

Client:	DEF Products, LLC
Contact	Joe Servin, General Manager
Address	422 East Barioni Blvd Imperial, CA 02251
Email	<a href="mailto:defproducts@gmail.com">defproducts@gmail.com</a>
Phone	760 355 7997

Enalytic ID	E2004023-001
Batch Number	303252020M
Train Number	TILX265606
Sample ID	DEF 32.5%
Date Sampled	3/25/2020
Date Received	4/15/2020
Report Date	4/20/2020

## Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: **32.5% DEF Batch# 303252020M Train# TILX265606**

Test Parameter/Method	Units	Test Method (ISO) <sup>1</sup>	Acceptable Limit <sup>2</sup>	Results	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.4	<b>32.4</b>	BDK	4/20/2020	Pass
Refractive Index @ 20degC	N <sub>D</sub> <sup>20</sup>	22241-2 Annex C	1.3814-1.3843	<b>1.3828</b>	BDK	4/16/2020	Pass
Alkalinity as NH <sub>3</sub>	%	22241-2 Annex D	<0.2	<b>&lt;0.01</b>	BDK	4/16/2020	Pass
Biuret	%	22241-2 Annex E	<0.3	<b>0.18</b>	BDK	4/20/2020	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<b>&lt;1.0</b>	BDK	4/20/2020	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<b>&lt;2.0</b>	BDK	4/20/2020	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<b>&lt;0.25</b>	CLB	4/15/2020	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<b>&lt;0.05</b>	CLB	4/15/2020	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<b>&lt;0.05</b>	CLB	4/15/2020	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<b>&lt;0.02</b>	CLB	4/15/2020	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<b>&lt;0.02</b>	CLB	4/15/2020	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<b>&lt;0.02</b>	CLB	4/15/2020	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<b>&lt;0.02</b>	CLB	4/15/2020	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<b>&lt;0.05</b>	CLB	4/15/2020	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<b>&lt;0.05</b>	CLB	4/15/2020	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<b>&lt;0.05</b>	CLB	4/15/2020	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<b>&lt;0.05</b>	CLB	4/15/2020	Pass

### Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	<b>Match</b>	BDK	4/16/2020	---
Density @ 20degC	g/cm <sup>3</sup>	3675	Not Applicable	<b>1.0910</b>	BDK	4/16/2020	---

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: 4/20/2020

Client:	DEF Products, LLC
Contact	Joe Servin, General Manager
Address	422 East Barioni Blvd Imperial, CA 02251
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Phone	760 355 7997

Enalytic ID	E2004023-002
Batch Number	303312020P
Train Number	GATX220442
Sample ID	DEF 32.5%
Date Sampled	3/31/2020
Date Received	4/15/2020
Report Date	4/20/2020

## Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF Batch# 303312020P Train# GATX220442

Test Parameter/Method	Units	Test Method (ISO) <sup>1</sup>	Acceptable Limit <sup>2</sup>	Results	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Annex C	31.8-33.4	<b>32.4</b>	BDK	4/20/2020	Pass
Refractive Index @ 20degC	N <sub>D</sub> <sup>20</sup>	22241-2 Annex C	1.3814-1.3843	<b>1.3828</b>	BDK	4/16/2020	Pass
Alkalinity as NH <sub>3</sub>	%	22241-2 Annex D	<0.2	<b>&lt;0.01</b>	BDK	4/16/2020	Pass
Biuret	%	22241-2 Annex E	<0.3	<b>0.19</b>	BDK	4/20/2020	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<b>&lt;1.0</b>	BDK	4/20/2020	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<b>&lt;2.0</b>	BDK	4/20/2020	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<b>&lt;0.25</b>	CLB	4/15/2020	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<b>0.12</b>	CLB	4/15/2020	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<b>&lt;0.05</b>	CLB	4/15/2020	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<b>&lt;0.02</b>	CLB	4/15/2020	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<b>&lt;0.02</b>	CLB	4/15/2020	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<b>&lt;0.02</b>	CLB	4/15/2020	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<b>&lt;0.02</b>	CLB	4/15/2020	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<b>&lt;0.05</b>	CLB	4/15/2020	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<b>&lt;0.05</b>	CLB	4/15/2020	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<b>&lt;0.05</b>	CLB	4/15/2020	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<b>&lt;0.05</b>	CLB	4/15/2020	Pass

### Miscellaneous Secondary Unregulated Quality Standards

Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	<b>Match</b>	BDK	4/16/2020	---
Density @ 20degC	g/cm <sup>3</sup>	3675	Not Applicable	<b>1.0910</b>	BDK	4/16/2020	---

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