

|         |                                                                  |
|---------|------------------------------------------------------------------|
| Client: | DEF Products, LLC                                                |
| Contact | Sharon Stegmuller                                                |
| Address | 422 East Barioni Blvd<br>Imperial, CA 02251                      |
| Email   | <a href="mailto:defproducts@gmail.com">defproducts@gmail.com</a> |
| Phone   | 760 355 7997                                                     |

|               |              |
|---------------|--------------|
| Enalytic ID:  | E1805017-001 |
| Batch Number  | 305032018    |
| Sample ID     | DEF 32.8     |
| Date Sampled  | 5/3/2018     |
| Date Received | 5/7/2018     |
| Report Date   | 5/11/2018    |

## Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.8% DEF Batch# 305032018

| Test Parameter/Method         | Units                        | Test Method (ISO) | Acceptable Limit | Results         | Chemist | Analysis Date | Pass/Fail |
|-------------------------------|------------------------------|-------------------|------------------|-----------------|---------|---------------|-----------|
| Urea Content                  | wt%                          | 22241-2 Annex C   | 31.8-33.2        | 32.3            | SPT     | 5/10/2018     | Pass      |
| Density @ 20degC              | g/cm <sup>3</sup>            | 3675              | 1.0870-1.0930    | 1.0915          | CLB     | 5/8/2018      | Pass      |
| Refractive Index @ 20degC     | N <sub>D</sub> <sup>20</sup> | 22241-2 Annex C   | 1.3814-1.3843    | 1.3827          | CLB     | 5/10/2018     | Pass      |
| Alkalinity as NH <sub>3</sub> | %                            | 22241-2 Annex D   | <0.2             | <0.01           | CLB     | 5/10/2018     | Pass      |
| Biuret                        | %                            | 22241-2 Annex E   | <0.3             | 0.26            | CLB     | 5/10/2018     | Pass      |
| Aldehyde                      | mg/kg                        | 22241-2 Annex F   | <5               | <1.0            | CLB     | 5/9/2018      | Pass      |
| Insolubles                    | mg/kg                        | 22241-2 Annex G   | <20              | <2.0            | CLB     | 5/9/2018      | Pass      |
| Phosphate                     | mg/kg                        | 22241-2 Annex H   | <0.5             | <0.25           | CLB     | 5/9/2018      | Pass      |
| Calcium by ICP-OES            | mg/kg                        | 22241-2 Annex I   | <0.5             | 0.17            | SUB     | 5/10/2018     | Pass      |
| Iron by ICP-OES               | mg/kg                        | 22241-2 Annex I   | <0.5             | <0.05           | BDK     | 5/8/2018      | Pass      |
| Copper by ICP-OES             | mg/kg                        | 22241-2 Annex I   | <0.2             | 0.02            | BDK     | 5/8/2018      | Pass      |
| Zinc by ICP-OES               | mg/kg                        | 22241-2 Annex I   | <0.2             | <0.02           | BDK     | 5/8/2018      | Pass      |
| Chromium by ICP-OES           | mg/kg                        | 22241-2 Annex I   | <0.2             | 0.07            | BDK     | 5/8/2018      | Pass      |
| Nickel by ICP-OES             | mg/kg                        | 22241-2 Annex I   | <0.2             | 0.06            | BDK     | 5/8/2018      | Pass      |
| Aluminum by ICP-OES           | mg/kg                        | 22241-2 Annex I   | <0.5             | <0.05           | BDK     | 5/8/2018      | Pass      |
| Magnesium by ICP-OES          | mg/kg                        | 22241-2 Annex I   | <0.5             | <0.05           | BDK     | 5/8/2018      | Pass      |
| Sodium by ICP-OES             | mg/kg                        | 22241-2 Annex I   | <0.5             | <0.05           | BDK     | 5/8/2018      | Pass      |
| Potassium by ICP-OES          | mg/kg                        | 22241-2 Annex I   | <0.5             | <0.05           | BDK     | 5/8/2018      | Pass      |
| Identity by FTIR (attached)   | Spectra                      | 22241-2 Annex J   | Match            | Reference Match | BDK     | 5/10/2018     | Pass      |

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.

