

Confidential Technical Report

USP <665> Extractables LC-MS Analysis on Silicon Coatings

(USP<665>: Plastic Components and Systems Used to Manufacture Pharmaceutical Drug Products and Biopharmaceutical Drug Substances and Products)

Prepared for:

SilcoTek
225 PennTech Drive
Bellefonte, PA 16823
USA

For the attention of: Jesse Bischof

Email: jesse.bischof@silcotek.com

CTR number: 68764

Version: 01

Date: 23rd July 2026

Proposal: 25-1006049AS/A

Project No: MEI023

Study Initiation Form Number: SIF-MEI023, RT011.89, Version 01

Authorisation signatures are on the following page.

Document Approvals

Author

Tim Hulme, Principal Technical Specialist
thulme@smithers.com

Signed by Tim Hulme



Tim Hulme

I am the author of this document
 23-Jul-2026 | 2:55:43 PM BST

0DF2BC475FDE4DDEA32C11A15DDC079A

Technical Review

Jamie Zhelesnik, Project Manager
jzhelesnik@smithers.com

Signed by Jamie Zhelesnik



Jamie Zhelesnik

I have reviewed this document
 23-Jul-2026 | 2:46:42 PM BST

5A1A3A95E1774AA0A3C11A18C158942C

1 DEFINITIONS AND ABBREVIATIONS

- AET Analytical Evaluation Threshold
- ARF Average Response Factor
- CAS# Chemical Abstracts Service (CAS) Registry Number (also written as: CAS RN)
- cGMP current Good Manufacturing Practice
- Conc. Concentration
- CTR Confidential Technical Report
- HR LC-MS Liquid Chromatography with High Resolution Mass Spectrometric detection
- RF Response Factor
- Rt Retention time
- SOP Standard Operating Procedure
- USP United States Pharmacopeia (USP.org)

2 STUDY OBJECTIVE & TEST ITEMS

SilcoTek wished to assess the non-volatile (HR LC-MS) extractable substances from silicon coated stainless steel according to USP <665> (Plastic Components and Systems Used to Manufacture Pharmaceutical Drug Products and Biopharmaceutical Drug Substances and Products), for Moderate and High risk articles. The test samples are summarised in Table 1.

Table 1 – Sample summary

Smithers sample number	Sample description
SR21277/1	Sintered 316L stainless steel frit coated with Notak 2000
SR21277/2	Sintered 316L stainless steel frit coated with Siltride (SIL 1000)
SR21277/3	Sintered 316L stainless steel frit coated with Dursan
SR21277/4	316 Stainless steel tube coated with Notak 2000
SR21277/5	316 Stainless steel tube coated with Siltride (SIL 1000)
SR21277/6	316 Stainless steel tube coated with Dursan

The client specified the following:

- Frits are 0.25" diameter discs that are 0.0625" thick with a nominal pore size of 10 micrometers. The approximate surface for one of these discs is ~500 cm².
- Tubing is 0.25" standard steel tube sample cut to 5 cm, with internal and external diameter totalling 3.43 cm. The approximate surface area for two 5 cm tubes is 30 cm².

3 SUMMARY OF METHODOLOGY

Samples were evaluated using the parameters summarised in Table 2 to Table 5, all controlled using the relevant Smithers SOP¹, and the SIF.

Table 2 – Extraction solutions

Solution	Composition (per USP <665>)
C1	Ethanol :Water, 50:50
Acidic	0.1M Phosphoric Acid
Basic	0.5M Sodium Hydroxide

¹ Smithers SOP: RT011.89 - Testing to USP <665> Plastic components and systems used to manufacture pharmaceutical drug products and biopharmaceutical drug substances and products (moderate and high risk)

Table 3 – Summary of extractions

Coating	Extraction model	Type	Sample number	Extraction detail (Table 4)	Number of samples extracted	Extraction volume	Extraction duration	Extraction solvent	Extraction temperature	SA:V ratio (cm ² /mL)
Notak 2000	Immersion extraction	Tube	SR21277/4	A	2	30 mL	1 day (24 hrs ± 1h)	C1	50°C	1.2:1
								Acidic	50°C	
								Basic	50°C	
		Frit	SR21277/1	B	1	80 mL	21 days (504 hrs ± 8h)	C1	50°C	~6.25:1
								Acidic	50°C	
								Basic	50°C	
Siltride (SIL 1000)	Immersion extraction	Tube	SR21277/5	A	2	30 mL	1 day (24 hrs ± 1h)	C1	50°C	1.2:1
								Acidic	50°C	
								Basic	50°C	
		Frit	SR21277/2	B	1	80 mL	21 days (504 hrs ± 8h)	C1	50°C	~6.25:1
								Acidic	50°C	
								Basic	50°C	
Dursan	Immersion extraction	Tube	SR21277/6	A	2	30 mL	1 day (24 hrs ± 1h)	C1	50°C	1.2:1
								Acidic	50°C	
								Basic	50°C	
		Frit	SR21277/3	B	1	80 mL	21 days (504 hrs ± 8h)	C1	50°C	~6.25:1
								Acidic	50°C	
								Basic	50°C	

 SA:V ratio – Surface Area to Volume ratio (cm²/mL).

