

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

Enalytic ID	E2012013-002
Batch Number	312022020M
Train Number	GATX225156
Sample ID	DEF 32.5%
Date Sampled	12/2/2020
Date Received	12/4/2020
Report Date	12/8/2020

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF Batch # 312022020M Train # GATX225156

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	12/7/2020	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3831	AEC	12/4/2020	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.08	ALB	12/7/2020	Pass
Biuret	%	22241-2 Annex E	<0.3	0.15	AEC	12/7/2020	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	AEC	12/7/2020	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	AEC	12/4/2020	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	CLB	12/7/2020	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	12/7/2020	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	12/7/2020	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	12/7/2020	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	12/7/2020	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.08	CLB	12/7/2020	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	12/7/2020	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	12/7/2020	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	12/7/2020	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	12/7/2020	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	12/7/2020	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	AEC	12/4/2020	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0928	AEC	12/4/2020	---

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: 12/8/2020

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

Enalytic ID	E2012045-001
Batch Number	312142020M
Train Number	TILX265217
Sample ID	DEF 32.9%
Date Sampled	12/14/2020
Date Received	12/16/2020
Report Date	12/18/2020

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.9% DEF Batch# 312142020M Train # TILX265217

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	12/18/2020	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3825	ALB	12/17/2020	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.03	ALB	12/17/2020	Pass
Biuret	%	22241-2 Annex E	<0.3	0.11	AEC	12/16/2020	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	AEC	12/18/2020	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	3.8	AEC	12/17/2020	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex H	<0.5	<0.25	ALB	12/18/2020	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	SPT	12/17/2020	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	SPT	12/17/2020	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	SPT	12/17/2020	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	SPT	12/17/2020	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.04	SPT	12/17/2020	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	SPT	12/17/2020	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	SPT	12/17/2020	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	SPT	12/17/2020	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.15	SPT	12/17/2020	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	SPT	12/17/2020	Pass
Miscellaneous Secondary Unregulated Quality Standards							
Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	ALB	12/17/2020	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0893	ALB	12/17/2020	---

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Certification Approval 
Laboratory Director: Anthony J Scala

Date: 12/18/2020

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

Analytic ID	E2012052-001
Batch Number	312172020M
Train Number	GATX220523
Sample ID	DEF 32.9%
Date Sampled	12/17/2020
Date Received	12/21/2020
Report Date	12/24/2020

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: **32.9% DEF** Batch# **312172020M** Train # **GATX220523**

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	12/24/2020	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3826	AEC	12/22/2020	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.08	ALB	12/21/2020	Pass
Biuret	%	22241-2 Annex E	<0.3	0.20	AEC	12/21/2020	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	AEC	12/21/2020	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	AEC	12/21/2020	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex H	<0.5	<0.25	PEN	12/23/2020	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	12/23/2020	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	12/23/2020	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	PEN	12/23/2020	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	PEN	12/23/2020	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	PEN	12/23/2020	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	PEN	12/23/2020	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	12/23/2020	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	12/23/2020	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	12/23/2020	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	12/23/2020	Pass
Miscellaneous Secondary Unregulated Quality Standards							
Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	AEC	12/23/2020	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0898	AEC	12/22/2020	---

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Certification Approval



Laboratory Director: Anthony J Scala

Date: 12/24/2020

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

Analytic ID	E2012062-001
Batch Number	312222020M
Train Number	TILX265536
Sample ID	DEF 32.4%
Date Sampled	12/22/2020
Date Received	12/28/2020
Report Date	12/31/2020

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

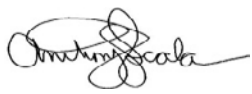
Client ID: 32.4% DEF Batch# 312222020M Train # TILX265536

