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Email: rgardner@elcocorp.com**Work Order: 17-07886**
Revision: 2
Report Date: 7-Sep-17
Order Date: 18-Aug-17
P.O.: 34119**Release:**
Approved By: Tiffany Wilkus
Title: ORGANIC LAB MANAGER

BALAZS™ TEST RESULTS

If you have any questions regarding the results, please call Tiffany Wilkus at (510) 624-4045

Background and Summary:

On 8/9/17, one HCl solution identified as HCl 23 Deg Lot 080217-121, was received for analysis of extractable organic compounds by GC-FID and GC-MS (gas chromatography mass spectrometry).

No organics were detected by this method.

Sample Preparation:

Approximately 30mL of sample was extracted with 3mL of hexanes. A 0.5mL portion of the extract was spiked with a known volume of n-Hexadecane internal standard. The extract was analyzed by GC-MS and GC-FID.

GC-MS Instrumentation:

GC-FID:

The system used for the analysis was an Agilent 7890B GC (Gas Chromatograph) with an FID (Flame Ionization Detector). The GC-FID was equipped with a non-polar dimethyl polysiloxane phase capillary column. The following temperature program was used for the GC: the oven was held at an initial temperature of 35°C for 5 minutes, ramped at a rate of 15°C/minute to 280°C and held at the final temperature for 20 minutes. The injection port temperature was 250°C. The sample injection volume was

1.0 microliter and the GC was operated in splitless mode.

GC-MS:

The system used for the analysis was an Agilent 7890B GC (Gas Chromatograph) with an FID (Flame Ionization Detector) and a 5977 quadrupole MSD (Mass Selective Detector). The GC was equipped with a non-polar dimethyl polysiloxane phase capillary column. The following temperature program was used for the GC: the oven was held at an initial temperature of 35°C for 5 minutes, ramped at a rate of 15°C/minute to 280°C and held at the final temperature for 25 minutes. The injection port temperature was 250°C. The sample injection volume was 1.0 microliter and the GC was operated in splitless mode.

Each compound passed down the GC column at a characteristic rate. As each compound exited the gas chromatograph, it entered the MSD where it was ionized using electron impact ionization (70 eV). The MSD collected a full mass spectrum (10-700 amu) approximately once per second.

Results:

No extractable organics were detected by this method. The labeled chromatogram is provided.