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

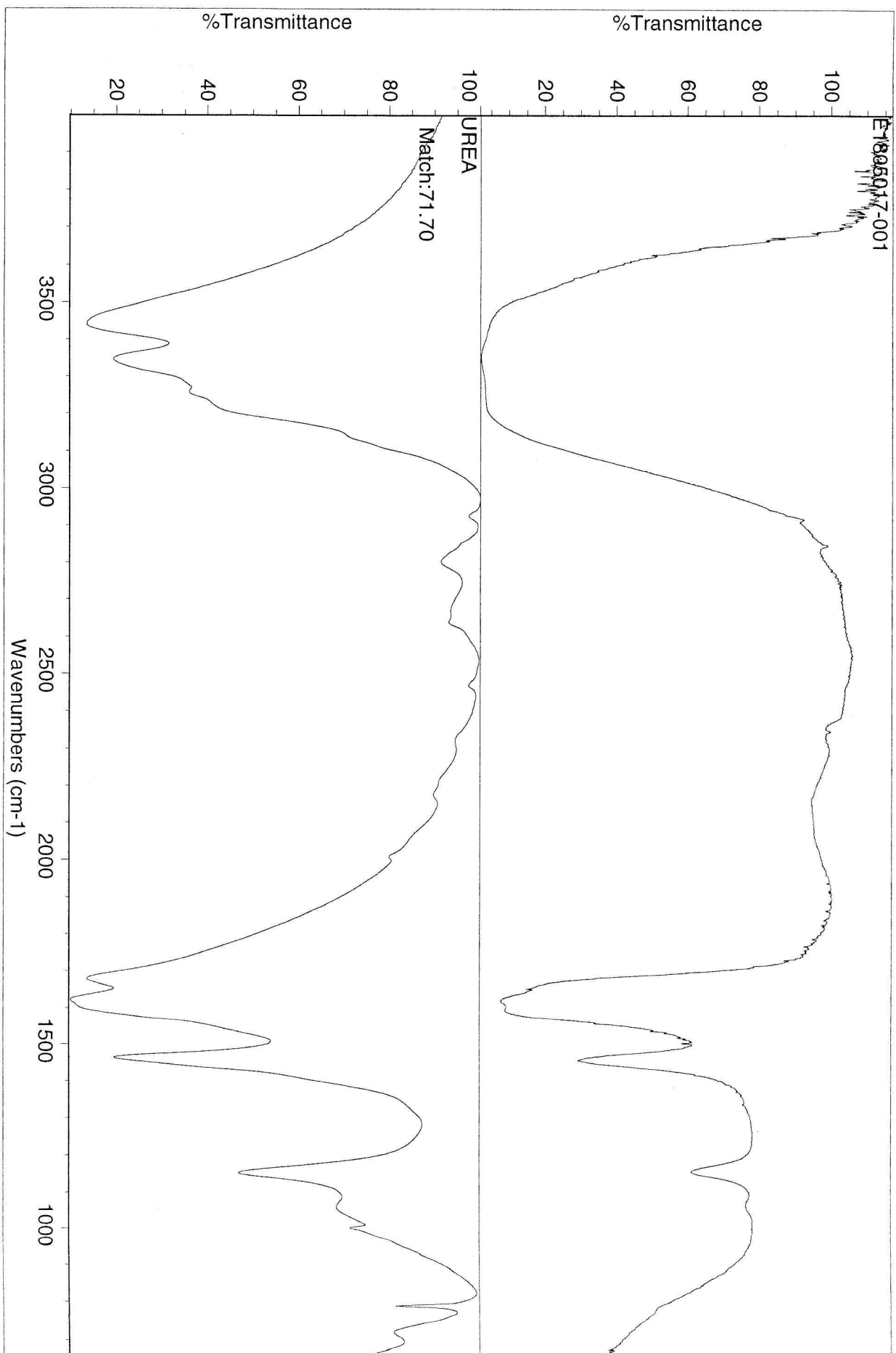
Certification Approval \_\_\_\_\_

Laboratory Director: Anthony J Scala

Enalytic FDA Reg. Number: 02-636-0096

Date: 5/11/2018

Search results for: E1805017-001  
Date: Thu May 10 09:42:27 2018 (GMT-04:00)  
Search algorithm: Search Expert  
Regions searched: 2600.00-450.00





|         |                                                                  |
|---------|------------------------------------------------------------------|
| Client: | DEF Products, LLC                                                |
| Contact | Sharon Stegmuller                                                |
| Address | 422 East Barioni Blvd<br>Imperial, CA 02251                      |
| Email   | <a href="mailto:defproducts@gmail.com">defproducts@gmail.com</a> |
| Phone   | 760 355 7997                                                     |

|               |              |
|---------------|--------------|
| Enalytic ID:  | E1805017-002 |
| Batch Number  | 305042018    |
| Sample ID     | DEF 32.7     |
| Date Sampled  | 5/4/2018     |
| Date Received | 5/7/2018     |
| Report Date   | 5/11/2018    |

## Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.7% DEF Batch# 305042018

| Test Parameter/Method         | Units                        | Test Method (ISO) | Acceptable Limit | Results         | Chemist | Analysis Date | Pass/Fail |
|-------------------------------|------------------------------|-------------------|------------------|-----------------|---------|---------------|-----------|
| Urea Content                  | wt%                          | 22241-2 Annex C   | 31.8-33.2        | 32.8            | SPT     | 5/10/2018     | Pass      |
| Density @ 20degC              | g/cm <sup>3</sup>            | 3675              | 1.0870-1.0930    | 1.0920          | CLB     | 5/8/2018      | Pass      |
| Refractive Index @ 20degC     | N <sub>D</sub> <sup>20</sup> | 22241-2 Annex C   | 1.3814-1.3843    | 1.3831          | CLB     | 5/10/2018     | Pass      |
| Alkalinity as NH <sub>3</sub> | %                            | 22241-2 Annex D   | <0.2             | <0.01           | CLB     | 5/10/2018     | Pass      |
| Biuret                        | %                            | 22241-2 Annex E   | <0.3             | <0.1            | CLB     | 5/10/2018     | Pass      |
| Aldehyde                      | mg/kg                        | 22241-2 Annex F   | <5               | <1.0            | CLB     | 5/9/2018      | Pass      |
| Insolubles                    | mg/kg                        | 22241-2 Annex G   | <20              | 2.0             | CLB     | 5/9/2018      | Pass      |
| Phosphate                     | mg/kg                        | 22241-2 Annex H   | <0.5             | <0.25           | CLB     | 5/9/2018      | Pass      |
| Calcium by ICP-OES            | mg/kg                        | 22241-2 Annex I   | <0.5             | 0.50            | SUB     | 5/10/2018     | Pass      |
| Iron by ICP-OES               | mg/kg                        | 22241-2 Annex I   | <0.5             | <0.05           | BDK     | 5/8/2018      | Pass      |
| Copper by ICP-OES             | mg/kg                        | 22241-2 Annex I   | <0.2             | <0.02           | BDK     | 5/8/2018      | Pass      |
| Zinc by ICP-OES               | mg/kg                        | 22241-2 Annex I   | <0.2             | <0.02           | BDK     | 5/8/2018      | Pass      |
| Chromium by ICP-OES           | mg/kg                        | 22241-2 Annex I   | <0.2             | <0.02           | BDK     | 5/8/2018      | Pass      |
| Nickel by ICP-OES             | mg/kg                        | 22241-2 Annex I   | <0.2             | <0.02           | BDK     | 5/8/2018      | Pass      |
| Aluminum by ICP-OES           | mg/kg                        | 22241-2 Annex I   | <0.5             | <0.05           | BDK     | 5/8/2018      | Pass      |
| Magnesium by ICP-OES          | mg/kg                        | 22241-2 Annex I   | <0.5             | <0.05           | BDK     | 5/8/2018      | Pass      |
| Sodium by ICP-OES             | mg/kg                        | 22241-2 Annex I   | <0.5             | <0.05           | BDK     | 5/8/2018      | Pass      |
| Potassium by ICP-OES          | mg/kg                        | 22241-2 Annex I   | <0.5             | 0.31            | BDK     | 5/8/2018      | Pass      |
| Identity by FTIR (attached)   | Spectra                      | 22241-2 Annex J   | Match            | Reference Match | BDK     | 5/10/2018     | Pass      |

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.