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	12/30/2020	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3825	ALB	12/29/2020	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.02	ALB	12/30/2020	Pass
Biuret	%	22241-2 Annex E	<0.3	0.14	AEC	12/29/2020	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	AEC	12/30/2020	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	AEC	12/28/2020	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	PEN	12/29/2020	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	12/29/2020	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	12/29/2020	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	PEN	12/29/2020	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	PEN	12/29/2020	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.03	PEN	12/29/2020	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	PEN	12/29/2020	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	12/29/2020	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	12/29/2020	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.07	PEN	12/29/2020	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	12/29/2020	Pass
Miscellaneous Secondary Unregulated Quality Standards							
Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	ALB	12/29/2020	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0893	ALB	12/29/2020	---

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Certification Approval 
Laboratory Director: Anthony J Scala

Date: 12/24/2020

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

Analytic ID	E2012062-003
Batch Number	312242020M
Train Number	TILX265567
Sample ID	DEF 32.3%
Date Sampled	12/24/2020
Date Received	12/28/2020
Report Date	12/31/2020

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.3% DEF Batch# 312242020M Train # TILX265567

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	32.1	SPT	12/30/2020	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3823	ALB	12/29/2020	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.02	ALB	12/30/2020	Pass
Biuret	%	22241-2 Annex E	<0.3	0.15	AEC	12/29/2020	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	AEC	12/30/2020	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	AEC	12/28/2020	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	PEN	12/29/2020	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	12/29/2020	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	12/29/2020	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	PEN	12/29/2020	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	PEN	12/29/2020	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	PEN	12/29/2020	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	PEN	12/29/2020	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	12/29/2020	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	12/29/2020	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	12/29/2020	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	12/29/2020	Pass
Miscellaneous Secondary Unregulated Quality Standards							
Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	ALB	12/29/2020	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0888	ALB	12/29/2020	---

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Certification Approval



Laboratory Director: Anthony J Scala

Date: 12/31/2020

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

Enalytic ID	E2012076-001
Batch Number	312292020P
Train Number	GATX220449
Sample ID	DEF 32.4%
Date Sampled	12/29/2020
Date Received	12/31/2020
Report Date	1/6/2021

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: **32.4% DEF** Batch# **312292020P** Train # **GATX220449**

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	1/5/2021	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3826	ALB	1/4/2021	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.08	ALB	1/4/2021	Pass
Biuret	%	22241-2 Annex E	<0.3	0.15	ALB	1/4/2021	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	ALB	1/4/2021	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	6.2	ALB	1/4/2021	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	PEN	1/5/2021	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	1/5/2021	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	1/5/2021	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	PEN	1/5/2021	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	PEN	1/5/2021	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	PEN	1/5/2021	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	PEN	1/5/2021	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	1/5/2021	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	1/5/2021	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	1/5/2021	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	1/5/2021	Pass
Miscellaneous Secondary Unregulated Quality Standards							
Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	ALB	1/4/2021	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0893	ALB	1/4/2021	---

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Certification Approval



Laboratory Director: Anthony J Scala

Date: 1/6/2021

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

Enalytic ID	E2012076-002
Batch Number	312302020P
Train Number	GATX220485
Sample ID	DEF 32.4%
Date Sampled	12/30/2020
Date Received	12/31/2020
Report Date	1/6/2021

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: **32.4% DEF** Batch# **312302020P** Train # **GATX220485**

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	32.0	SPT	1/5/2021	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3822	ALB	1/4/2021	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.08	ALB	1/4/2021	Pass
Biuret	%	22241-2 Annex E	<0.3	0.16	AEC	1/4/2021	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	AEC	1/4/2021	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	AEC	1/4/2021	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	PEN	1/5/2021	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	1/5/2021	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	1/5/2021	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	PEN	1/5/2021	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	PEN	1/5/2021	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	PEN	1/5/2021	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	PEN	1/5/2021	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	1/5/2021	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	1/5/2021	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	PEN	1/5/2021	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.12	PEN	1/5/2021	Pass
Miscellaneous Secondary Unregulated Quality Standards							
Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	ALB	1/4/2021	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0888	ALB	1/4/2021	---

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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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Laboratory Director: Anthony J Scala

Date: 1/6/2021