Analytical Testing Report

Indalloy 256 with NC-SMQ75 (Paste)

Report Number: R-20220712-075A

Prepared for:

Quan Sheng
Indium Corporation
1676 Lincoln Avenue
Utica, NY 13503

P.O. #: NA

July 25, 2022

NSL Analytical Services, Inc.
NSL Analytical
4450 Cranwood Parkway
Cleveland, Ohio 44128
Phone: 216-438-5200
Fax: 216-438-5050

Tests Requested:

- European Directive 2011 / 65 / EU Annex II (RoHS; Recasting 2001 / 95 / EC: Cadmium, Lead, Mercury, Hexavalent Chromium, Polybromobiphenyl (PBB), and Polybromodiphenylether (PBDE) content.
- Antimony, Beryllium and Arsenic Content
- Total Halogen and Sulfur Content
- DIBP, DBP, BBP, DEHP, DnOP, DINP, DIDP
- PFOA, PFOS
- HBCDD contents
- Chlorinated Organic Compounds Content
- Organic Tin Compounds Content
- PVC Content

ACCREDITED TESTING ISO/IEC 17025

Contents

Project Definition and Scope

European Directive 2011 / 65 / EU Annex II (RoHS; Recasting 2001 / 95 / EC:

Cadmium, Lead, Mercury, Hexavalent Chromium, Polybromobiphenyl (PBB), and Polybromodiphenylether (PBDE) content.

Antimony, Beryllium, Arsenic Content, Total Halogen and Sulfur content.

DIBP, DBP, BBP, DEHP, DnOP, DINP, DIDP content.
PFOA, PFOS content.

HBCDD contents

Chlorinated Organic Compounds Content and Organictin Compounds Content

PVC Contents

Report Revised to correct reference to most current IEC methods.

Sample Identification

The sample was received on July 12th, 2022 and is labeled as indicated below.

Sample Number	Client Label
S-220712-153	*Indalloy 256 with NC-SMQ75 (Paste)*

Method

With reference to IEC 62321-7-2:2017 Chromium (VI) analysis was conducted by UV-Visible Spectroscopy.

With reference to IEC 62321-6: 2015: PBB, PBDE analysis was conducted by Gas Chromatography – Mass Spectrometry (GC-MS).

With reference to IEC 62321-4: 2013: Mercury analysis was conducted by Inductively Coupled Plasma- Optical Emission Spectroscopy (ICP-OES).

With reference to IEC 62321-5: 2013: Lead, Cadmium and Chromium analysis was conducted by Inductively Coupled Plasma - Mass Spectrometry (ICP-MS).

Antimony, Beryllium and Arsenic analysis was conducted by Inductively Coupled Plasma - Mass Spectrometry (ICP-MS).

With reference to IEC62321-3-2: 2013, BS EN 14582, ASTM D 7359: Halogen and Sulfur analysis was conducted by Ion Chromatography.

With reference to IEC 62321-8: 2017, DIBP, DBP, BBP, DEHP, DnOP, DINP, DIDP were analyzed by Gas Chromatography – Mass Spectrometry (GC-MS).

PFOA and PFOS attained by calculation from Fluoride and Sulfur analysis.

With reference to IEC 62321:2008: HBCDD was analyzed by Gas Chromatography – Mass Spectrometry (GC-MS).

With reference to US EPA 3540C, Chlorinated Organic was analyzed by GC/MS

With reference to ISO 17353, Organictin was analyzed by GC/FPD

Polyvinyl Chloride was analyzed by FTIR and FLAME Test

Results, Opinions, and Interpretations

Table 1: RoHS Results

Test Item	Results (mg/kg) Sample#S-220712-153	Detection Limit (mg/kg)	Reference Limit (mg/kg)
Lead (Pb)	98	5	1000
Cadmium (Cd)	n.d	5	100
Chromium (Cr)	n.d.	5	-
Hexavalent Chromium (Cr(VI))	n.d.	1	1000
Mercury (Hg)	n.d.	5	1000
Sum of PBBs	<300	300	1000
Monobromobiphenyl	n.d.	100	-
Dibromobiphenyl	n.d.	100	-
Tribromobiphenyl	n.d.	10	-
Tetrabromobiphenyl	n.d.	10	-
Pentabromobiphenyl	n.d.	10	-
Hexabromobiphenyl	n.d.	10	-
Heptabromobiphenyl	n.d.	10	-
Octabromobiphenyl	n.d.	10	-
Nonabromobiphenyl	n.d.	10	-
Decabromobiphenyl	n.d.	10	-
Sum of PBDEs	<300	300	1000
Monobromodiphenyl ether	n.d.	100	-
Dibromodiphenyl ether	n.d.	10	-
Tribromodiphenyl ether	n.d.	10	-
Tetrabromodiphenyl ether	n.d.	10	-
Pentabromodiphenyl ether	n.d.	10	-
Hexabromodiphenyl ether	n.d.	10	-
Heptabromodiphenyl ether	n.d.	10	-
Octabromodiphenyl ether	n.d.	10	-
Nonabromodiphenyl ether	n.d.	50	-
Decabromodiphenyl ether	n.d.	100	-