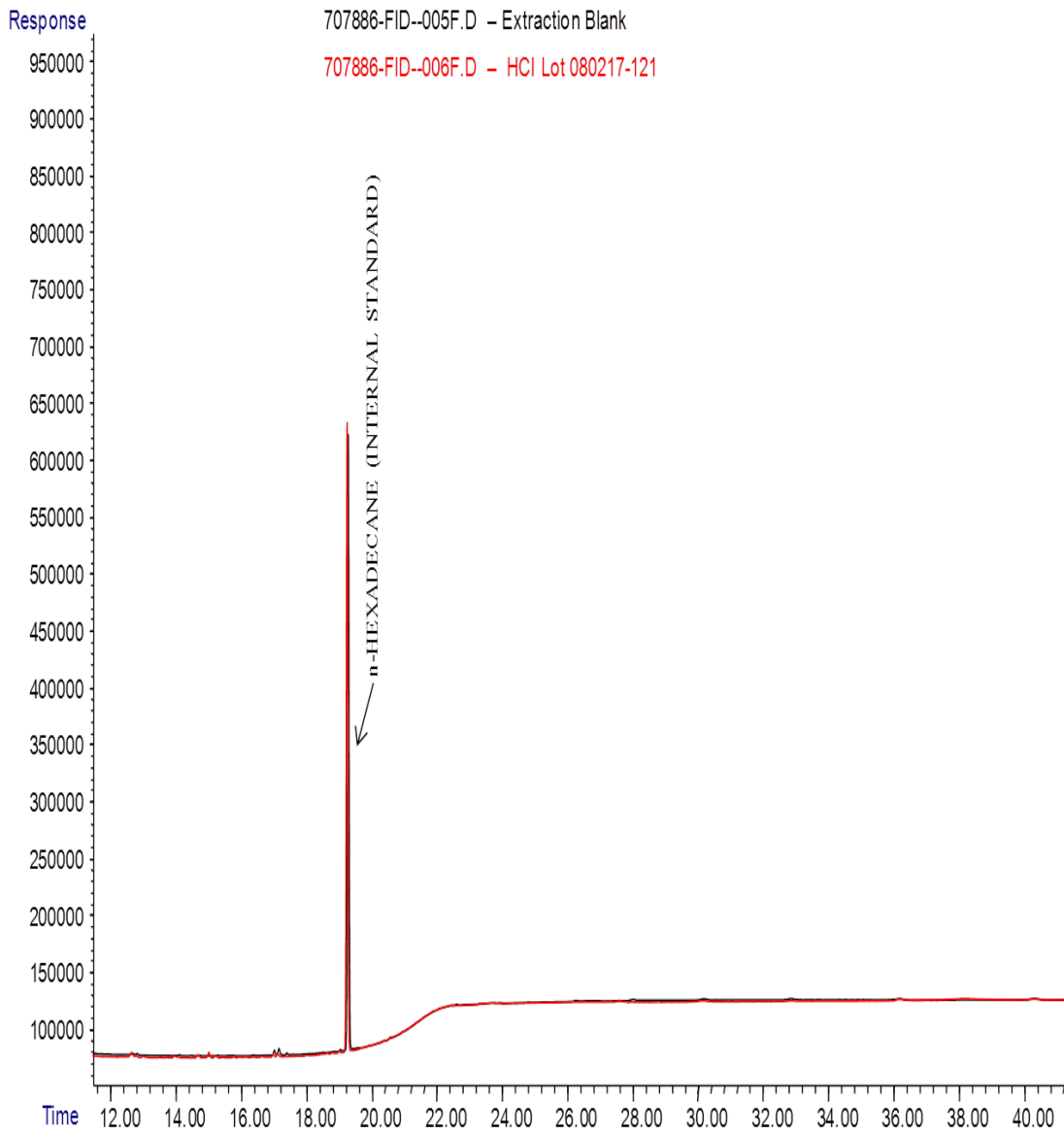
Figure 1

Sample ID: Lot# 080217-121

Method of Analysis: Liquid Injection-GC-FID (Gas Chromatography-Flame Ionization Detector)

Sampling Conditions: Direct injection of hexane extracted solution.

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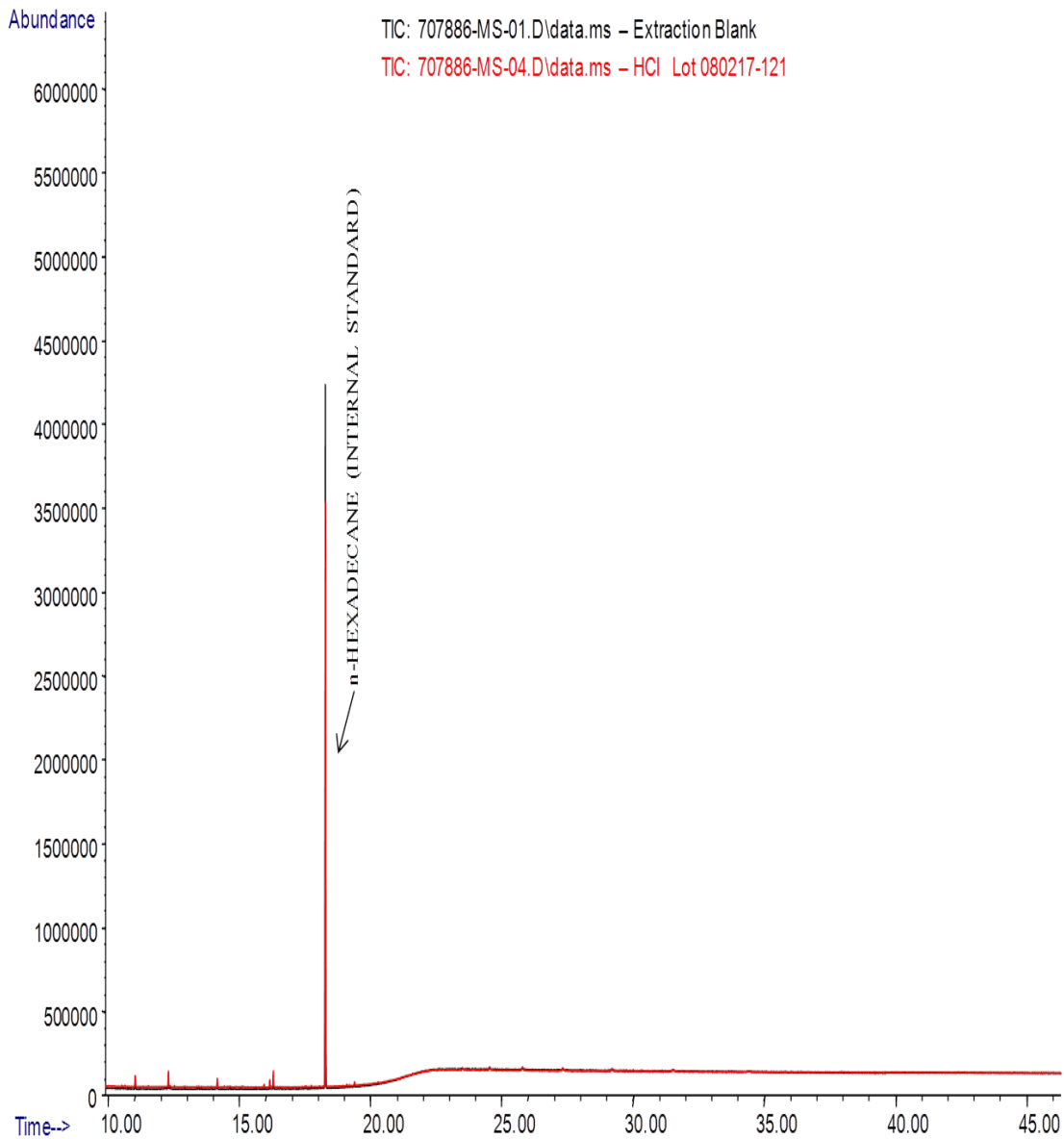
Figure 2

Sample ID: Lot# 080217-121

Method of Analysis: Liquid Injection-GC-MS (Gas Chromatography-Mass Spectrometry)

Sampling Conditions: Direct injection of hexane extracted solution.

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