

Client:	DEF Products, LLC
Contact	Sharon Stegmuller
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Email	defproducts@gmail.com
Phone	760 355 7997

Enalytic ID	E2010020-001
Batch Number	310062020L
Train Number	TILX265525
Sample ID	DEF 32.5%
Date Sampled	10/6/2020
Date Received	10/12/2020
Report Date	10/14/2020

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF Batch # 310062020L Train # TILX265525

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	32.2	SPT	10/14/2020	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3823	ALB	10/13/2020	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	<0.01	ALB	10/13/2020	Pass
Biuret	%	22241-2 Annex E	<0.3	0.11	ALB	10/14/2020	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	ALB	10/13/2020	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	ALB	10/13/2020	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	CLB	10/13/2020	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/13/2020	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/13/2020	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	10/13/2020	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	10/13/2020	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.10	CLB	10/13/2020	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	10/13/2020	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/13/2020	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/13/2020	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/13/2020	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/13/2020	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	CLB	10/13/2020	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0908	ALB	10/12/2020	---

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: 10/14/2020

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	E2010022-001
Batch Number	310122020L
Train Number	TILX264910
Sample ID	DEF 32.5%
Date Sampled	10/12/2020
Date Received	10/13/2020
Report Date	10/15/2020

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF Batch # 310122020L Train # TILX264910

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	10/14/2020	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3829	ALB	10/13/2020	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	<0.01	ALB	10/13/2020	Pass
Biuret	%	22241-2 Annex E	<0.3	0.16	ALB	10/14/2020	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	ALB	10/15/2020	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	ALB	10/13/2020	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	CLB	10/13/2020	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/13/2020	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/13/2020	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	10/13/2020	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	10/13/2020	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.07	CLB	10/13/2020	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	10/13/2020	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/13/2020	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/13/2020	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/13/2020	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/13/2020	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	CLB	10/13/2020	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0913	ALB	10/13/2020	---

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Certification Approval



Laboratory Director: Anthony J Scala

Date: 10/15/2020

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	E2010064-001
Batch Number	310272020M
Train Number	TILX265260
Sample ID	DEF 32.6%
Date Sampled	10/27/2020
Date Received	10/29/2020
Report Date	11/3/2020

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.6% DEF Batch # 310272020M Train # TILX265260

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	11/2/2020	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3828	AEC	10/30/2020	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.03	AEC	11/3/2020	Pass
Biuret	%	22241-2 Annex E	<0.3	0.15	AEC	10/30/2020	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	ALB	10/30/2020	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	AEC	10/30/2020	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	CLB	10/30/2020	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.10	CLB	10/30/2020	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/30/2020	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	10/30/2020	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	10/30/2020	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	10/30/2020	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	10/30/2020	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/30/2020	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/30/2020	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/30/2020	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	10/30/2020	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	AEC	10/30/2020	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0933	AEC	10/30/2020	---

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Certification Approval



Laboratory Director: Anthony J Scala

Date: 11/3/2020

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	E2011001-001
Batch Number	310302020M
Train Number	TILX265593
Sample ID	DEF 32.6%
Date Sampled	10/30/2020
Date Received	11/2/2020
Report Date	11/5/2020

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.6% DEF Batch # 310302020M Train # TILX265593

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	11/4/2020	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3830	AEC	11/2/2020	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.07	AEC	11/3/2020	Pass
Biuret	%	22241-2 Annex E	<0.3	0.17	AEC	11/3/2020	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	ALB	11/3/2020	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	AEC	11/3/2020	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	CLB	11/4/2020	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	11/4/2020	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	11/4/2020	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	11/4/2020	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	11/4/2020	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.07	CLB	11/4/2020	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	11/4/2020	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	11/4/2020	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	11/4/2020	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	11/4/2020	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	11/4/2020	Pass
Miscellaneous Secondary Unregulated Quality Standards							
Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	AEC	11/2/2020	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0918	AEC	11/2/2020	---

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Certification Approval 
Laboratory Director: Anthony J Scala

Date: 11/5/2020