



ANALYSIS REPORT

Pace Analytical Life Sciences, LLC
 1311 Helmo Avenue North
 Oakdale, MN 55128
 Phone: (651)738-2728

Workorder 17180480

IP and JP HCl Monograph Conformance Testing
 Lot: TILX60115820823 / 08223116
 Specification: Per Current Compendia
 Receipt Date: 22 Aug 2023
 Report Date: 18 Dec 2023

Prepared For:

Daniel Pocci
 Italmatch Chemicals (Elco Corporation), Cleveland,
 1000 Beltline Street
 Cleveland, OH 44109

Project Manager:

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Analysis Performed	Analysis Date	Specification	Result
<i>1.0 L 37.5% HCl, PLS Sample ID 17180480001</i>			
ID A, IP Effective Date: Current	12 Oct 2023	Chlorine is evolved	Complies: Chlorine was evolved
ID B, IP Effective Date: Current	16 Oct 2023	It gives the reactions of chlorides (2.3.1)	Complies: It gave the reactions of chlorides (2.3.1)
Arsenic, IP (2.3.10) Effective Date: Current	03 Dec 2023	NMT 1 ppm	Complies: NMT 1 ppm
Heavy Metals, IP (2.3.13) Effective Date: Current	18 Oct 2023	The colour produced with the test solution is not more intense than that produced with the standard solution.	Complies: The colour produced with the test solution was not more intense than that produced with the standard solution.
Bromide and Iodide, IP Effective Date: Current	31 Oct 2023	The chloroform layer does not become brown or violet	Complies: The chloroform layer did not become brown or violet
Free Chloride, IP Effective Date: Current	26 Oct 2023	Any blue color produced on the addition of 0.2 mL of 0.01 M sodium thiosulphate	Complies: No blue color was produced
Sulphite, IP Effective Date: Current	13 Oct 2023	The colour of the iodine is not completely discharged	Complies: The colour of the iodine was not completely discharged
Sulphates, IP (2.3.17) Effective Date: Current	13 Oct 2023	The resulting solution complies with the limit test for sulphates (20 ppm)	Complies: The resulting solution complied with the limit test for sulphates (20 ppm)
Residue on Evaporation, IP Effective Date: Current	17 Oct 2023	Not more than 0.01 per cent	Complies: 0.00 per cent
Assay, IP Effective Date: Current	10 Oct 2023	Not less than 35.0 per cent w/w and not more than 38.0 per cent w/w of HCl.	Complies: 37.3 per cent w/w of HCl.
<i>1.0 L 37.5% HCl, PLS Sample ID 17180480002</i>			
Identification 1, ChP Effective Date: Current	11 Oct 2023	Gives the reactions of chlorides <0301>.	Complies: Gave the reactions of chlorides <0301>.
Identification 2, ChP Effective Date: Current	09 Oct 2023	Remarkable white fumes produced.	Complies: Remarkable white fumes produced.
Identification 3, ChP Effective Date: Current	09 Oct 2023	Turns the blue litmus TP to red.	Complies: Turned the blue litmus TP to red.
Free Chlorine or Bromine, ChP Effective Date: Current	12 Oct 2023	The solution is free from any blue colour for at least 10 minutes.	Complies: The solution was free from any blue colour for at least 10 minutes.



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Analysis Performed	Analysis Date	Specification	Result
<i>1.0 L 37.5% HCl, PLS Sample ID 17180480002</i>			
Bromide or Iodide, ChP Effective Date: Current	11 Oct 2023	The chloroform layer is colourless.	Complies: The chloroform layer was colourless.
Sulfate, ChP Effective Date: Current	16 Oct 2023	Any opalescence produced was not more pronounced than that of a reference solution prepared using 1.5 mL of potassium sulfate standard solution (0.0005%)	Complies: Any opalescence produced was not more pronounced than that of a reference solution prepared using 1.5 mL of potassium sulfate standard solution (0.0005%)
Sulfite, ChP Effective Date: Current	13 Oct 2023	The blue colour does not disappear.	Complies: The blue colour did not disappear.
Residue on Ignition, ChP Effective Date: Current	10 Oct 2023	Not more than 1.2 mg (0.002%)	Complies: 0.2 mg (0.000%)
Iron, ChP Effective Date: Current	26 Oct 2023	NMT 0.0001%	Complies: NMT 0.0001%
Heavy Metals, ChP Effective Date: Current	18 Oct 2023	Not more than 0.0002%	Complies: Not more than 0.0002%
Arsenic, ChP Effective Date: Current	27 Nov 2023	Not more than 0.0001%	Complies: Not more than 0.0001%
Assay, ChP Effective Date: Current	10 Oct 2023	Not less than 36.0% and not more than 38.0% (g/g) of HCl.	Complies: 37.2% (g/g) of HCl.

Testing was performed in compliance with cGMPs

Signature Manifest

Document Number: PLS-LIMS Report-46054

Revision: A

Title: 17180480_fr

All dates and times are in Central Time Zone.

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QA Approval

Name/Signature	Title	Date	Meaning/Reason
Nancy Thomas (007895)		18 Dec 2023, 03:43:55 PM	Approved