

Client:	DEF Products, LLC
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Enalytic ID:	E1611039-001
Batch Number	DEF 32.5
Sample ID	DEF 32.5
Date Sampled	11/14/2016
Date Received	11/18/2016
Report Date	11/30/2016

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: DEF 32.5

Test Parameter/Method	Units	Test Method (ISO)	Acceptable Limit	Results	Chemist	Analysis Date	Pass/Fail
Urea Content	wt%	22241-2 Ann C	31.8-33.2	31.9	SPT	11/30/2016	Pass
Density @ 20degC	g/cm ³	3675/1285	1.0870-1.0930	1.0886	SC	11/30/2016	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Ann C	1.3814-1.3843	1.3820	AVM	11/23/2016	Pass
Alkalinity as NH ₃	%	22241-2 Ann D	<0.2	<0.2	SC	11/28/2016	Pass
Biuret	%	22241-2 Ann E	<0.3	<0.1	SC	11/29/2016	Pass
Aldehyde	mg/kg	22241-2 Ann F	<5	<5	SC	11/28/2016	Pass
Insolubles	mg/kg	22241-2 Ann G	<20	6.7	SPT	11/29/2016	Pass
Phosphate	mg/kg	22241-2 Ann H	<0.5	<0.25	AVM	11/23/2016	Pass
Calcium by ICP-OES	mg/kg	22241-2 Ann I	<0.5	0.30	SPT	11/30/2016	Pass
Iron by ICP-OES	mg/kg	22241-2 Ann I	<0.5	0.16	SPT	11/30/2016	Pass
Copper by ICP-OES	mg/kg	22241-2 Ann I	<0.2	<0.02	SPT	11/30/2016	Pass
Zinc by ICP-OES	mg/kg	22241-2 Ann I	<0.2	<0.02	SPT	11/30/2016	Pass
Chromium by ICP-OES	mg/kg	22241-2 Ann I	<0.2	<0.02	SPT	11/30/2016	Pass
Nickel by ICP-OES	mg/kg	22241-2 Ann I	<0.2	<0.02	SPT	11/30/2016	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Ann I	<0.5	0.05	SPT	11/30/2016	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Ann I	<0.5	<0.05	SPT	11/30/2016	Pass
Sodium by ICP-OES	mg/kg	22241-2 Ann I	<0.5	<0.05	SPT	11/30/2016	Pass
Potassium by ICP-OES	mg/kg	22241-2 Ann I	<0.5	0.31	SPT	11/30/2016	Pass
Identity by FTIR (attached)	Spectra	22241-2 Ann J	Match	Reference Match	SPT	11/30/2016	Pass

"The undersigned certifies that the value(s) reported have met the highest analytical quality control standards."

Certification Approval _____



Laboratory Director: Anthony J Scala

Enalytic FDA Reg. Number: 02-636-0096

Date: _____ 11/30/2016