

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	12/6/2023

Enalytic ID	E2312001-001
TANK #	3 & 5
Batch Number	312012023P
Train	TILX263603
Sample ID	DEF 32.1%
Date Sampled	12/1/2023
Date Received	12/4/2023
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.1% DEF TANK # 3 & 5 Batch # 312012023P Train # TILX263603

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	32.0	SPT	12/6/2023	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3822	MDC	12/5/2023	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.06	MFB	12/5/2023	Pass
Biuret	%	22241-2 Annex E	<0.3	0.17	MDC	12/4/2023	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MFB	12/4/2023	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.5	MFB	12/4/2023	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	12/6/2023	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.38	SPT	12/6/2023	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.079	SPT	12/6/2023	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.050	SPT	12/6/2023	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	12/6/2023	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.19	SPT	12/6/2023	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.060	SPT	12/6/2023	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.31	SPT	12/6/2023	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	12/6/2023	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	12/6/2023	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.04	SPT	12/6/2023	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	CAR	12/5/2023	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0903	MFB	12/5/2023	---

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: 12/6/2023

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	12/15/2023

Enalytic ID	E2312020-001
TANK #	2 & 3
Batch Number	312112023T
Train	GATX235296
Sample ID	DEF 32.3%
Date Sampled	12/11/2023
Date Received	12/12/2023
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.3% DEF TANK # 2 & 3 Batch # 312112023T Train # GATX235296

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	32.2	SPT	12/14/2023	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3825	MDC	12/14/2023	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	<0.01	MFB	12/12/2023	Pass
Biuret	%	22241-2 Annex E	<0.3	0.15	MDC	12/12/2023	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MFB	12/13/2023	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.5	MFB	12/12/2023	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	12/14/2023	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	12/14/2023	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.11	SPT	12/14/2023	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.04	SPT	12/14/2023	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	12/14/2023	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	12/14/2023	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.070	SPT	12/14/2023	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.31	SPT	12/14/2023	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.30	SPT	12/14/2023	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.10	SPT	12/14/2023	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.04	SPT	12/14/2023	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	MDC	12/14/2023	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0903	MFB	12/14/2023	---

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Certification Approval 

Laboratory Director: Anthony J Scala

Date: 12/15/2023

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	12/29/2023

Enalytic ID	E2312050-001
TANK #	4 & 3
Batch Number	312192023L
Train	UTLX647920
Sample ID	DEF 32.3%
Date Sampled	12/19/2023
Date Received	12/20/2023
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.3% DEF TANK # 4 & 3 Batch # 312192023L Train # UTLX647920

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	32.2	SPT	12/27/2023	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3824	CAR	12/26/2023	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.03	MFB	12/20/2023	Pass
Biuret	%	22241-2 Annex E	<0.3	0.17	MDC	12/20/2023	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MFB	12/21/2023	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	4.1	MFB	12/27/2023	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	12/20/2023	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	12/20/2023	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.066	SPT	12/20/2023	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.04	SPT	12/20/2023	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	12/20/2023	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	12/20/2023	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.04	SPT	12/20/2023	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.31	SPT	12/20/2023	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.39	SPT	12/20/2023	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.15	SPT	12/20/2023	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.04	SPT	12/20/2023	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	MFB	12/27/2023	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0894	MFB	12/27/2023	---

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Date: 12/29/2023

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	12/29/2023

Enalytic ID	E2312056-001
TANK #	5 & 1
Batch Number	312202023M
Train	GBRX706845
Sample ID	DEF 32.2%
Date Sampled	12/20/2023
Date Received	12/21/2023
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.2% DEF TANK # 5 & 1 Batch # 312202023M Train # GBRX706845

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	32.2	SPT	12/27/2023	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3824	CAR	12/26/2023	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.06	MDC	12/21/2023	Pass
Biuret	%	22241-2 Annex E	<0.3	0.14	MDC	12/26/2023	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MFB	12/26/2023	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.5	MFB	12/26/2023	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	12/21/2023	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	12/21/2023	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.067	SPT	12/21/2023	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.04	SPT	12/21/2023	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	12/21/2023	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	12/21/2023	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.04	SPT	12/21/2023	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.31	SPT	12/21/2023	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	12/21/2023	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	12/21/2023	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.04	SPT	12/21/2023	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	MFB	12/27/2023	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0894	MFB	12/27/2023	---

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Certification Approval 

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Date: 12/29/2023

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	1/5/2024

Analytic ID	E2401001-001
TANK #	2 & 3
Batch Number	312272023M
Train	GBRX716310
Sample ID	DEF 32.5%
Date Sampled	12/27/2023
Date Received	1/2/2024
ISO 17025	

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF TANK # 2 & 3 Batch # 312272023M Train # GBRX716310

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	32.2	SPT	1/5/2024	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3825	MFB	1/3/2024	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.06	MDC	1/2/2024	Pass
Biuret	%	22241-2 Annex E	<0.3	0.16	MDC	1/3/2024	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MFB	1/2/2024	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.5	MFB	1/2/2024	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	1/4/2024	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	1/4/2024	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.044	SPT	1/4/2024	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.04	SPT	1/4/2024	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	1/4/2024	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	1/4/2024	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.04	SPT	1/4/2024	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.31	SPT	1/4/2024	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	1/4/2024	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.10	SPT	1/4/2024	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.04	SPT	1/4/2024	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	MDC	1/3/2024	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0889	MFB	1/3/2024	---

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Date: 1/5/2024