Table 4 – Additional extraction detail

Extraction method notes	Extraction method detail
A (Tubes)	Extracted in 40 mL screw top vials with PTFE liners.
B (Frits)	21 day extractions were static but swirled gently every 3 days (or minimum practicable intervals allowing for the weekend).

Table 5 – Summary of analysis

Coating	Sample	Extraction duration	Extraction solvent	Extract preparation	HR LC-MS	Factor Adjustment
Notak 2000	SR21277/4	1 day (24 hrs $\pm$ 1h)	C1	Treat as C1 per RT011.89, Section 9.2	Y	0.86
			Acidic	Treat as C2 per RT011.89, Section 9.2	Y	0.86
			Basic	To approximately 5 mL of extract add minimal volume of conc. HCl until the pH is <9 , check using indicator paper then treat as C3 per RT011.89, Section 9.2	Y	0.86
	SR21277/1	21 days (504 hrs $\pm$ 8h)	C1	Treat as C1 per RT011.89, Section 9.2	Y	0.16
			Acidic	Treat as C2 per RT011.89, Section 9.2	Y	0.16
			Basic	To approximately 5 mL of extract add minimal volume of conc. HCl until the pH is <9 , check using indicator paper then treat as C3 per RT011.89, Section 9.2	Y	0.16
Siltride (SIL 1000)	SR21277/5	1 day (24 hrs $\pm$ 1h)	C1	Treat as C1 per RT011.89, Section 9.2	Y	0.86
			Acidic	Treat as C2 per RT011.89, Section 9.2	Y	0.86
			Basic	To approximately 5 mL of extract add minimal volume of conc. HCl until the pH is <9 , check using indicator paper then treat as C3 per RT011.89, Section 9.2	Y	0.86
	SR21277/2	21 days (504 hrs $\pm$ 8h)	C1	Treat as C1 per RT011.89, Section 9.2	Y	0.16
			Acidic	Treat as C2 per RT011.89, Section 9.2	Y	0.16
			Basic	To approximately 5 mL of extract add minimal volume of conc. HCl until the pH is <9 , check using indicator paper then treat as C3 per RT011.89, Section 9.2	Y	0.16
Dursan	SR21277/6	1 day (24 hrs $\pm$ 1h)	C1	Treat as C1 per RT011.89, Section 9.2	Y	0.86
			Acidic	Treat as C2 per RT011.89, Section 9.2	Y	0.86
			Basic	To approximately 5 mL of extract add minimal volume of conc. HCl until the pH is <9 , check using indicator paper then treat as C3 per RT011.89, Section 9.2	Y	0.86
	SR21277/3	21 days (504 hrs $\pm$ 8h)	C1	Treat as C1 per RT011.89, Section 9.2	Y	0.16
			Acidic	Treat as C2 per RT011.89, Section 9.2	Y	0.16
			Basic	To approximately 5 mL of extract add minimal volume of conc. HCl until the pH is <9 , check using indicator paper then treat as C3 per RT011.89, Section 9.2	Y	0.16

4 REPORTING THRESHOLD

Reporting thresholds, reporting units and peak number limits are shown in Table 6.

Table 6 – Reporting thresholds and units

Analytical technique	Reporting units	Reporting threshold (in extract)
HR LC-MS	µg/cm ²	Tubing – 0.1 ug/mL Frits - 0.5 µg/mL*

* In extract, limited to the top 10 peaks by response. If further peaks are observed during processing, the client will be contacted to confirm if further assessment is required.

5 METHOD DESCRIPTION AND TEST DATES

The sample extraction and analysis was conducted according to Smithers SOP RT011.89, version 1 and study initiation form number: SIF-MEI023, RT011.89, Version 01.

Deviations from the SIF and SOP (i.e. non-conforming works) are detailed in Section 1.

The practical work for this study was performed between the dates shown in Table 7.

Table 7 – Study dates

Activity	Date performed
Preparation of 21 day extracts	11 th May 2026 to 1 st June 2026
Preparation of 24 hour extracts, laboratory sample preparation and instrumental analysis of all extracts	1 st June 2026 to 10 th June 2026

6 TESTING OF VARIOUS GASKETS AND GASKET MATERIALS TO USP <665>

The samples provided for this testing are shown in Table 8.

