

Client:	DEF Products, LLC
Contact	Sharon Stegmuller
Address	422 East Barioni Blvd Imperial, CA 02251
Email	<a href="mailto:defproducts@gmail.com">defproducts@gmail.com</a>
Phone	760 427 4470

Analytic ID:	E1708012-001
Batch Number	Trace# 308032017
Sample ID	32.5% DEF
Date Sampled	8/3/2017
Date Received	8/8/2017
Report Date	8/15/2017

## Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF Trace# 308032017

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	32.2	SPT	8/9/2017	Pass
Density @ 20degC	g/cm <sup>3</sup>	3675/12185	1.0870-1.0930	1.0895	CLB	8/8/2017	Pass
Refractive Index @ 20degC	N <sub>D</sub> <sup>20</sup>	22241-2 Ann C	1.3814-1.3843	1.3825	CLB	8/8/2017	Pass
Alkalinity as NH <sub>3</sub>	%	22241-2 Ann D	<0.2	<0.2	CLB	8/8/2017	Pass
Biuret	%	22241-2 Ann E	<0.3	<0.3	CLB	8/9/2017	Pass
Aldehyde	mg/kg	22241-2 Ann F	<5	<5	CLB	8/11/2017	Pass
Insolubles	mg/kg	22241-2 Ann G	<20	5.1	CLB	8/11/2017	Pass
Phosphate	mg/kg	22241-2 Ann H	<0.5	<0.25	CLB	8/9/2017	Pass
Calcium by ICP-OES	mg/kg	22241-2 Ann I	<0.5	<0.05	BDK	8/14/2017	Pass
Iron by ICP-OES	mg/kg	22241-2 Ann I	<0.5	<0.05	BDK	8/14/2017	Pass
Copper by ICP-OES	mg/kg	22241-2 Ann I	<0.2	<0.02	BDK	8/14/2017	Pass
Zinc by ICP-OES	mg/kg	22241-2 Ann I	<0.2	<0.02	BDK	8/14/2017	Pass
Chromium by ICP-OES	mg/kg	22241-2 Ann I	<0.2	<0.02	BDK	8/14/2017	Pass
Nickel by ICP-OES	mg/kg	22241-2 Ann I	<0.2	<0.02	BDK	8/14/2017	Pass
Aluminum by ICP-OES	mg/kg	22241-2 Ann I	<0.5	<0.05	BDK	8/14/2017	Pass
Magnesium by ICP-OES	mg/kg	22241-2 Ann I	<0.5	<0.05	BDK	8/14/2017	Pass
Sodium by ICP-OES	mg/kg	22241-2 Ann I	<0.5	<0.05	BDK	8/14/2017	Pass
Potassium by ICP-OES	mg/kg	22241-2 Ann I	<0.5	0.064	BDK	8/14/2017	Pass
Identity by FTIR (attached)	Spectra	22241-2 Ann J	Match	Reference Match	BDK	8/14/2017	Pass

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



Certification Approval \_\_\_\_\_

Laboratory Director: Anthony J Scala

Analytic FDA Reg. Number: 02-636-0096

Date: 8/15/2017

# analytic

Analytical Testing Laboratories

6034 Corporate Drive, East Syracuse, NY 13057  
 Phone: 315.437.0255 Fax: 315.437.1209

# Chain of Custody Record

Quote Number:

Client: DEF Products, LLC		Project #/ Project Name: ISO 22241 DEF Testing		Number of Containers										Remarks	
Client Contact: Sharon Stegmuller		Location (City/State): 422 E. Barioni Blvd., Imperial CA												Product Testing Certificate of Analysis	
Phone #: (760) 427-4479		Lab Internal Use Only: E1708012													
Date: 8/3/2017		Grab or Comp: Comp													
Sample ID: Trace # 308032017		Matrix: Liquid													
Time: N/A		Preservative: None													
Sample bottle: HDPE		Size: 500 ml													
Parameter and Method		Type												Name of Courier	
1 Urea Content		HDPE												UPS 3 Day Select	
2 Refractive Index @ 20degC														Company: DEF Products, LLC	
3 Density @ 20degC														Relinquished by:(sign)	
4 Alkalinity (as NH3)														Date	
5 Biuret														DEF Products, LLC	
6 Aldehydes														Relinquished by:(sign)	
7 Insolubles														Date	
8 Phosphate														Time	
9 Total Metals: Al,Ca,Cr,Cu,Fe,K,Mg,Ni,Na,Zn.														Relinquished by:(sign)	
10 FTIR														Date	
														Time	
														Time	
														Rec'd for Lab by:	
														8/8/17	
														11:4 am	
														C. Scala	

Search results for: E1708012-001  
Date: Wed Aug 09 14:45:44 2017 (GMT-04:00)  
Search algorithm: Search Expert  
Regions searched: 2600.00-450.00

