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Effective Date:	03-Nov-2021	02-Nov-2024	: Date of Next Review																				
Initiated By:	Yencho, Amy M	N/A	: Supersedes																				
Reason for Print:	Placement on Website																						
Approval:	<table border="1"> <thead> <tr> <th>Approvers</th> <th>Date</th> <th>Time</th> <th>Group</th> <th>Name</th> </tr> </thead> <tbody> <tr> <td></td> <td>01-Nov-2021</td> <td>10:50:23 AM</td> <td>SNR MGMT</td> <td>Yencho, Amy M</td> </tr> <tr> <td></td> <td>01-Nov-2021</td> <td>11:29:18 AM</td> <td>EDITOR</td> <td>Goheen, Joshua</td> </tr> <tr> <td></td> <td>03-Nov-2021</td> <td>05:23:01 PM</td> <td>QUALITY</td> <td>Lippman, Jason C</td> </tr> </tbody> </table>			Approvers	Date	Time	Group	Name		01-Nov-2021	10:50:23 AM	SNR MGMT	Yencho, Amy M		01-Nov-2021	11:29:18 AM	EDITOR	Goheen, Joshua		03-Nov-2021	05:23:01 PM	QUALITY	Lippman, Jason C
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ELEMENTAL IMPURITY ASSESSMENT

MATERIAL NAME: TRIS EXCIPIENT 2021

Printed On:	11-Nov-2021 07:33:45 AM	Ledgerber, Alissa L	: Printed By
Print Expiration:	Not Applicable		
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Table 1: Elemental Impurity Risk Assessment			Manufacturing Process DCN: 16-000619 Parenteral Specifications 10g/day MDD				
Element	Class	Intentionally Added?	Potential Sources?	Manufacturing Equipment Risk?	Method LOQ ppm (µg/g)	Limits 1.0J Target ppm (µg/g)	Control Threshold Limits 0.3J Target ppm (µg/g)
Cd	1	No	No	No	0.002	0.20	0.06
Pb	1	No	No	No	0.005	0.50	0.15
As	1	No	No	No	0.015	1.5	0.45
Hg	1	No	No	No	0.003	0.30	0.09
Co	2A	No	No	No	0.005	0.50	0.15
V	2A	No	No	No	0.01	1.0	0.30
Ni	2A	No	Yes	No	0.02	2.0	0.60
Tl	2B	No	No	No	0.008	0.80	0.24
Au	2B	No	No	No	0.10	10	3.0
Pd	2B	No	No	No	0.01	1.0	0.30
Ir	2B	No	No	No	0.01	1.0	0.30
Os	2B	No	No	No	0.01	1.0	0.30
Rh	2B	No	No	No	0.01	1.0	0.30
Ru	2B	No	No	No	0.01	1.0	0.30
¹ Se	2B	No	No	No	0.05	5.0	1.5
Ag	2B	No	No	No	0.01	1.0	0.30

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Element	Class	Intentionally Added?	Potential Sources?	Manufacturing Equipment Risk?	Method LOQ ppm (µg/g)	Limits 1.0J Target ppm (µg/g)	Control Threshold Limits 0.3J Target ppm (µg/g)
Pt	2B	No	No	No	0.01	1.0	0.30
Li	3	No	No	No	0.25	25	7.5
Sb	3	No	No	No	0.09	9.0	2.7
Ba	3	No	No	No	0.70	70	21
¹ Mo	3	No	No	No	0.05	5.0	1.5
¹ Cu	3	No	No	No	0.025	2.5	0.75
Sn	3	No	No	No	0.60	60	18
¹ Cr	3	No	No	No	0.05	5.0	1.5
² Additional Elements							
Al	4	No	Yes	No	0.40	40	12
Fe	4	No	No	No	0.20	20	6.0
Mn	4	No	No	No	0.025	2.5	0.75
Zn	4	No	No	No	0.20	20	6.0
¹ Specification calculated based on lower internal specification.							
² Additional Elements Specifications and Results are For Informational Purposes only.							

TABLE 2: ELEMENTAL IMPURITY ASSESSMENT		Manufacturing Process DCN: 16-000619 Parenteral Specifications: 10g/day MDD	
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Element	Class	Limits 1.0J Target ppm (µg/g)	Control Threshold Limits 0.3J Target ppm (µg/g)	Result Batch 1 Lot: TR3200-660-0121 ppm (µg/g)	Result Batch 2 Lot: TR3200-661-0121 ppm (µg/g)	Result Batch 3 Lot: TR3200-662-0121 ppm (µg/g)	Meets Control Threshold (Yes or No)
Cd	1	0.20	0.06	<0.06	<0.06	<0.06	Yes
Pb	1	0.50	0.15	<0.15	<0.15	<0.15	Yes
As	1	1.5	0.45	<0.45	<0.45	<0.45	Yes
Hg	1	0.30	0.09	<0.09	<0.09	<0.09	Yes
Co	2A	0.50	0.15	<0.15	<0.15	<0.15	Yes
V	2A	1.0	0.30	<0.30	<0.30	<0.30	Yes
Ni	2A	2.0	0.60	<0.60	<0.60	<0.60	Yes
Tl	2B	0.80	0.24	<0.24	<0.24	<0.24	Yes
Au	2B	10	3.0	<3.0	<3.0	<3.0	Yes
Pd	2B	1.0	0.30	<0.30	<0.30	<0.30	Yes
Ir	2B	1.0	0.30	<0.30	<0.30	<0.30	Yes
Os	2B	1.0	0.30	<0.30	<0.30	<0.30	Yes
Rh	2B	1.0	0.30	<0.30	<0.30	<0.30	Yes
Ru	2B	1.0	0.30	<0.30	<0.30	<0.30	Yes
¹ Se	2B	5.0	1.5	<1.5	<1.5	<1.5	Yes
Ag	3	1.0	0.30	<0.30	<0.30	<0.30	Yes

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Pt	3	1.0	0.30	<0.30	<0.30	<0.30	Yes
Li	3	25	7.5	<7.5	<7.5	<7.5	Yes
Sb	3	9.0	2.7	<2.7	<2.7	<2.7	Yes
Ba	3	70	21	<21	<21	<21	Yes
¹ Mo	3	5.0	1.5	<1.5	<1.5	<1.5	Yes
¹ Cu	3	2.5	0.75	<0.75	<0.75	<0.75	Yes
Sn	3	60	18	<18	<18	<18	Yes
¹ Cr	3	5.0	1.5	<1.5	<1.5	<1.5	Yes
² Additional Elements							
Al	4	40	12	1.462	1.510	0.709	Yes
Fe	4	20	6.0	<6.0	<6.0	<6.0	Yes
Mn	4	2.5	0.75	<0.75	<0.75	<0.75	Yes
Zn	4	20	6.0	<6.0	<6.0	<6.0	Yes
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