Table 2: Antimony, Beryllium and Arsenic Content

Test Item	Results (mg/kg) Sample#S-220712-153	Detection Limit (mg/kg)
Antimony (Sb)	96	5
Beryllium (Be)	n.d.	5
Arsenic (As)	n.d.	5

Table 3: Halogen and Sulfur Content

Test Item	Results (mg/kg) Sample#S-220712-153	Detection Limit (mg/kg)
Chlorine (Cl)	n.d.	10
Bromine (Br)	n.d.	10
Fluorine (F)	n.d.	10
Iodine (I)	n.d.	10
Sulfur (S)	n.d.	10

Table 4: PFOA and PFOS Content

Test Item	Results (mg/kg) Sample#S-220712-153	Detection Limit (mg/kg)
Perfluorooctanoic acid (PFOA)	n.d.	<20
Perfluorooctane sulfonate (PFOS)	n.d.	<150

Table 5: HBCDD Results

Test Item	Results (mg/kg) Sample#S-220712-153	Detection Limit (mg/kg)
Hexabromocyclododecane (HBCDD)	n.d.	100

Table 6: Phthalates Results

Test Item	Results (mg/kg) Sample#S-220712-153	Detection Limit (mg/kg)	Reference Limit (mg/kg)
Di-isobutyl Phthalate (DIBP)	n.d.	100	-
Dibutyl Phthalate (DBP)	n.d.	100	1000
Butyl Benzyl Phthalate (BBP)	n.d.	100	1000
Di-(2-ethylhexyl) Phthalate (DEHP)	n.d.	200	1000
Di-n-octyl Phthalate (DnOP)	n.d.	100	1000
Di-iso-nonyl Phthalate (DINP)	n.d.	500	1000
Diisodecyl Phthalate (DIDP)	n.d.	500	1000
Di-n-hexyl Phtahlate (DnHP)	n.d.	100	

Table 7: Chlorinated Organic Compounds Results

Test Item	Results (mg/kg) Sample#S-220712-153	Detection Limit (mg/kg)
Polychlorinated Biphenyls (PCBs)	n.d.	10
Polychlorinated Terphenyls (PCTs)	n.d.	10
Chlorinated Paraffins (C10~C13)	n.d.	10
Polychlorinated Naphthalene (PCN)	n.d.	10

Table 8: Organic Tin Compounds Results

Test Item	Results (mg/kg) Sample#S-220712-153	Detection Limit (mg/kg)
Tributyl Tin (TBT)	n.d.	10
Triphenyl Tin (TPT)	n.d.	10
Tributyl Tin Oxide (TBTO)	n.d.	10
Di-Butyl Tin (DBT)	n.d.	10
Di-Octyl Tin (DOT)	n.d.	10

Table 9: Polyvinyl Chloride Results

Test Item	Results (mg/kg) Sample#S-220712-153	Detection Limit (mg/kg)
Polyvinyl Chloride (PVC)	**	Negative

If you have any questions regarding these results, please contact us.

