

## SAFETY DATA SHEET

Precoated (Mouse Anti-Rabbit IgG) EIA 96-Well Plate (strip or solid) Supersed

Revision: 03/26/2018 Supersedes Revision: 01/23/2018

			Plate	e (strip or solie	d) s	Supersedes Revision: 01/23/2018		
		accord	ing to Regulation (EC) No. 19	07/2006 as amended b	y (EC) No. 1272/200	8		
		Section 1. Ide	entification of the Substa	nce/Mixture and of	the Company/Ur	ndertaking		
.1	Produc	t Code:	400004/400006					
	Produc	t Name:	Precoated (Mouse Anti-	Rabbit IgG) EIA 96-V	Vell Plate (strip or	solid)		
.2	Releva	nt identified uses of t	ne substance or mixture	and uses advised a	igainst:			
	Relev	ant identified uses:	For research use only, r	ot for human or vete	erinary use.			
.3	Details	of the Supplier of the	Safety Data Sheet:					
	Comp	bany Name:	Cayman Chemical Com	pany				
			1180 E. Ellsworth Rd.					
	Web	site address:	Ann Arbor, MI 48108 www.caymanchem.com					
		nation:	Cayman Chemical Com		+1 (73	4)971-3335		
.4		ency telephone numb	-	pully	11 (70-	1011 0000		
.4	-	gency Contact:	CHEMTREC Within US	A and Canada <sup>.</sup>	+1 (80	0)424-9300		
	Line	geney contact.	CHEMTREC Outside US			3)527-3887		
			Section 2. Ha	zards Identifi	cation	<u>·</u>		
2.1	Classif	ication of the Substar			cation			
2.2		Elements:						
	CHC	Signal Word:	None					
		Hazard Phrases:	None					
			ently available data this sub	ostance or mixture is	not classifiable ac	cording to GHS.		
		Precaution Phrases:	,			<b>3 1 1</b>		
	No pł	No phrases apply.						
	GHS	Response Phrases:						
	No pł	nrases apply.						
	GHS	Storage and Disposa	Phrases:					
	Pleas	e refer to Section 7 for	Storage and Section 13 fo	r Disposal informatio	on.			
2.3			aterial may be irritating to			piratory tract.		
	Effects		ay be harmful by inhalation	-	-			
			ay cause eye, skin, or response			been thoroughly investigated		
					-			
		1	n 3. Compositior	1/Information	on Ingreale	nts		
CAS RTE	5 # / CS #	Hazardous Compor REACH Registration	ents (Chemical Name)/ n No.	Concentration	EC No./ EC Index No.	GHS Classification		
NA			Rabbit IgG) EIA 96-Well	100.0 %	NA	No data available.		
NA		Plate			NA			



#### SAFETY DATA SHEET coated (Mouse Anti-Rabbit IgG) EIA 96-

Precoated (Mouse Anti-Rabbit IgG) EIA 96-Well Plate (strip or solid) Superse

Revision: 03/26/2018 Supersedes Revision: 01/23/2018

		Section 4. First Aid Measures
4.1	Description of First Aid	
	Measures:	
	In Case of Inhalation:	Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
	In Case of Skin Contact:	Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
	In Case of Eye Contact:	Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.
	In Case of Ingestion:	Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
		Section 5. Fire Fighting Measures
5.1	Suitable Extinguishing	Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
	Media:	Use water spray to cool fire-exposed containers.
	Unsuitable Extinguishing Media:	A solid water stream may be inefficient.
5.2	Flammable Properties ar	dNo data available.
	Hazards:	
		No data available.
	Flash Pt:	No data.
	Explosive Limits:	LEL: No data. UEL: No data.
	Autoignition Pt:	No data.
5.3	Fire Fighting Instructions	s: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or
		equivalent), and full protective gear to prevent contact with skin and eyes.
		Section 6. Accidental Release Measures
6.1	Protective Precautions,	Avoid raising and breathing dust, and provide adequate ventilation.
	Protective Equipment an Emergency Procedures:	<b>d</b> As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
6.2	Environmental Precautions:	Take steps to avoid release into the environment, if safe to do so.
6.3		r Contain spill and collect, as appropriate.
		ngTransfer to a chemical waste container for disposal in accordance with local regulations.
	Up:	
		Section 7. Handling and Storage
7.1	Precautions To Be Taker	Avoid breathing dust/fume/gas/mist/vapours/spray.
	in Handling:	Avoid prolonged or repeated exposure.
7.2	Precautions To Be Taker	Keep container tightly closed.
	in Storing:	Store in accordance with information listed on the product insert.
	Sec	tion 8. Exposure Controls/Personal Protection
8.1	Exposure Parameters:	



