

Client:	DEF Products, LLC/McNeece Bros.
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Analytic ID:	E1612042-001
Batch Number	TRC #312192016
Sample ID	32.5% DEF
Date Sampled	12/19/2016
Date Received	12/22/2016
Report Date	1/5/2017

Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.9% DEF TRC #312192016

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	31.7	SPT	1/5/2017	Pass
Density @ 20degC	g/cm ³	3675/1285	1.0870-1.0930	1.0873	AVM	1/3/2017	Pass
Refractive Index @ 20degC	N _D ²⁰	22241-2 Ann C	1.3814-1.3843	1.3819	AVM	1/3/2017	Pass
Alkalinity as NH ₃	%	22241-2 Ann D	<0.2	<0.2	SLC	12/23/2016	Pass
Biuret	%	22241-2 Ann E	<0.3	0.14	SLC	1/3/2017	Pass
Aldehyde	mg/kg	22241-2 Ann F	<5	<5	SLC	1/3/2017	Pass
Insolubles	mg/kg	22241-2 Ann G	<20	<2	SPT	1/4/2017	Pass
Phosphate	mg/kg	22241-2 Ann H	<0.5	<0.25	AVM	12/28/2016	Pass
Calcium by ICP-OES	mg/kg	22241-2 Ann I	<0.5	0.294	SPT	12/29/2016	Pass
Iron by ICP-OES	mg/kg	22241-2 Ann I	<0.5	<0.05	SPT	12/29/2016	Pass
Copper by ICP-OES	mg/kg	22241-2 Ann I	<0.2	<0.02	SPT	12/29/2016	Pass
Zinc by ICP-OES	mg/kg	22241-2 Ann I	<0.2	<0.02	SPT	12/29/2016	Pass
Chromium by ICP-OES	mg/kg	22241-2 Ann I	<0.2	<0.02	SPT	12/29/2016	Pass
Nickel by ICP-OES	mg/kg	22241-2 Ann I	<0.2	<0.02	SPT	12/29/2016	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Ann I	<0.5	<0.05	SPT	12/29/2016	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Ann I	<0.5	<0.05	SPT	12/29/2016	Pass
Sodium by ICP-OES	mg/kg	22241-2 Ann I	<0.5	<0.05	SPT	12/29/2016	Pass
Potassium by ICP-OES	mg/kg	22241-2 Ann I	<0.5	0.065	SPT	12/29/2016	Pass
Identity by FTIR (attached)	Spectra	22241-2 Ann J	Match	Reference Match	SPT	1/4/2017	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: _____ 1/5/2017