

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	8/4/2023

Enalytic ID	E2308003-001
TANK	5 & 4
Batch Number	308012023P
Train	UTLX647720
Sample ID	DEF 32.6%
Date Sampled	8/1/2023
Date Received	8/2/2023
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.6% DEF TANK 5 & 4 Batch # 308012023P Train # UTLX647720

Test Parameter/Method	Units	Test Method (ISO) ¹	Acceptable Limit ²	Results ⁴	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.2	32.2	SPT	8/4/2023	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3825	MLB	8/4/2023	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.06	MFB	8/3/2023	Pass
Biuret	%	22241-2 Annex E	<0.3	0.16	MDC	8/3/2023	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MFB	8/2/2023	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.5	MDC	8/3/2023	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/4/2023	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.17	NAB	8/4/2023	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/4/2023	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.048	NAB	8/4/2023	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/4/2023	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/4/2023	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/4/2023	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.36	NAB	8/4/2023	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.13	NAB	8/4/2023	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/4/2023	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/4/2023	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	MLB	8/3/2023	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0888	MDC	8/3/2023	---

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.

Note 4: We currently are waiting for our refractometer to be recalibrated at Misco. Until such time that we receive the meter back, we will be using a loaner which does not fall under our certification criteria.

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Certification Approval _____

Laboratory Director: Anthony J Scala

Date: 8/4/2023

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	8/8/2023

Enalytic ID	E2308007-001
TANK	3 & 2
Batch Number	308032023P
Train	UTLX647944
Sample ID	DEF 32.7%
Date Sampled	8/3/2023
Date Received	8/4/2023
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.7% DEF TANK 3 & 2 Batch # 308032023P Train # UTLX647944

Test Parameter/Method	Units	Test Method (ISO) ¹	Acceptable Limit ²	Results ⁴	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.2	32.3	SPT	8/7/2023	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3826	MLB	8/4/2023	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.09	MDC	8/8/2023	Pass
Biuret	%	22241-2 Annex E	<0.3	0.16	MDC	8/7/2023	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MFB	8/7/2023	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.5	MFB	8/7/2023	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/4/2023	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.069	NAB	8/4/2023	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/4/2023	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.079	NAB	8/4/2023	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/4/2023	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/4/2023	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/4/2023	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.27	NAB	8/4/2023	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.14	NAB	8/4/2023	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/4/2023	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/4/2023	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	MDC	8/7/2023	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0889	MLB	8/7/2023	---

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

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Note 4: We currently are waiting for our refractometer to be recalibrated at Misco. Until such time that we receive the meter back, we will be using a loaner which does not fall under our certification criteria.

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Certification Approval _____

Laboratory Director: Anthony J Scala

Date: 8/8/2023

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	8/16/2023

Analytic ID	E2308021-001
TANK	5 & 4
Batch Number	308072023L
Train	GATX220481
Sample ID	DEF 32.8%
Date Sampled	8/7/2023
Date Received	8/14/2023
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.8% DEF TANK 5 & 4 Batch # 308072023L Train # GATX220481

Test Parameter/Method	Units	Test Method (ISO) ¹	Acceptable Limit ²	Results ⁴	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.2	32.5	SPT	8/15/2023	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3830	MFB	8/15/2023	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.08	MDC	8/14/2023	Pass
Biuret	%	22241-2 Annex E	<0.3	0.17	MDC	8/15/2023	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MFB	8/14/2023	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.5	MFB	8/15/2023	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/14/2023	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/14/2023	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/14/2023	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/14/2023	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/14/2023	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/14/2023	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/14/2023	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.34	NAB	8/14/2023	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.058	NAB	8/14/2023	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/14/2023	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/14/2023	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	MDC	8/15/2023	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0888	MDC	8/14/2023	---

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: 8/16/2023

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	8/16/2023

Enalytic ID	E2308021-002
Batch Number	308092023L
Train	UTLX648227
Sample ID	DEF 32.7%
Date Sampled	8/9/2023
Date Received	8/14/2023
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.7% DEF Batch # 308092023L Train # UTLX648227

Test Parameter/Method	Units	Test Method (ISO) ¹	Acceptable Limit ²	Results ⁴	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.2	32.5	SPT	8/15/2023	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3829	MFB	8/15/2023	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.08	MDC	8/14/2023	Pass
Biuret	%	22241-2 Annex E	<0.3	0.17	MDC	8/15/2023	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MFB	8/14/2023	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.5	MFB	8/15/2023	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/14/2023	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.28	NAB	8/14/2023	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/14/2023	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.052	NAB	8/14/2023	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/14/2023	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/14/2023	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/14/2023	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.42	NAB	8/14/2023	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.13	NAB	8/14/2023	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.052	NAB	8/14/2023	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/14/2023	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	MDC	8/15/2023	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0883	MDC	8/14/2023	---

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.

Note 4: We currently are waiting for our refractometer to be recalibrated at Misco. Until such time that we receive the meter back, we will be using a loaner which does not fall under our certification criteria.

