

MR JIM VENCE
DETREX ELCO CORPORATION
1100 STATE ROAD
ASHTABULA OH 44004
UNITED STATES

Phone: (440) 997-6131
Email: JVence@elcocorp.com

Work Order: 17-10209
Revision: 1
Report Date: 8-Oct-17
Order Date: 8-Oct-17
P.O.: NO CHARGE

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:

One HCl sample was received for qualitative analysis by gas chromatography mass spectrometry (GC-MS) and quantitative analysis by gas chromatography flame ionization detection (GC-FID) to evaluate volatile organic contaminants, specifically chlorobenzene.

Sample ID	Sample Mass (g)
HCl 23 Deg; Lot 080217-121	96.98

Sample Preparation:

A known amount of sample was diluted approximately 1:1 with water and extracted with 50 mL of methylene chloride (CH₂Cl₂) three times. The extracted fractions were collected and concentrated to 0.5 mL. The solution was spiked with a known volume of **n-Hexadecane** internal standard for GC-FID analysis.

GC-FID Instrumentation:

The system used for the analysis was an HP 6890 GC (Gas Chromatograph) with a 5973 quadrupole MSD (Mass Selective Detector).

The GC was equipped with a non-polar poly (dimethylsiloxane) phase capillary column. The following temperature program was used for the GC: the oven was ramped from 60°C to 230°C at a rate of 15°C/minute and held at the final temperature for 10 minutes. A 1.2µL portion was injected, the injection port temperature was 280°C and the GC was operated with a split ratio of 5:1.

Each compound passed down the GC column at a characteristic rate. As each compound exited the gas chromatograph, it entered the FID.

GC-FID Results:

-Chlorobenzene was not detected at or above the reporting limit of 1 ppbV.



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46409 Landing Parkway, Fremont CA 94538
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Sample: 1130408 [BLANK CH2Cl2]

Site ID: METHOD BLANK

Component	Detection Limit	Result Value	Units
G0111-GCL-N-R-C Solvent (Mixture) Normalized Area % Assay by GC- FID			
Chlorobenzene	1	*	ppbV

* = Analysis revealed that the analyte was not found at or about the detection limit

These results were obtained by following standard laboratory procedures and are only representative of the sample as received by the laboratory. The liability of AIR LIQUIDE - BALAZS NanoAnalysis ("Balazs") should not exceed the amount paid for this report. In no event shall Balazs be liable for special of consequential damages. Client agrees not to use Balaz's name in reporting results obtained from tests performed by Balazs written consent as to such use. Report shall not be reproduced except in full, without the written permission of Balazs.



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Sample: 1130409 [LOT# 080217-121; HCl 23 DEG]

Site ID: HCl

Component	Detection Limit	Result Value	Units
G0111-GCL-N-R-C Solvent (Mixture) Normalized Area % Assay by GC- FID			
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