



100 Majestic Way, Bangor, PA 18013 / www.biospectra.us

ELEMENTAL IMPURITY ASSESSMENT

MATERIAL NAME: BIS-TRIS 2023 L-7 PROCESS VALIDATION

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TABLE 1: ELEMENTAL IMPURITY RISK ASSESSMENT		Analytical Method: BSI-ATM-0075; Method Validation Report: BSI-RPT-0803 Batch Record DCN: BSI-MPR-0065 Manufacturing Process DCN: BSI-PRL-0752 Degradation and Impurity Protocol: BSI-PRL-0620 v1.2 Degradation and Impurity Report: BSI-RPT-1601 Parenteral Specifications (10 g/day MDD)	
Element	Class	¹Limits 1.0J Target ppm (µg/g)	Control Threshold Limits 0.3J Target ppm (µg/g)
Cd	1	0.20	0.06
Pb	1	0.50	0.15
As	1	1.5	0.45
Hg	1	0.30	0.09
Co	2A	0.50	0.15
V	2A	1.0	0.30
Ni	2A	2.0	0.60
Tl	2B	0.80	0.24
Au	2B	10	3.0
Pd	2B	1.0	0.30
Ir	2B	1.0	0.30
Os	2B	1.0	0.30
Rh	2B	1.0	0.30
Ru	2B	1.0	0.30
Se	2B	8.0	2.4
Ag	2B	1.0	0.30

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Element	Class	¹Limits 1.0J Target ppm (µg/g)	Control Threshold Limits 0.3J Target ppm (µg/g)
Pt	2B	1.0	0.30
Li	3	25	7.5
Sb	3	9.0	2.7
Ba	3	70	21
Mo	3	150	45
Cu	3	30	9.0
Sn	3	60	18
Cr	3	110	33
Fe	4	10	3.0
K	4	50	15
Na	4	50	15

¹Limits derived from Analytical Method BSI-ATM-0075

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TABLE 2: ELEMENTAL IMPURITY ASSESSMENT				Analytical Method: BSI-ATM-0075; Method Validation Report: BSI-RPT-0803 Batch Record DCN: BSI-MPR-0065 Manufacturing Process DCN: BSI-PRL-0752 Degradation and Impurity Protocol: BSI-PRL-0620 v1.2 Degradation and Impurity Report: BSI-RPT-1601 Parenteral Specifications (10 g/day MDD)			
Element	Class	Limits 1.0J Target ppm (µg/g)	Control Threshold Limits 0.3J Target ppm (µg/g)	Result RM Lot: RMAT-0923-0084 ppm (µg/g)	Result ML Lot: PMAT-0923-01251 ppm (µg/g)	Result WC Lot: BTRI-0123-00045-PV WC 1 st Basket ppm (µg/g)	Result FG Lot: BTRI-0123-00045-PV Drum 1 ppm (µg/g)
Cd	1	0.20	0.06	<0.06	<0.06	<0.06	<0.06
Pb	1	0.50	0.15	<0.15	<0.15	<0.15	<0.15
As	1	1.5	0.45	<0.45	<0.45	<0.45	<0.45
Hg	1	0.30	0.09	<0.09	<0.09	<0.09	<0.09
Co	2A	0.50	0.15	<0.15	<0.15	<0.15	<0.15
V	2A	1.0	0.30	<0.30	<0.30	<0.30	<0.30
Ni	2A	2.0	0.60	<0.60	<0.60	<0.60	<0.60
Tl	2B	0.80	0.24	<0.24	<0.24	<0.24	<0.24
Au	2B	10	3.0	<3.0	<3.0	<3.0	<3.0
Pd	2B	1.0	0.30	<0.30	<0.30	<0.30	<0.30
Ir	2B	1.0	0.30	<0.30	<0.30	<0.30	<0.30
Os	2B	1.0	0.30	<0.30	<0.30	<0.30	<0.30
Rh	2B	1.0	0.30	<0.30	<0.30	<0.30	<0.30
Ru	2B	1.0	0.30	<0.30	<0.30	<0.30	<0.30
Se	2B	8.0	2.4	<2.4	<2.4	<2.4	<2.4

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Element	Class	Limits 1.0J Target ppm (µg/g)	Control Threshold Limits 0.3J Target ppm (µg/g)	Result RM Lot: RMAT-0923-0084 ppm (µg/g)	Result ML Lot: PMAT-0923-01251 ppm (µg/g)	Result WC Lot: BTRI-0123-00045-PV WC 1st Basket ppm (µg/g)	Result FG Lot: BTRI-0123-00045-PV Drum 1 ppm (µg/g)
Ag	3	1.0	0.30	<0.30	<0.30	<0.30	<0.30
Pt	3	1.0	0.30	<0.30	<0.30	<0.30	<0.30
Li	3	25	7.5	<7.5	<7.5	<7.5	<7.5
Sb	3	9.0	2.7	<2.7	<2.7	<2.7	<2.7
Ba	3	70	21	<21	<21	<21	<21
Mo	3	150	45	<45	<45	<45	<45
Cu	3	30	9.0	<9.0	<9.0	<9.0	<9.0
Sn	3	60	18	<18	<18	<18	<18
Cr	3	110	33	<33	<33	<33	<33
Fe	4	10	3.0	<3.0	<3.0	<3.0	<3.0
K	4	50	15	<15	<15	<15	<15
Na	4	50	15	<15	<15	<15	<15

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