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Certification Approval 

Laboratory Director: Anthony J Scala

Date: 8/16/2023

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	8/17/2023

A+ Rating

Enalytic ID	E2308023-001
TANK	3 & 4
Batch Number	308142023P
Train	GBRX173536
Sample ID	DEF 32.5%
Date Sampled	8/14/2023
Date Received	8/15/2023
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF TANK 3 & 4 Batch # 308142023P Train # GBRX173536

Test Parameter/Method	Units	Test Method (ISO) ¹	Acceptable Limit ²	Results ⁴	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.2	32.2	SPT	8/15/2023	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3825	MFB	8/15/2023	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.12	MDC	8/16/2023	Pass
Biuret	%	22241-2 Annex E	<0.3	0.15	MDC	8/15/2023	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<0.1	MFB	8/17/2023	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.5	MFB	8/15/2023	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/16/2023	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/16/2023	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/16/2023	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/16/2023	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/16/2023	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/16/2023	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/16/2023	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	NAB	8/16/2023	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/16/2023	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/16/2023	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/16/2023	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	MDC	8/15/2023	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0893	MFB	8/15/2023	---

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Certification Approval _____

Laboratory Director: Anthony J Scala

Date: 8/17/2023

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	8/23/2023

Internal Rating A+

Enalytic ID	E2308033-001
TANK	2 & 5
Batch Number	308172023P2
Train	GBRX705230
Sample ID	DEF 32.4%
Date Sampled	8/17/2023
Date Received	8/18/2023
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.4% DEF TANK 2 & 5 Batch # 308172023P2 Train # GBRX705230

Test Parameter/Method	Units	Test Method (ISO) ¹	Acceptable Limit ²	Results ⁴	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.2	32.3	SPT	8/22/2023	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3826	MFB	8/22/2023	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.12	MDC	8/21/2023	Pass
Biuret	%	22241-2 Annex E	<0.3	0.15	MDC	8/18/2023	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MFB	8/18/2023	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.5	MFB	8/21/2023	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/21/2023	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/21/2023	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.038	NAB	8/21/2023	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/21/2023	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/21/2023	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/21/2023	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/21/2023	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	NAB	8/21/2023	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/21/2023	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/21/2023	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/21/2023	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	MFB	8/22/2023	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0898	MFB	8/22/2023	---

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Laboratory Director: Anthony J Scala

Date: 8/23/2023

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	8/29/2023

Analytic ID	E2308044-001
TANK	1 & 3
Batch Number	308222023P
Train	PNWX703020
Sample ID	DEF 32.5%
Date Sampled	8/22/2023
Date Received	8/24/2023
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF TANK 1 & 3 Batch # 308222023P Train # PNWX703020

Test Parameter/Method	Units	Test Method (ISO) ¹	Acceptable Limit ²	Results ⁴	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.2	32.2	SPT	8/28/2023	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3823	MFB	8/28/2023	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.12	MDC	8/28/2023	Pass
Biuret	%	22241-2 Annex E	<0.3	<0.1	MFB	8/25/2023	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MFB	8/28/2023	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.5	MFB	8/24/2023	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/25/2023	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/25/2023	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.024	NAB	8/25/2023	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.028	NAB	8/25/2023	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/25/2023	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/25/2023	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.024	NAB	8/25/2023	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	NAB	8/25/2023	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.057	NAB	8/25/2023	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/25/2023	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/25/2023	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	MFB	8/28/2023	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0893	MFB	8/28/2023	---

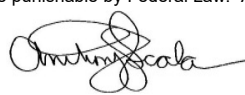
Note 1: All ISO standards are up to date with the latest revisions.

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.

Note 4: We currently are waiting for our refractometer to be recalibrated at Misco. Until such time that we receive the meter back, we will be using a loaner which does not fall under our certification criteria.

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Certification Approval 

Laboratory Director: Anthony J Scala

Date: 8/29/2023

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	8/29/2023

Analytic ID	E2308044-002
TANK	5 & 4
Batch Number	308232023P
Train	GBRX715953
Sample ID	DEF 32.5%
Date Sampled	8/23/2023
Date Received	8/24/2023
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF TANK 5 & 4 Batch # 308232023P Train # GBRX715953

Test Parameter/Method	Units	Test Method (ISO) ¹	Acceptable Limit ²	Results ⁴	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.2	32.1	SPT	8/28/2023	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3822	MFB	8/28/2023	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.14	MDC	8/28/2023	Pass
Biuret	%	22241-2 Annex E	<0.3	<0.1	MFB	8/25/2023	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MFB	8/28/2023	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.5	MFB	8/25/2023	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/25/2023	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/25/2023	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.029	NAB	8/25/2023	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.058	NAB	8/25/2023	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/25/2023	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/25/2023	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.029	NAB	8/25/2023	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	NAB	8/25/2023	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.12	NAB	8/25/2023	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.048	NAB	8/25/2023	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.024	NAB	8/25/2023	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	MFB	8/28/2023	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0893	MFB	8/28/2023	---

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.

Note 4: We currently are waiting for our refractometer to be recalibrated at Misco. Until such time that we receive the meter back, we will be using a loaner which does not fall under our certification criteria.

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Certification Approval 

Laboratory Director: Anthony J Scala

Date: 8/29/2023

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	9/1/2023

Enalytic ID	E2308054-001
TANK	13
Batch Number	308292023P
TANK	2 & 1
Sample ID	DEF 32.3%
Date Sampled	8/29/2023
Date Received	8/30/2023
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.3% DEF TANK # 13 Batch # 308292023P TANK # 2 & 1

Test Parameter/Method	Units	Test Method (ISO) ¹	Acceptable Limit ²	Results ⁴	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.2	32.1	SPT	9/1/2023	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3822	MFB	8/30/2023	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.15	MDC	9/1/2023	Pass
Biuret	%	22241-2 Annex E	<0.3	0.14	MDC	8/31/2023	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MFB	9/1/2023	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.5	MFB	8/31/2023	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/31/2023	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.14	NAB	8/31/2023	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/31/2023	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/31/2023	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/31/2023	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/31/2023	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/31/2023	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	NAB	8/31/2023	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/31/2023	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	NAB	8/31/2023	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	NAB	8/31/2023	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	MFB	8/30/2023	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0893	MFB	8/30/2023	---

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Certification Approval _____

Laboratory Director: Anthony J Scala

Date: 9/1/2023