Note 3: The Calcium value falls within 10% of the Laboratory Q.C., which extends the acceptable value to 0.55 mg/kg.

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

Certification Approval

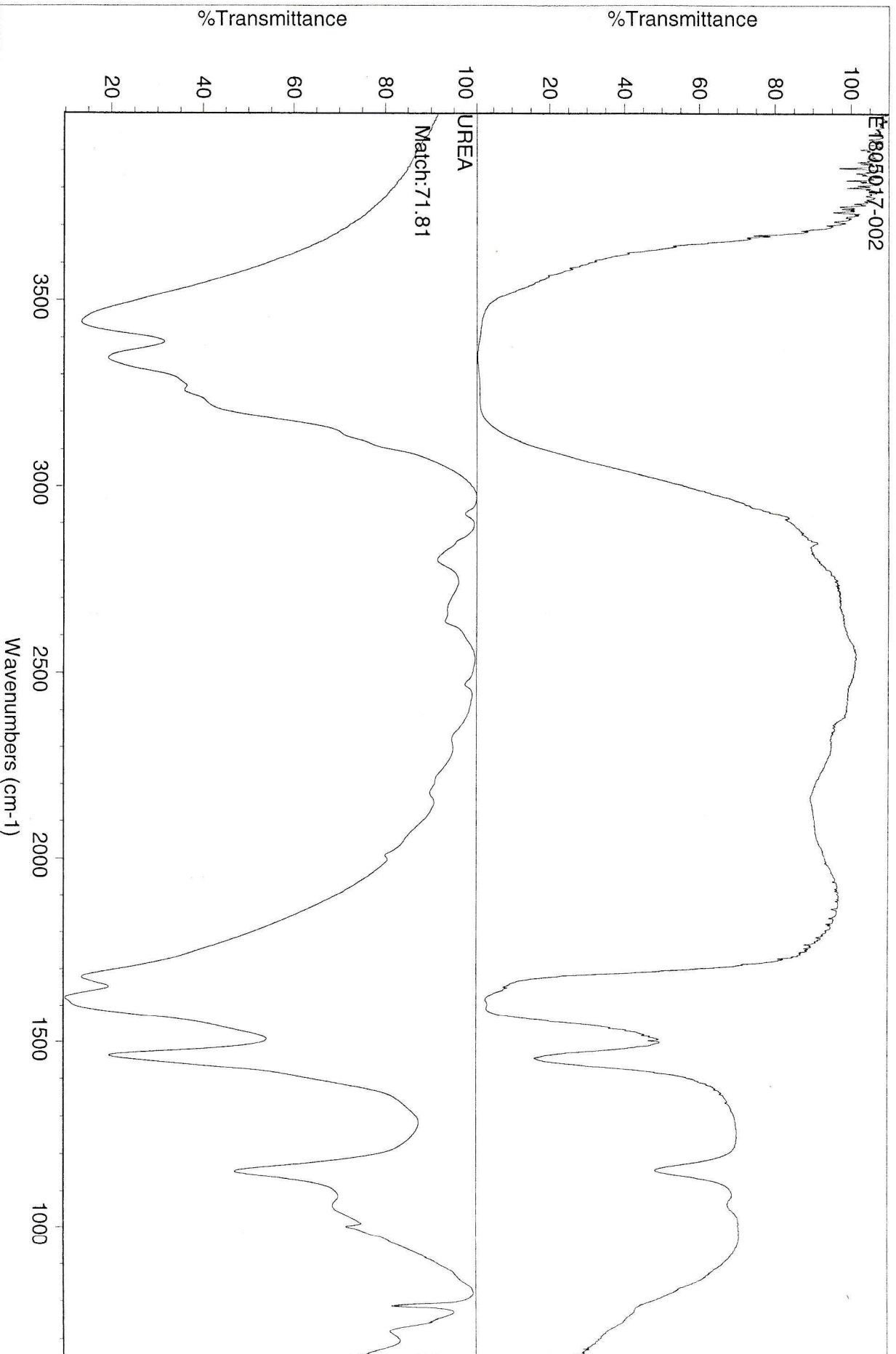


Laboratory Director: Anthony J Scala

Enalytic FDA Reg. Number: 02-636-0096

Date: 5/11/2018

Search results for: E1805017-002  
Date: Thu May 10 09:46:36 2018 (GMT-04:00)  
Search algorithm: Search Expert  
Regions searched: 2600.00-450.00



# Chain of Custody Record

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

Quote Number:

