

Client:	DEF Products, LLC
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Enalytic ID	E2006050-001
Batch Number	306122020MII
Train Number	GATX220491
Sample ID	DEF 32.5%
Date Sampled	6/12/2020
Date Received	6/19/2020
Report Date	6/23/2020

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF Batch# 306122020MII Train# GATX220491

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	6/22/2020	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Annex C	1.3814-1.3843	1.3827	BDK	6/22/2020	Pass
Alkalinity as NH ₃	%	22241-2 Annex D	<0.2	<0.01	BDK	6/22/2020	Pass
Biuret	%	22241-2 Annex E	<0.3	0.18	BDK	6/22/2020	Pass
Aldehyde	mg/kg	22241-2 Annex F	<5.0	<1.0	BDK	6/22/2020	Pass
Insolubles	mg/kg	22241-2 Annex G	<20	<2.0	BDK	6/23/2020	Pass
Phosphate by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.25	CLB	6/22/2020	Pass
Calcium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	6/22/2020	Pass
Iron by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	6/22/2020	Pass
Copper by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	6/22/2020	Pass
Zinc by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	6/22/2020	Pass
Chromium by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	6/22/2020	Pass
Nickel by ICP-OES	mg/kg	22241-2 Annex I	<0.2	<0.02	CLB	6/22/2020	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	6/22/2020	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	6/22/2020	Pass
Sodium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	6/22/2020	Pass
Potassium by ICP-OES	mg/kg	22241-2 Annex I	<0.5	<0.05	CLB	6/22/2020	Pass
Miscellaneous Secondary Unregulated Quality Standards							
Identify by FTIR (attached)	Spectra	22241-2 Annex J	Control Match	Match	BDK	6/22/2020	---
Density @ 20degC	g/cm ³	3675	Not Applicable	1.0900	BDK	6/22/2020	---

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: 6/23/2020