Report Prepared By: Rebecca Bailey

Lisa Simko

Technical Specialist

Process Flow – Analytical Methods for Chemical Analysis

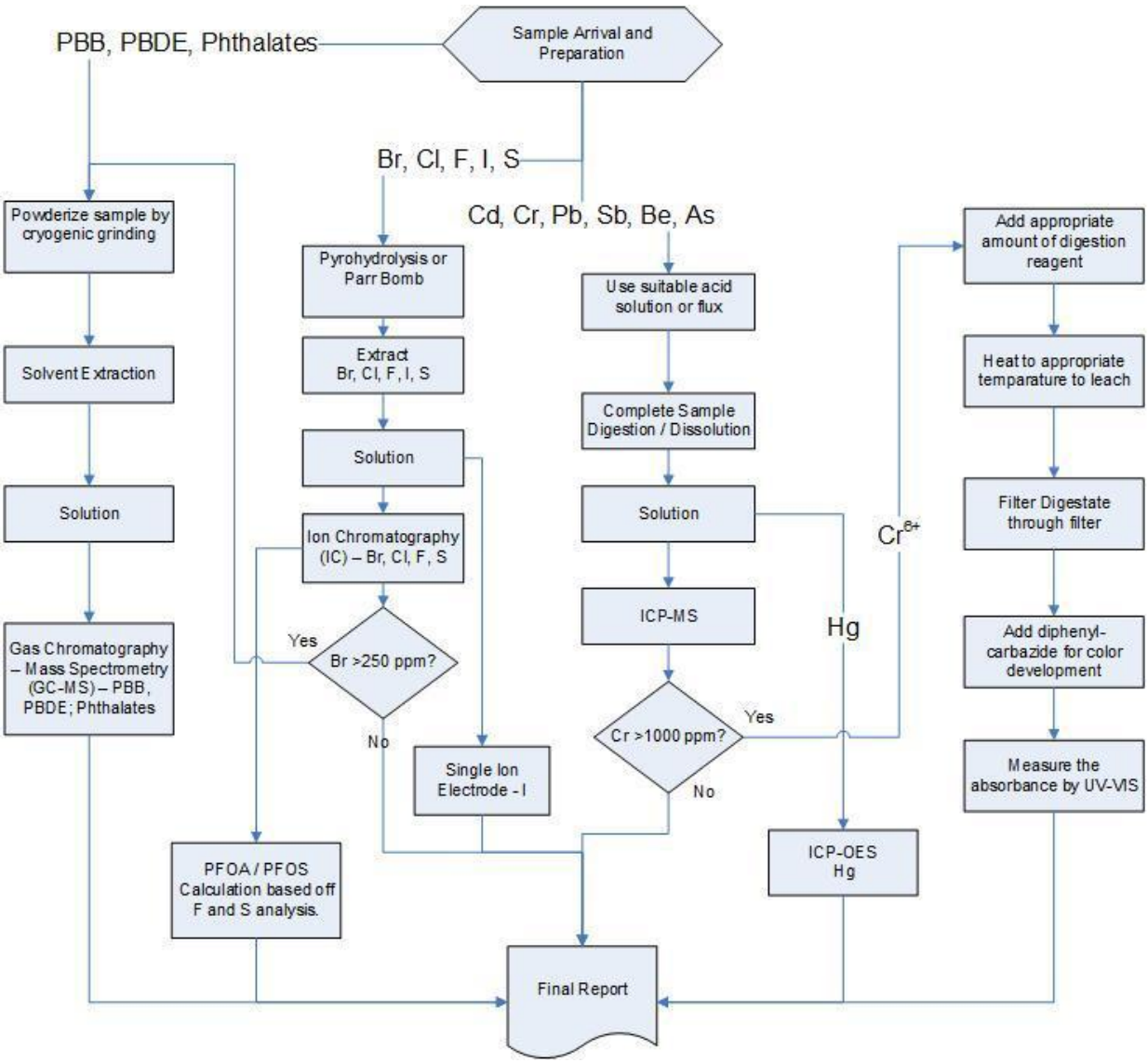
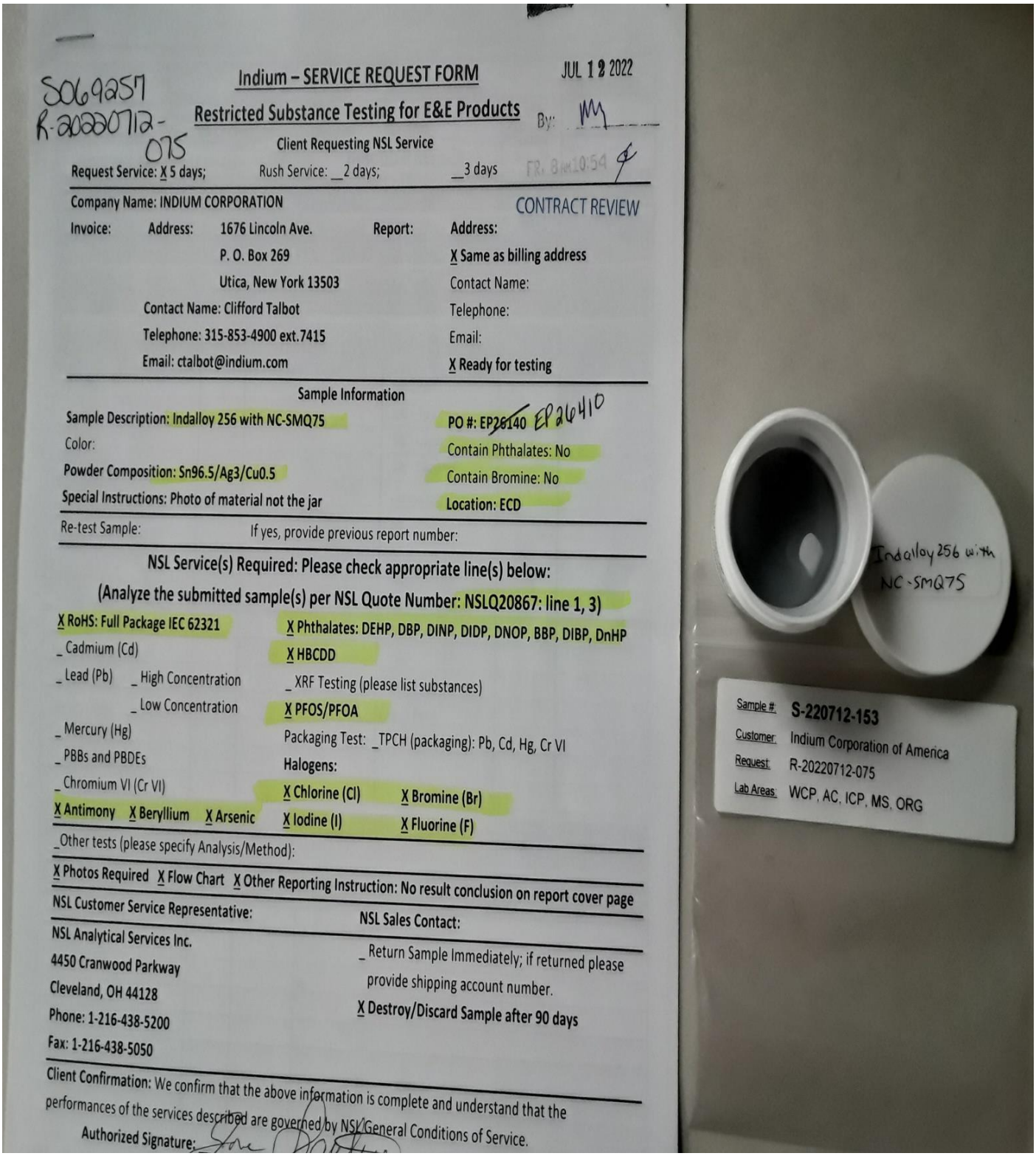