| Client: DEF Products, LLC                              |  |                |                                   | Project #: Project Name |              |                       |                            |   |   |   |   |   |   | Remarks                                 |   |   |                     |   |   |    |  |  |  |  |  |  |
|--------------------------------------------------------|--|----------------|-----------------------------------|-------------------------|--------------|-----------------------|----------------------------|---|---|---|---|---|---|-----------------------------------------|---|---|---------------------|---|---|----|--|--|--|--|--|--|
| Client Contact:                                        |  | Phone #        | Location (City/State)             |                         |              |                       |                            |   |   |   |   |   |   | Product Testing Certificate of Analysis |   |   |                     |   |   |    |  |  |  |  |  |  |
| Sharon Stegmuller                                      |  | (760) 355-7997 | 422 E. Barioni Blvd., Imperial CA |                         |              |                       |                            |   |   |   |   |   |   |                                         |   |   |                     |   |   |    |  |  |  |  |  |  |
| Sample ID                                              |  | Date           | Time                              | Matrix                  | Grab or Comp | Lab Internal Use Only | Number of Containers       |   |   |   | 1 | 2 | 3 | 4                                       | 5 | 6 | 7                   | 8 | 9 | 10 |  |  |  |  |  |  |
| Batch # 305032018                                      |  | 5/3/2018       | N/A                               | Liquid                  | Comp         | -001                  | 1                          | X | X | X | X | X | X | X                                       | X | X | X                   | X | X | X  |  |  |  |  |  |  |
| PERCENT DEF 32.8 %                                     |  |                |                                   |                         |              |                       |                            |   |   |   |   |   |   |                                         |   |   |                     |   |   |    |  |  |  |  |  |  |
| Trian # AEX11804                                       |  |                |                                   |                         |              |                       |                            |   |   |   |   |   |   |                                         |   |   |                     |   |   |    |  |  |  |  |  |  |
| Batch # 305042018                                      |  | 5/4/2018       | N/A                               | Liquid                  | Comp         | -002                  | 1                          | X | X | X | X | X | X | X                                       | X | X | X                   | X | X | X  |  |  |  |  |  |  |
| PERCENT DEF 32.7 %                                     |  |                |                                   |                         |              |                       |                            |   |   |   |   |   |   |                                         |   |   |                     |   |   |    |  |  |  |  |  |  |
| Trian # AEX11804-MWCX462768                            |  |                |                                   |                         |              |                       |                            |   |   |   |   |   |   |                                         |   |   |                     |   |   |    |  |  |  |  |  |  |
|                                                        |  |                |                                   |                         |              |                       |                            |   |   |   |   |   |   |                                         |   |   |                     |   |   |    |  |  |  |  |  |  |
|                                                        |  |                |                                   |                         |              |                       |                            |   |   |   |   |   |   |                                         |   |   |                     |   |   |    |  |  |  |  |  |  |
|                                                        |  |                |                                   |                         |              |                       |                            |   |   |   |   |   |   |                                         |   |   |                     |   |   |    |  |  |  |  |  |  |
|                                                        |  |                |                                   |                         |              |                       |                            |   |   |   |   |   |   |                                         |   |   |                     |   |   |    |  |  |  |  |  |  |
|                                                        |  |                |                                   |                         |              |                       |                            |   |   |   |   |   |   |                                         |   |   |                     |   |   |    |  |  |  |  |  |  |
|                                                        |  |                |                                   |                         |              |                       |                            |   |   |   |   |   |   |                                         |   |   |                     |   |   |    |  |  |  |  |  |  |
| Parameter and Method                                   |  |                | Sample bottle:                    | Type                    | Size         | Preservative          | Sampled by (Print)         |   |   |   |   |   |   |                                         |   |   | Name of Courier     |   |   |    |  |  |  |  |  |  |
| 1 Urea Content                                         |  |                |                                   | HDPE                    | 500 ml       | None                  | Company: DEF Products, LLC |   |   |   |   |   |   |                                         |   |   | UPS Next Day Air    |   |   |    |  |  |  |  |  |  |
| 2 Refractive Index @ 20degC                            |  |                |                                   |                         |              |                       | Relinquished by: (sign)    |   |   |   |   |   |   |                                         |   |   | Received by: (sign) |   |   |    |  |  |  |  |  |  |
| 3 Density @ 20degC                                     |  |                |                                   |                         |              |                       | DEF Products, LLC          |   |   |   |   |   |   |                                         |   |   |                     |   |   |    |  |  |  |  |  |  |
| 4 Alkalinity (as NH3)                                  |  |                |                                   |                         |              |                       | Relinquished by: (sign)    |   |   |   |   |   |   |                                         |   |   | Received by: (sign) |   |   |    |  |  |  |  |  |  |
| 5 Biuret                                               |  |                |                                   |                         |              |                       | Date                       |   |   |   |   |   |   |                                         |   |   | Time                |   |   |    |  |  |  |  |  |  |
| 6 Aldehydes                                            |  |                |                                   |                         |              |                       | Date                       |   |   |   |   |   |   |                                         |   |   | Time                |   |   |    |  |  |  |  |  |  |
| 7 Insolubles                                           |  |                |                                   |                         |              |                       | Date                       |   |   |   |   |   |   |                                         |   |   | Time                |   |   |    |  |  |  |  |  |  |
| 8 Phosphate                                            |  |                |                                   |                         |              |                       | Date                       |   |   |   |   |   |   |                                         |   |   | Time                |   |   |    |  |  |  |  |  |  |
| 9 Total Metals: Al, Ca, Cr, Cu, Fe, K, Mg, Ni, Na, Zn. |  |                |                                   |                         |              |                       | Date                       |   |   |   |   |   |   |                                         |   |   | Time                |   |   |    |  |  |  |  |  |  |
| 10 FTIR                                                |  |                |                                   |                         |              |                       | Date                       |   |   |   |   |   |   |                                         |   |   | Time                |   |   |    |  |  |  |  |  |  |



|         |                                                                  |
|---------|------------------------------------------------------------------|
| Client: | DEF Products, LLC                                                |
| Contact | Sharon Stegmuller                                                |
| Address | 422 East Barioni Blvd<br>Imperial, CA 02251                      |
| Email   | <a href="mailto:defproducts@gmail.com">defproducts@gmail.com</a> |
| Phone   | 760 355 7997                                                     |

|               |              |
|---------------|--------------|
| Enalytic ID:  | E1805079-001 |
| Batch Number  | 305232018    |
| Sample ID     | DEF 32.7     |
| Date Sampled  | 5/23/2018    |
| Date Received | 5/30/2018    |
| Report Date   | 6/4/2018     |

## Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.7% DEF Batch# 305232018

| Test Parameter/Method         | Units                        | Test Method (ISO) | Acceptable Limit | Results         | Chemist | Analysis Date | Pass/Fail |
|-------------------------------|------------------------------|-------------------|------------------|-----------------|---------|---------------|-----------|
| Urea Content                  | wt%                          | 22241-2 Annex C   | 31.8-33.2        | 32.3            | SPT     | 6/4/2018      | Pass      |
| Density @ 20degC              | g/cm <sup>3</sup>            | 3675              | 1.0870-1.0930    | 1.0905          | CLB     | 5/30/2018     | Pass      |
| Refractive Index @ 20degC     | N <sub>D</sub> <sup>20</sup> | 22241-2 Annex C   | 1.3814-1.3843    | 1.3827          | CLB     | 6/1/2018      | Pass      |
| Alkalinity as NH <sub>3</sub> | %                            | 22241-2 Annex D   | <0.2             | <0.01           | CLB     | 6/1/2018      | Pass      |
| Biuret                        | %                            | 22241-2 Annex E   | <0.3             | 0.25            | CLB     | 6/1/2018      | Pass      |
| Aldehyde                      | mg/kg                        | 22241-2 Annex F   | <5               | 3.0             | CLB     | 5/31/2018     | Pass      |
| Insolubles                    | mg/kg                        | 22241-2 Annex G   | <20              | <2.0            | CLB     | 5/31/2018     | Pass      |
| Phosphate                     | mg/kg                        | 22241-2 Annex H   | <0.5             | <0.25           | CLB     | 5/31/2018     | Pass      |
| Calcium by ICP-OES            | mg/kg                        | 22241-2 Annex I   | <0.5             | <0.05           | BDK     | 6/1/2018      | Pass      |
| Iron by ICP-OES               | mg/kg                        | 22241-2 Annex I   | <0.5             | <0.05           | BDK     | 6/1/2018      | Pass      |
| Copper by ICP-OES             | mg/kg                        | 22241-2 Annex I   | <0.2             | <0.02           | BDK     | 6/1/2018      | Pass      |
| Zinc by ICP-OES               | mg/kg                        | 22241-2 Annex I   | <0.2             | <0.02           | BDK     | 6/1/2018      | Pass      |
| Chromium by ICP-OES           | mg/kg                        | 22241-2 Annex I   | <0.2             | <0.02           | BDK     | 6/1/2018      | Pass      |
| Nickel by ICP-OES             | mg/kg                        | 22241-2 Annex I   | <0.2             | <0.02           | BDK     | 6/1/2018      | Pass      |
| Aluminum by ICP-OES           | mg/kg                        | 22241-2 Annex I   | <0.5             | <0.05           | BDK     | 6/1/2018      | Pass      |
| Magnesium by ICP-OES          | mg/kg                        | 22241-2 Annex I   | <0.5             | <0.05           | BDK     | 6/1/2018      | Pass      |
| Sodium by ICP-OES             | mg/kg                        | 22241-2 Annex I   | <0.5             | 0.09            | BDK     | 6/1/2018      | Pass      |
| Potassium by ICP-OES          | mg/kg                        | 22241-2 Annex I   | <0.5             | 0.08            | BDK     | 6/1/2018      | Pass      |
| Identity by FTIR (attached)   | Spectra                      | 22241-2 Annex J   | Match            | Reference Match | BDK     | 6/4/2018      | Pass      |

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.

Note 3: The Calcium value falls within 10% of the Laboratory Q.C., which extends the acceptable value to 0.55 mg/kg.

