

Client:	DEF Products, LLC
Contact	Sharon Stegmuller
Address	422 East Barioni Blvd Imperial, CA 02251
Email	defproducts@gmail.com
Phone	760 355 7997
Report Date	4/13/2023

Enalytic ID	E2304018-001
Batch Number	304032023L
Train Number	UTLX648230, Tank #3
Sample ID	DEF 32.5%
Date Sampled	4/3/2023
Date Received	4/10/2023
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF Batch # 304032023L Train # UTLX648230, Tank #3

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	32.6	SPT	4/13/2023	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3832	MDC	4/10/2023	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.07	MLB	4/10/2023	Pass
Biuret	%	22241-2 Annex E	<0.3	0.18	MLB	4/11/2023	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MDC	4/11/2023	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.5	MDC	4/11/2023	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.1	NAB	4/12/2023	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.17	NAB	4/12/2023	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.04	NAB	4/12/2023	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.081	NAB	4/12/2023	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.1	NAB	4/12/2023	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.1	NAB	4/12/2023	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.04	NAB	4/12/2023	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.31	NAB	4/12/2023	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.1	NAB	4/12/2023	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.1	NAB	4/12/2023	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.04	NAB	4/12/2023	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	MDC	4/10/2023	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0903	MDC	4/10/2023	---

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: ISO 17025 accreditation not applied for.

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Certification Approval 

Laboratory Director: Anthony J Scala

Date: 4/13/2023

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Address	422 East Barioni Blvd Imperial, CA 02251
Email	defproducts@gmail.com
Phone	760 355 7997
Report Date	4/13/2023

Enalytic ID	E2304018-002
Batch Number	304052023P
Train Number	UTLX647564
Sample ID	DEF 32.5%
Date Sampled	4/5/2023
Date Received	4/10/2023
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: **32.5% DEF** Batch # **304052023P** Train # **UTLX647564**

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	32.6	SPT	4/13/2023	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3831	MDC	4/10/2023	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.07	MLB	4/10/2023	Pass
Biuret	%	22241-2 Annex E	<0.3	0.18	MLB	4/11/2023	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MDC	4/11/2023	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.5	MDC	4/11/2023	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.1	NAB	4/12/2023	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.1	NAB	4/12/2023	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.04	NAB	4/12/2023	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.049	NAB	4/12/2023	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.1	NAB	4/12/2023	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.1	NAB	4/12/2023	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.04	NAB	4/12/2023	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.31	NAB	4/12/2023	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.1	NAB	4/12/2023	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.1	NAB	4/12/2023	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.04	NAB	4/12/2023	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	MDC	4/10/2023	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0898	MDC	4/10/2023	---

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Laboratory Director: Anthony J Scala

Date: 4/13/2023

Client:	DEF Products, LLC
Contact	Sharon Stegmuller
Address	422 East Barioni Blvd Imperial, CA 02251
Email	defproducts@gmail.com
Phone	760 355 7997
Report Date	4/21/2023

Enalytic ID	E2304039-001
Batch Number	304112023M
Train Number	GATX220496
Sample ID	DEF 32.6%
Date Sampled	4/11/2023
Date Received	4/18/2023
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.6% DEF Batch # 304112023M Train # GATX220496

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	4/21/2023	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3830	MDC	4/20/2023	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.08	MDC	4/19/2023	Pass
Biuret	%	22241-2 Annex E	<0.3	0.19	MDC	4/20/2023	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MFB	4/19/2023	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.5	MFB	4/20/2023	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	4/19/2023	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.077	NAB	4/19/2023	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	4/19/2023	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	4/19/2023	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	4/19/2023	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	4/19/2023	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	4/19/2023	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	NAB	4/19/2023	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	4/19/2023	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	4/19/2023	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	4/19/2023	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	MDC	4/19/2023	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0903	MFB	4/19/2023	---

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Laboratory Director: Anthony J Scala

Date: 4/21/2023

Client:	DEF Products, LLC
Contact	Sharon Stegmuller
Address	422 East Barioni Blvd Imperial, CA 02251
Email	defproducts@gmail.com
Phone	760 355 7997
Report Date	4/24/2023

Enalytic ID	E2304042-001
Batch Number	304172023L
Train Number	UTLX647714
Sample ID	DEF 32.7%
Date Sampled	4/17/2023
Date Received	4/20/2023
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.7% DEF Batch # 304172023L Train # UTLX647714

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	4/24/2023	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3829	MDC	4/20/2023	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.07	MFB	4/21/2023	Pass
Biuret	%	22241-2 Annex E	<0.3	0.17	MDC	4/21/2023	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MFB	4/24/2023	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.5	MFB	4/20/2023	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	4/24/2023	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.089	NAB	4/24/2023	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	4/24/2023	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	4/24/2023	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	4/24/2023	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	4/24/2023	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	4/24/2023	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	NAB	4/24/2023	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	4/24/2023	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	4/24/2023	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	4/24/2023	Pass
Miscellaneous Secondary Unregulated Quality Standards							
Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	MDC	4/24/2023	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0883	MDC	4/21/2023	---