Table 8 – Sample Details

Smithers sample number	Receipt date	Quantity supplied	Sample description	Lot number
SR21277/1	5 th March 2026	6	Sintered 316L stainless steel frit coated with Notak 2000	SO167077
SR21277/2		6	Sintered 316L stainless steel frit coated with Siltride (SIL 1000)	SO167077
SR21277/3		6	Sintered 316L stainless steel frit coated with Dursan	SO167077
SR21277/4		10	316 Stainless steel tube coated with Notak 2000	SO167077
SR21277/5		10	316 Stainless steel tube coated with Siltride (SIL 1000)	SO167077
SR21277/6		10	316 Stainless steel tube coated with Dursan	SO167077

7 HR LC-MS ANALYSIS RESULTS

The following sections show the results from the HR LC-MS analysis of the sample extracts.

In summary, no substances were observed above the reporting threshold by HR LC-MS in any of the extracts.

7.1.1 Results for HR LC-MS Analysis of Solution C1 (EtOH:Water, 50:50) extracts

Table 9 – HR LC-MS data (positive mode ESI): Solution C1 (EtOH:Water, 50:50) extract of Sintered 316L stainless steel frit coated with Notak 2000 (SR21277/1)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 10 – HR LC-MS data (negative mode ESI): Solution C1 (EtOH:Water, 50:50) extract of Sintered 316L stainless steel frit coated with Notak 2000 (SR21277/1)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 11 – HR LC-MS data (positive mode ESI): Solution C1 (EtOH:Water, 50:50) extract of Sintered 316L stainless steel frit coated with Siltride (SIL 1000) (SR21277/2)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 12 – HR LC-MS data (negative mode ESI): Solution C1 (EtOH:Water, 50:50) extract of Sintered 316L stainless steel frit coated with Siltride (SIL 1000) (SR21277/2)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 13 – HR LC-MS data (positive mode ESI): Solution C1 (EtOH:Water, 50:50) extract of Sintered 316L stainless steel frit coated with Dursan (SR21277/3)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 14 – HR LC-MS data (negative mode ESI): Solution C1 (EtOH:Water, 50:50) extract of Sintered 316L stainless steel frit coated with Dursan (SR21277/3)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 15 – HR LC-MS data (positive mode ESI): Solution C1 (EtOH:Water, 50:50) 316 Stainless steel tube coated with Notak 2000 (SR21277/4)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 16 – HR LC-MS data (negative mode ESI): Solution C1 (EtOH:Water, 50:50) 316 Stainless steel tube coated with Notak 2000 (SR21277/4)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 17 – HR LC-MS data (positive mode ESI): Solution C1 (EtOH:Water, 50:50) extract of 316 Stainless steel tube coated with Siltride (SIL 1000) (SR21277/5)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 18 – HR LC-MS data (negative mode ESI): Solution C1 (EtOH:Water, 50:50) extract of 316 Stainless steel tube coated with Siltride (SIL 1000) (SR21277/5)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 19 – HR LC-MS data (positive mode ESI): Solution C1 (EtOH:Water, 50:50) extract of 316 Stainless steel tube coated with Dursan (SR21277/6)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 20 – HR LC-MS data (negative mode ESI): Solution C1 (EtOH:Water, 50:50) extract of 316 Stainless steel tube coated with Dursan (SR21277/6)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

7.1.2 Results for HR LC-MS Analysis of Acidic (0.1M Phosphoric Acid) Extracts

Table 21 – HR LC-MS data (positive mode ESI): Acidic (0.1M phosphoric acid) extract of Sintered 316L stainless steel frit coated with Notak 2000 (SR21277/1)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 22 – HR LC-MS data (negative mode ESI): Acidic (0.1M phosphoric acid) extract of Sintered 316L stainless steel frit coated with Notak 2000 (SR21277/1)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 23 – HR LC-MS data (positive mode ESI): Acidic (0.1M phosphoric acid) extract of Sintered 316L stainless steel frit coated with Siltride (SIL 1000) (SR21277/2)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 24 – HR LC-MS data (negative mode ESI): Acidic (0.1M phosphoric acid) extract of Sintered 316L stainless steel frit coated with Siltride (SIL 1000) (SR21277/2)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 25 – HR LC-MS data (positive mode ESI): Acidic (0.1M phosphoric acid) extract of Sintered 316L stainless steel frit coated with Dursan (SR21277/3)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 26 – HR LC-MS data (negative mode ESI): Acidic (0.1M phosphoric acid) extract of Sintered 316L stainless steel frit coated with Dursan (SR21277/3)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 27 – HR LC-MS data (positive mode ESI): Acidic (0.1M phosphoric acid) 316 Stainless steel tube coated with Notak 2000 (SR21277/4)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 28 – HR LC-MS data (negative mode ESI): Acidic (0.1M phosphoric acid) 316 Stainless steel tube coated with Notak 2000 (SR21277/4)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 29 – HR LC-MS data (positive mode ESI): Acidic (0.1M phosphoric acid) extract of 316 Stainless steel tube coated with Siltride (SIL 1000) (SR21277/5)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 30 – HR LC-MS data (negative mode ESI): Acidic (0.1M phosphoric acid) extract of 316 Stainless steel tube coated with Siltride (SIL 1000) (SR21277/5)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 31 – HR LC-MS data (positive mode ESI): Acidic (0.1M phosphoric acid) extract of 316 Stainless steel tube coated with Dursan (SR21277/6)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 32 – HR LC-MS data (negative mode ESI): Acidic (0.1M phosphoric acid) extract of 316 Stainless steel tube coated with Dursan (SR21277/6)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