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

Certification Approval



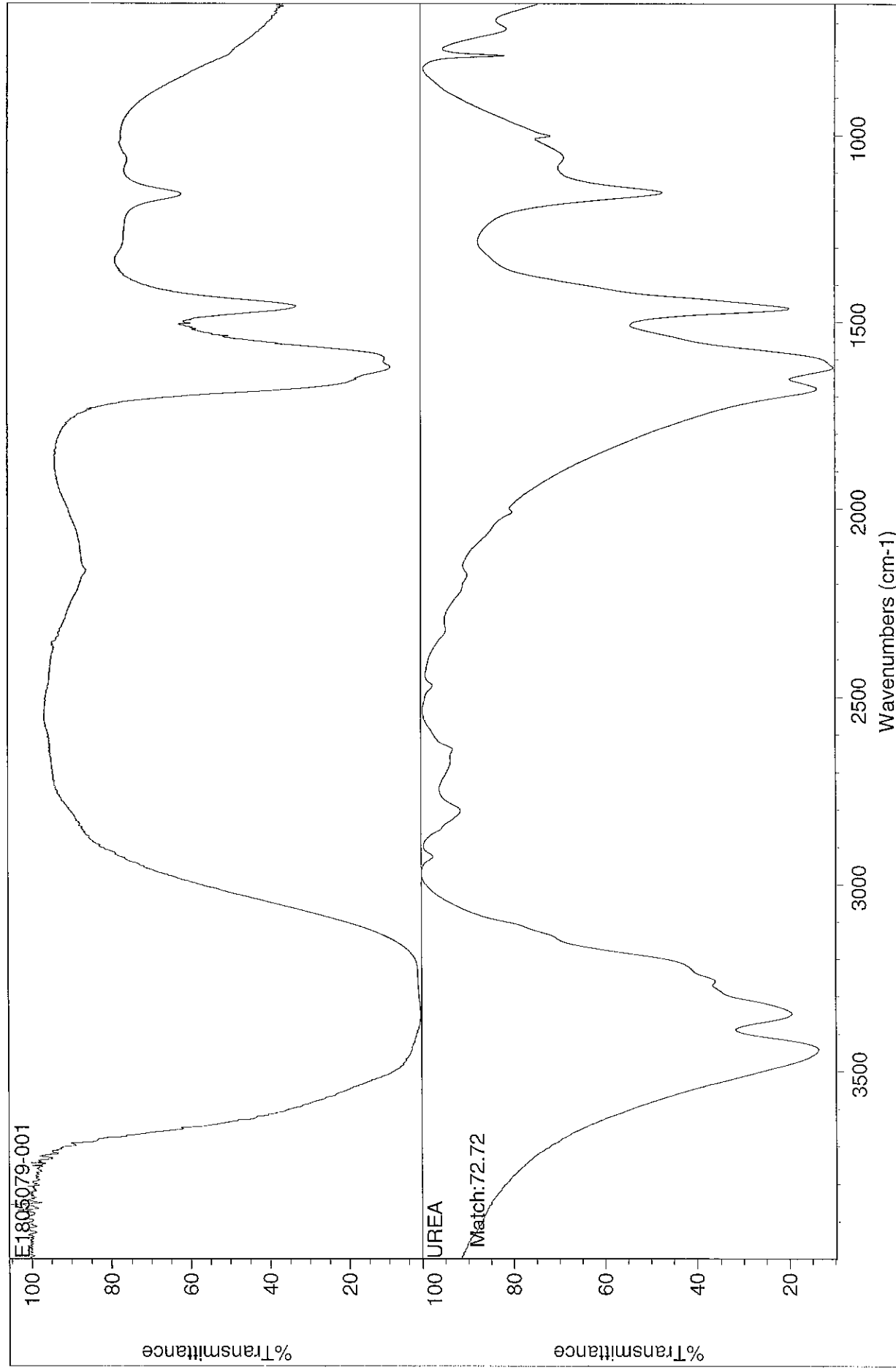
Laboratory Director: Anthony J Scala

Enalytic FDA Reg. Number: 02-636-0096

Date:

6/4/2018

Search results for: E1805079-001  
Date: Mon Jun 04 12:09:08 2018 (GMT-04:00)  
Search algorithm: Search Expert  
Regions searched: 2600.00-450.00







|         |                                                                  |
|---------|------------------------------------------------------------------|
| Client: | DEF Products, LLC                                                |
| Contact | Sharon Stegmuller                                                |
| Address | 422 East Barioni Blvd<br>Imperial, CA 02251                      |
| Email   | <a href="mailto:defproducts@gmail.com">defproducts@gmail.com</a> |
| Phone   | 760 355 7997                                                     |

|               |              |
|---------------|--------------|
| Enalytic ID   | E1806016-001 |
| Batch Number  | 305302018    |
| Train Number  | GATX223412   |
| Sample ID     | DEF 32.5     |
| Date Sampled  | 5/30/2018    |
| Date Received | 6/6/2018     |
| Report Date   | 6/11/2018    |

## Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF Batch# 305302018 Train# GATX223412

| Test Parameter/Method         | Units                        | Test Method (ISO) | Acceptable Limit | Results         | Chemist | Analysis Date | Pass/Fail |
|-------------------------------|------------------------------|-------------------|------------------|-----------------|---------|---------------|-----------|
| Urea Content                  | wt%                          | 22241-2 Annex C   | 31.8-33.2        | 32.3            | SPT     | 6/11/2018     | Pass      |
| Density @ 20degC              | g/cm <sup>3</sup>            | 3675              | 1.0870-1.0930    | 1.0895          | SPT     | 6/11/2018     | Pass      |
| Refractive Index @ 20degC     | N <sub>D</sub> <sup>20</sup> | 22241-2 Annex C   | 1.3814-1.3843    | 1.3825          | CND     | 6/8/2018      | Pass      |
| Alkalinity as NH <sub>3</sub> | %                            | 22241-2 Annex D   | <0.2             | 0.03            | CLB     | 6/11/2018     | Pass      |
| Biuret                        | %                            | 22241-2 Annex E   | <0.3             | 0.16            | CLB     | 6/11/2018     | Pass      |
| Aldehyde                      | mg/kg                        | 22241-2 Annex F   | <5               | <1.0            | CLB     | 6/8/2018      | Pass      |
| Insolubles                    | mg/kg                        | 22241-2 Annex G   | <20              | <2.0            | CND     | 6/8/2018      | Pass      |
| Phosphate                     | mg/kg                        | 22241-2 Annex H   | <0.5             | <0.25           | CLB     | 6/8/2018      | Pass      |
| Calcium by ICP-OES            | mg/kg                        | 22241-2 Annex I   | <0.5             | 0.37            | BDK     | 6/7/2018      | Pass      |
| Iron by ICP-OES               | mg/kg                        | 22241-2 Annex I   | <0.5             | <0.05           | BDK     | 6/7/2018      | Pass      |
| Copper by ICP-OES             | mg/kg                        | 22241-2 Annex I   | <0.2             | <0.02           | BDK     | 6/7/2018      | Pass      |
| Zinc by ICP-OES               | mg/kg                        | 22241-2 Annex I   | <0.2             | 0.06            | BDK     | 6/7/2018      | Pass      |
| Chromium by ICP-OES           | mg/kg                        | 22241-2 Annex I   | <0.2             | 0.04            | BDK     | 6/7/2018      | Pass      |
| Nickel by ICP-OES             | mg/kg                        | 22241-2 Annex I   | <0.2             | <0.02           | BDK     | 6/7/2018      | Pass      |
| Aluminum by ICP-OES           | mg/kg                        | 22241-2 Annex I   | <0.5             | <0.05           | BDK     | 6/7/2018      | Pass      |
| Magnesium by ICP-OES          | mg/kg                        | 22241-2 Annex I   | <0.5             | <0.05           | BDK     | 6/7/2018      | Pass      |
| Sodium by ICP-OES             | mg/kg                        | 22241-2 Annex I   | <0.5             | 0.11            | BDK     | 6/7/2018      | Pass      |
| Potassium by ICP-OES          | mg/kg                        | 22241-2 Annex I   | <0.5             | 0.13            | BDK     | 6/7/2018      | Pass      |
| Identity by FTIR (attached)   | Spectra                      | 22241-2 Annex J   | Match            | Reference Match | BDK     | 6/11/2018     | Pass      |

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.

