anthony J Scala

Date: 8/4/2020

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	E2007065-001
Batch Number	307282020L
Train Number	TILX265572
Sample ID	DEF 32.5%
Date Sampled	7/28/2020
Date Received	7/31/2020
Report Date	8/5/2020

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF Batch# 307282020L Train # TILX265572

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	32.4	BDK	8/4/2020	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3827	BDK	8/3/2020	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.03	BDK	8/3/2020	Pass
Biuret	%	22241-2 Annex E	<0.3	0.14	BDK	8/4/2020	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	ALB	8/4/2020	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	BDK	8/4/2020	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.26	CLB	8/4/2020	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	8/4/2020	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	8/4/2020	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	8/4/2020	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	8/4/2020	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.11	CLB	8/4/2020	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	8/4/2020	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	8/4/2020	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	8/4/2020	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.27	CLB	8/4/2020	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	8/4/2020	Pass
Miscellaneous Secondary Unregulated Quality Standards							
Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	ALB	7/31/2020	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0890	BDK	8/3/2020	---

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Certification Approval 
Laboratory Director: Anthony J Scala

Date: 8/5/2020