7.1.3 Results for HR LC-MS Analysis of Basic (0.5M Sodium Hydroxide) Extracts

Table 33 – HR LC-MS data (positive mode ESI): Basic (0.5M sodium hydroxide) extract of Sintered 316L stainless steel frit coated with Notak 2000 (SR21277/1)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 34 – HR LC-MS data (negative mode ESI): Basic (0.5M sodium hydroxide) extract of Sintered 316L stainless steel frit coated with Notak 2000 (SR21277/1)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 35 – HR LC-MS data (positive mode ESI): Basic (0.5M sodium hydroxide) extract of Sintered 316L stainless steel frit coated with Siltride (SIL 1000) (SR21277/2)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 36 – HR LC-MS data (negative mode ESI): Basic (0.5M sodium hydroxide) extract of Sintered 316L stainless steel frit coated with Siltride (SIL 1000) (SR21277/2)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 37 – HR LC-MS data (positive mode ESI): Basic (0.5M sodium hydroxide) extract of Sintered 316L stainless steel frit coated with Dursan (SR21277/3)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 38 – HR LC-MS data (negative mode ESI): Basic (0.5M sodium hydroxide) extract of Sintered 316L stainless steel frit coated with Dursan (SR21277/3)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 39 – HR LC-MS data (positive mode ESI): Basic (0.5M sodium hydroxide) 316 Stainless steel tube coated with Notak 2000 (SR21277/4)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 40 – HR LC-MS data (negative mode ESI): Basic (0.5M sodium hydroxide) 316 Stainless steel tube coated with Notak 2000 (SR21277/4)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 41 – HR LC-MS data (positive mode ESI): Basic (0.5M sodium hydroxide) extract of 316 Stainless steel tube coated with Siltride (SIL 1000) (SR21277/5)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 42 – HR LC-MS data (negative mode ESI): Basic (0.5M sodium hydroxide) extract of 316 Stainless steel tube coated with Siltride (SIL 1000) (SR21277/5)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 43 – HR LC-MS data (positive mode ESI): Basic (0.5M sodium hydroxide) extract of 316 Stainless steel tube coated with Dursan (SR21277/6)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

Table 44 – HR LC-MS data (negative mode ESI): Basic (0.5M sodium hydroxide) extract of 316 Stainless steel tube coated with Dursan (SR21277/6)

Rt (min)	Proposed formula	CAS#	Identity	Observed m/z	Mass error (ppm)	Estimated amount (µg/cm²)	Response factor used	Identification		Notes
								Category	Level	
No compounds detected above the reporting threshold										

8 AMENDMENTS AND DEVIATIONS

No amendments were required for SIF-MEI023, RT011.89, Version 01.

A summary of the recorded deviations from the SIF/ATP is shown in Table 45.

Table 45 – Deviations from SIF-MEI023, RT011.89, Version 01 / Smithers SOP RT011.89, v01

Reference	Details	Impact assessment
TestDEV 4048	SIF-MEI023 RT011.89 V01 Table 1. Incorrect solvents used in extraction of SR21227/1-3. Solvents in the SOP RT011.89 (8.1.1 - 8.1.13) were used rather than the solvents in the SIF.	No negative impact on the study. The correct extraction solutions were prepared and the 21-day samples re-extracted. The 24-hour sample extractions were unaffected.
TestDEV 4105	MEI023 RT011.89 Table 6 LCMS. The SIF asks for the basic extracted samples to be pH adjusted before analysis. However, the same is not the case for the STDs. This meant that when looking for the ARF compounds, half in each mode could not be found, thus a repeat of the basic samples is required.	No negative impact on the study. Matrix matched standards were re-prepared and analysis successfully repeated for the basic solutions.

9 REPORT VERSION

Table 46 – Report Version

Version Number	Submission Date	Description	Reason for changes	Author or Originator
01	23 rd July 2026	Original Document	N/A	Tim Hulme