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



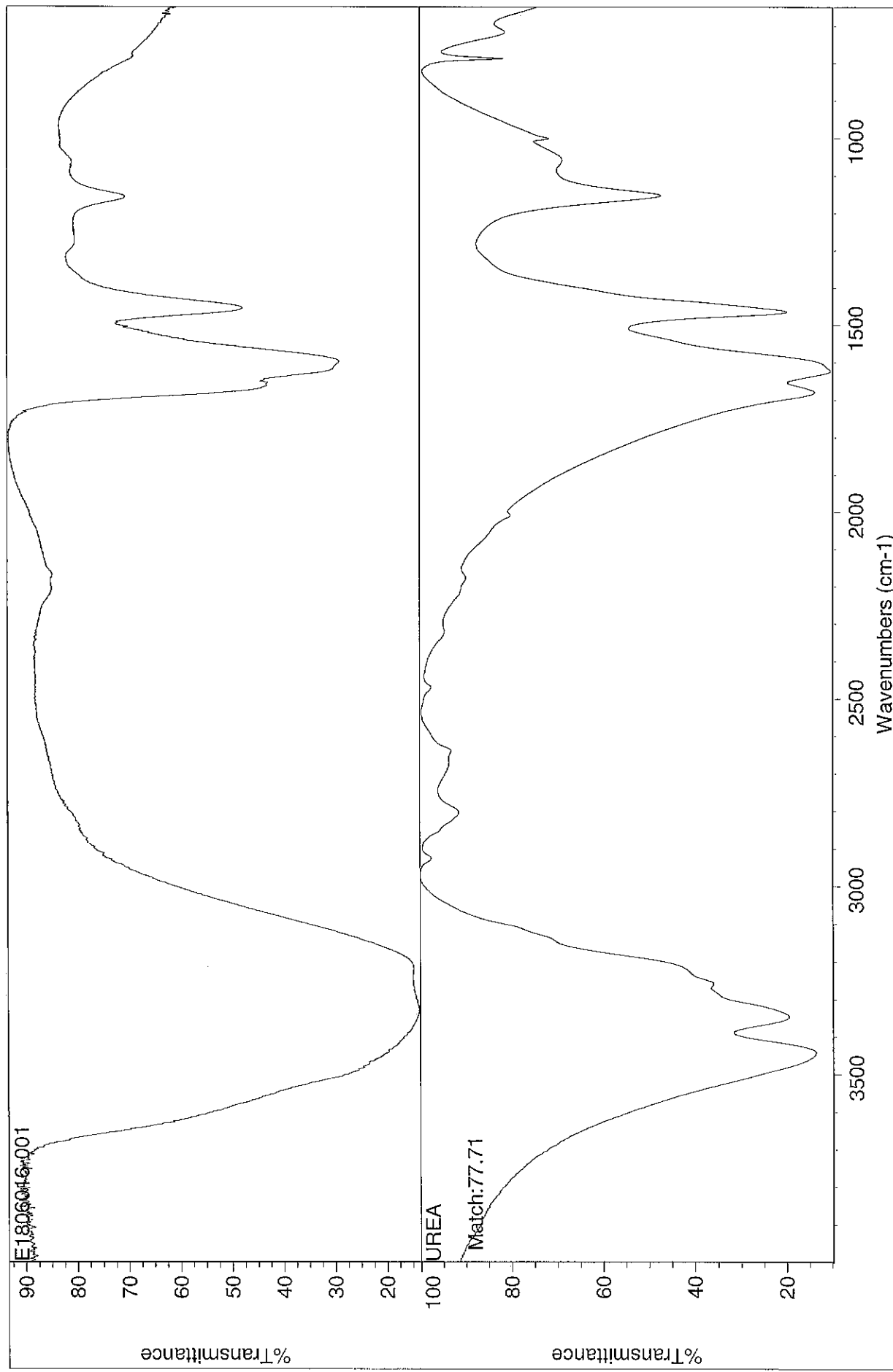
Certification Approval \_\_\_\_\_

Laboratory Director: Anthony J Scala

Analytic FDA Reg. Number: 02-636-0096

Date: 6/11/2018

Search results for: E1806016-001  
Date: Mon Jun 11 15:44:40 2018 (GMT-04:00)  
Search algorithm: Search Expert  
Regions searched: 2600.00-450.00





**Quote Number:**

[illegible]

|         |                                                                  |
|---------|------------------------------------------------------------------|
| Client: | DEF Products, LLC                                                |
| Contact | Sharon Stegmuller                                                |
| Address | 422 East Barioni Blvd<br>Imperial, CA 02251                      |
| Email   | <a href="mailto:defproducts@gmail.com">defproducts@gmail.com</a> |
| Phone   | 760 355 7997                                                     |

|               |              |
|---------------|--------------|
| Enalytic ID   | E1806016-002 |
| Batch Number  | 305302018    |
| Train Number  | GATX224270   |
| Sample ID     | DEF 32.5     |
| Date Sampled  | 5/30/2018    |
| Date Received | 6/6/2018     |
| Report Date   | 6/11/2018    |