Photo: Sample # S-220712-153



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Indium – SERVICE REQUEST FORM JUL 12 2022

Restricted Substance Testing for E&E Products By: MY

Client Requesting NSL Service

Request Service: X 5 days; Rush Service: _2 days; _3 days FR. 8/11 10:54

Company Name: INDIUM CORPORATION CONTRACT REVIEW

Invoice: Address: 1676 Lincoln Ave.
P. O. Box 269
Utica, New York 13503
Contact Name: Clifford Talbot
Telephone: 315-853-4900 ext.7415
Email: ctalbot@indium.com

Report: Address:
X Same as billing address
Contact Name:
Telephone:
Email:
X Ready for testing

Sample Information

Sample Description: Indalloy 256 with NC-SMQ75
Color:
Powder Composition: Sn96.5/Ag3/Cu0.5
Special Instructions: Photo of material not the jar

PO #: EP26140 EP26410
Contain Phthalates: No
Contain Bromine: No
Location: ECD

Re-test Sample: If yes, provide previous report number:

NSL Service(s) Required: Please check appropriate line(s) below:

(Analyze the submitted sample(s) per NSL Quote Number: NSLQ20867: line 1, 3)

X RoHS: Full Package IEC 62321
_ Cadmium (Cd)
_ Lead (Pb) _ High Concentration
_ Low Concentration
_ Mercury (Hg)
_ PBBs and PBDEs
_ Chromium VI (Cr VI)
X Antimony X Beryllium X Arsenic

X Phthalates: DEHP, DBP, DINP, DIDP, DNOP, BBP, DIBP, DnHP
X HBCDD
_ XRF Testing (please list substances)
X PFOS/PFOA
Packaging Test: _TPCH (packaging): Pb, Cd, Hg, Cr VI
Halogens:
X Chlorine (Cl) X Bromine (Br)
X Iodine (I) X Fluorine (F)

_Other tests (please specify Analysis/Method):

X Photos Required X Flow Chart X Other Reporting Instruction: No result conclusion on report cover page

NSL Customer Service Representative:
NSL Analytical Services Inc.
4450 Cranwood Parkway
Cleveland, OH 44128
Phone: 1-216-438-5200
Fax: 1-216-438-5050

NSL Sales Contact:
_ Return Sample Immediately; if returned please provide shipping account number.
X Destroy/Discard Sample after 90 days

Client Confirmation: We confirm that the above information is complete and understand that the performances of the services described are governed by NSL General Conditions of Service.

Authorized Signature:

Indalloy 256 with NC-SMQ75

Sample #: S-220712-153
Customer: Indium Corporation of America
Request: R-20220712-075
Lab Areas: WCP, AC, ICP, MS, ORG