

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	7/19/2022

Enalytic ID	E2207030-001
Batch Number	307052022P
Train Number	GATX223406
Sample ID	DEF 32.5%
Date Sampled	7/5/2022
Date Received	7/15/2022
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: **32.5% DEF** Batch # **307052022P** Train # **GATX223406**

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	32.8	SPT	7/18/2022	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3834	JHC	7/15/2022	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.06	MDC	7/15/2022	Pass
Biuret	%	22241-2 Annex E	<0.3	0.17	MDC	7/18/2022	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MDC	7/15/2022	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	JHC	7/15/2022	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	DSD	7/18/2022	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	DSD	7/18/2022	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.029	DSD	7/18/2022	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	DSD	7/18/2022	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	DSD	7/18/2022	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	DSD	7/18/2022	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	DSD	7/18/2022	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	DSD	7/18/2022	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	DSD	7/18/2022	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	DSD	7/18/2022	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	DSD	7/18/2022	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	JHC	7/15/2022	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0898	JHC	7/18/2022	---

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

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Contact	Sharon Stegmuller
Address	422 East Barioni Blvd Imperial, CA 02251
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Phone	760 355 7997
Report Date	7/20/2022

Enalytic ID	E2207034-001
Batch Number	307132022P
Train Number	TILX265606
Sample ID	DEF 32.5%
Date Sampled	7/13/2022
Date Received	7/18/2022
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: **32.5% DEF** Batch # **307132022P** Train # **TILX265606**

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	7/20/2022	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3828	JHC	7/19/2022	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.07	MDC	7/19/2022	Pass
Biuret	%	22241-2 Annex E	<0.3	0.18	MDC	7/20/2022	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MDC	7/18/2022	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	JHC	7/18/2022	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	DSD	7/18/2022	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	0.060	DSD	7/18/2022	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.030	DSD	7/18/2022	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	DSD	7/18/2022	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	DSD	7/18/2022	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	DSD	7/18/2022	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	DSD	7/18/2022	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	DSD	7/18/2022	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	DSD	7/18/2022	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	DSD	7/18/2022	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.050	DSD	7/18/2022	Pass

Miscellaneous Secondary Unregulated Quality Standards


Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	JHC	7/19/2022	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0888	JHC	7/19/2022	---

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Report Date	7/20/2022

Enalytic ID	E2207034-002
Batch Number	307142022M
Train Number	TILX200536
Sample ID	DEF 32.5%
Date Sampled	7/14/2022
Date Received	7/18/2022
ISO 17025	Certificate Number: AT-2956

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: **32.5% DEF** Batch # **307142022M** Train # **TILX200536**

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	7/20/2022	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3826	JHC	7/19/2022	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	0.07	MDC	7/19/2022	Pass
Biuret	%	22241-2 Annex E	<0.3	0.17	MDC	7/20/2022	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	MDC	7/18/2022	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	2.4	JHC	7/18/2022	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	DSD	7/18/2022	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	DSD	7/18/2022	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	0.039	DSD	7/18/2022	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	DSD	7/18/2022	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	DSD	7/18/2022	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	DSD	7/18/2022	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	DSD	7/18/2022	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	DSD	7/18/2022	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	DSD	7/18/2022	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	DSD	7/18/2022	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	DSD	7/18/2022	Pass

Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached) ³	Spectra	22241-2 Annex J	Control Match	Match	JHC	7/19/2022	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0888	JHC	7/19/2022	---

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