## Certificate of Analysis

Diesel Exhaust Fluid Analytical ISO-22241

Client ID: 32.5% DEF Batch# 305302018 Train# GATX224270

| Test Parameter/Method         | Units                        | Test Method (ISO) | Acceptable Limit | Results         | Chemist | Analysis Date | Pass/Fail |
|-------------------------------|------------------------------|-------------------|------------------|-----------------|---------|---------------|-----------|
| Urea Content                  | wt%                          | 22241-2 Annex C   | 31.8-33.2        | 32.3            | SPT     | 6/11/2018     | Pass      |
| Density @ 20degC              | g/cm <sup>3</sup>            | 3675              | 1.0870-1.0930    | 1.0890          | SPT     | 6/11/2018     | Pass      |
| Refractive Index @ 20degC     | N <sub>D</sub> <sup>20</sup> | 22241-2 Annex C   | 1.3814-1.3843    | 1.3825          | CND     | 6/8/2018      | Pass      |
| Alkalinity as NH <sub>3</sub> | %                            | 22241-2 Annex D   | <0.2             | 0.03            | CLB     | 6/11/2018     | Pass      |
| Biuret                        | %                            | 22241-2 Annex E   | <0.3             | 0.17            | CLB     | 6/11/2018     | Pass      |
| Aldehyde                      | mg/kg                        | 22241-2 Annex F   | <5               | <1.0            | CLB     | 6/8/2018      | Pass      |
| Insolubles                    | mg/kg                        | 22241-2 Annex G   | <20              | <2.0            | CND     | 6/8/2018      | Pass      |
| Phosphate                     | mg/kg                        | 22241-2 Annex H   | <0.5             | 0.31            | CLB     | 6/8/2018      | Pass      |
| Calcium by ICP-OES            | mg/kg                        | 22241-2 Annex I   | <0.5             | 0.14            | BDK     | 6/7/2018      | Pass      |
| Iron by ICP-OES               | mg/kg                        | 22241-2 Annex I   | <0.5             | <0.05           | BDK     | 6/7/2018      | Pass      |
| Copper by ICP-OES             | mg/kg                        | 22241-2 Annex I   | <0.2             | <0.02           | BDK     | 6/7/2018      | Pass      |
| Zinc by ICP-OES               | mg/kg                        | 22241-2 Annex I   | <0.2             | 0.04            | BDK     | 6/7/2018      | Pass      |
| Chromium by ICP-OES           | mg/kg                        | 22241-2 Annex I   | <0.2             | <0.02           | BDK     | 6/7/2018      | Pass      |
| Nickel by ICP-OES             | mg/kg                        | 22241-2 Annex I   | <0.2             | <0.02           | BDK     | 6/7/2018      | Pass      |
| Aluminum by ICP-OES           | mg/kg                        | 22241-2 Annex I   | <0.5             | <0.05           | BDK     | 6/7/2018      | Pass      |
| Magnesium by ICP-OES          | mg/kg                        | 22241-2 Annex I   | <0.5             | <0.05           | BDK     | 6/7/2018      | Pass      |
| Sodium by ICP-OES             | mg/kg                        | 22241-2 Annex I   | <0.5             | 0.10            | BDK     | 6/7/2018      | Pass      |
| Potassium by ICP-OES          | mg/kg                        | 22241-2 Annex I   | <0.5             | 0.13            | BDK     | 6/7/2018      | Pass      |
| Identity by FTIR (attached)   | Spectra                      | 22241-2 Annex J   | Match            | Reference Match | BDK     | 6/11/2018     | Pass      |

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.

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



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

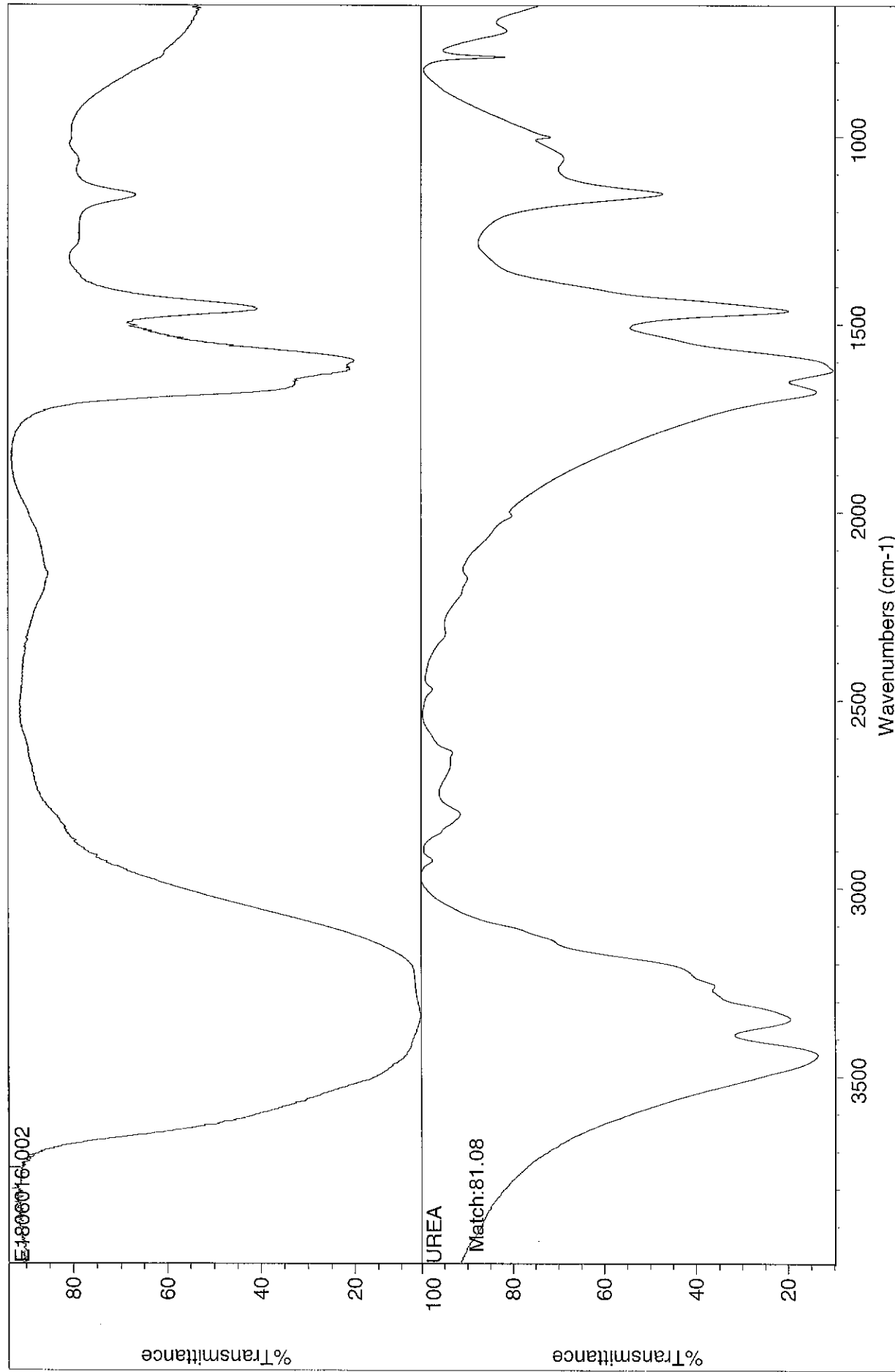
Laboratory Director: Anthony J Scala

Analytic FDA Reg. Number: 02-636-0096

Date: 6/11/2018



Search results for: E1806016-002  
Date: Mon Jun 11 15:47:43 2018 (GMT-04:00)  
Search algorithm: Search Expert  
Regions searched: 2600.00-450.00





**Quote Number:**

[illegible]