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Laboratory Director: Anthony J Scala

Date: 4/24/2023

Client:	DEF Products, LLC
Contact	Sharon Stegmuller
Address	422 East Barioni Blvd Imperial, CA 02251
Email	defproducts@gmail.com
Phone	760 355 7997
Report Date	4/27/2023

Enalytic ID	E2304048-002
Batch Number	304212023M
Train Number	GBRX706789
Sample ID	DEF 32.5%
Date Sampled	4/21/2023
Date Received	4/25/2023
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: **32.5% DEF** Batch # **304212023M** Train # **GBRX706789**

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	32.6	SPT	4/27/2023	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3831	MFB	4/26/2023	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.11	MFB	4/27/2023	Pass
Biuret	%	22241-2 Annex E	<0.3	0.19	MDC	4/26/2023	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MFB	4/26/2023	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.5	MFB	4/25/2023	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	4/26/2023	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.093	NAB	4/26/2023	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.025	NAB	4/26/2023	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	4/26/2023	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	4/26/2023	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	4/26/2023	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	4/26/2023	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.44	NAB	4/26/2023	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	4/26/2023	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	4/26/2023	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	4/26/2023	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	MDC	4/26/2023	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0908	MFB	4/26/2023	---

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Certification Approval 

Laboratory Director: Anthony J Scala

Date: 4/27/2023

Client:	DEF Products, LLC
Contact	Sharon Stegmuller
Address	422 East Barioni Blvd Imperial, CA 02251
Email	defproducts@gmail.com
Phone	760 355 7997
Report Date	4/27/2023

Enalytic ID	E2304048-001
Batch Number	304192023P
Train Number	TILX265008
Sample ID	DEF 32.7%
Date Sampled	4/19/2023
Date Received	4/25/2023
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.7% DEF Batch # 304192023P Train # TILX265008

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	4/27/2023	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3829	MFB	4/26/2023	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.06	MFB	4/27/2023	Pass
Biuret	%	22241-2 Annex E	<0.3	0.16	MDC	4/26/2023	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MFB	4/26/2023	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.5	MFB	4/25/2023	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	4/26/2023	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.12	NAB	4/26/2023	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	4/26/2023	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.020	NAB	4/26/2023	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	4/26/2023	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	4/26/2023	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	4/26/2023	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	NAB	4/26/2023	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	4/26/2023	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	4/26/2023	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	4/26/2023	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	MDC	4/26/2023	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0898	MFB	4/26/2023	---

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

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Certification Approval 

Laboratory Director: Anthony J Scala

Date: 4/27/2023

Client:	DEF Products, LLC
Contact	Sharon Stegmuller
Address	422 East Barioni Blvd Imperial, CA 02251
Email	defproducts@gmail.com
Phone	760 355 7997
Report Date	5/3/2023

Analytic ID	E2304058-001
Batch Number	304252023P
Train Number	TILX264874
Sample ID	DEF 32.5%
Date Sampled	4/25/2023
Date Received	4/28/2023
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF Batch # 304252023P Train # TILX264874

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	5/3/2023	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3828	MFB	5/2/2023	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.05	MFB	5/1/2023	Pass
Biuret	%	22241-2 Annex E	<0.3	0.17	MLB	4/28/2023	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MFB	4/28/2023	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.5	MFB	5/1/2023	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	5/2/2023	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	5/2/2023	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.073	NAB	5/2/2023	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.034	NAB	5/2/2023	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	5/2/2023	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	5/2/2023	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.034	NAB	5/2/2023	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.432	NAB	5/2/2023	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	5/2/2023	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	5/2/2023	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	5/2/2023	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	MFB	4/28/2023	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0883	MFB	5/2/2023	---

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: ISO 17025 accreditation not applied for.

All procedures were conducted in accordance with Enalytic's Quality Control manual in its most current form and/or related procedures. The information contained in the analytical report represents only the materials tested and may not be reproduced except in full and without the written approval of the Technical Director of Enalytic Labs. Enalytic maintains a quality system in compliance with ISO17025:2017 with accreditations through ANAB certificate #AT-2956. All testing will be conducted in good faith by trained personnel equipped with the proper equipment and methodologies. Our liability will be limited to the cost of the services, including third-party charges. All test samples will be retained for a minimum of 3 months and/or extension by request. Fraudulent, false or statements of fiction are punishable by Federal Law. All samples received and reported above have been received in proper condition or as noted on the report.

Certification Approval _____

Laboratory Director: Anthony J Scala

Date: 5/3/2023