## SAFETY DATA SHEET Precoated (Mouse Anti-Rabbit IgG) EIA 96-Well

Plate (strip or solid)

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		That (Strip of Solid) Supersedes Revision. 01/23/2016
8.2	Exposure Controls:	
8.2.1	Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne
	(Ventilation etc.):	levels below recommended exposure limits.
8.2.2	Personal protection equi	pment:
	Eye Protection:	Safety glasses
	Protective Gloves:	Compatible chemical-resistant gloves
	Other Protective Clothing	g:Lab coat
	Respiratory Equipment	NIOSH approved respirator, as conditions warrant.
	(Specify Type):	
	Work/Hygienic/Maintenar	n Do not take internally.
	ce Practices:	Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower Wash thoroughly after handling.
		No data available.
	S	ection 9. Physical and Chemical Properties
9.1	Information on Basic Phy	sical and Chemical Properties
	Physical States:	[] Gas [] Liquid [X] Solid
	Appearance and Odor:	Plate
	pH:	No data.
	Melting Point:	No data.
	Boiling Point:	No data.
	Flash Pt:	No data.
	Evaporation Rate:	No data.
	Flammability (solid, gas)	No data available.
	Explosive Limits:	LEL: No data. UEL: No data.
	Vapor Pressure (vs. Air o	or mm No data.
	Hg):	
	Vapor Density (vs. Air = 1	I): No data.
	Specific Gravity (Water =	
	Solubility in Water:	No data.
	Octanol/Water Partition	No data.
	Coefficient:	
		No data.
	Autoignition Pt:	
	Decomposition Temperat	No data.
	Viscosity:	No data.
9.2	Other Information	
	Percent Volatile:	No data.
		Section 10. Stability and Reactivity
10.1	Reactivity:	No data available.
10.2	Stability:	Unstable [ ] Stable [ X ]
10.3	Stability Note(s):	Stable if stored in accordance with information listed on the product insert.
	Polymerization:	Will occur [ ] Will not occur [ X ]
10.4	Conditions To Avoid:	No data available.
10.5	Incompatibility - Material	
.0.5	To Avoid:	
10.0	Hazardous	No data available.
10.6	Παζαι υυμς	
		Multi-region forma



### SAFETY DATA SHEET Precoated (Mouse Anti-Rabbit IgG) EIA 96-Well

Plate (strip or solid)

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Decomposition or

Byproducts:

## Section 11. Toxicological Information

11.1	Informa Toxicolo	tion on ogical Effects:	The toxicological effects of this pr	oduct have not be	en thoroughly st	udied.	
CAS	#	Hazardous Com	ponents (Chemical Name)	NTP	IARC	ACGIH	OSHA
	NA	Precoated (Mous	se Anti-Rabbit IgG) EIA 96-Well Pla	ite n.a.	n.a.	n.a.	n.a.
		•	Section 12. Ecolog	gical Informa	ition		•
12.1	Toxicity	:	Avoid release into the environme	nt.			
			Runoff from fire control or dilution	water may cause	pollution.		
12.2		ence and	No data available.				
	Degrada	ability:					
12.3	Bioaccu Potentia	imulative	No data available.				
12.4	Mobility		No data available.				
12.5	Results	of PBT and vPvB	No data available.				
	assessn	nent:					
12.6	Other ad	dverse effects:	No data available.				
			Section 13. Dispose	al Considera	itions		
13.1	Waste D	isposal Method:	Dispose in accordance with local	, state, and federal	regulations.		
			Section 14. Trans	port Informa	ation		
14.1	LAND T	RANSPORT (US	DOT):				
D	OT Prope OT Hazar N/NA Nur		: Not dangerous goods.				
14.1	LAND T	RANSPORT (Eur	opean ADR/RID):				
		hipping Name:	Not dangerous goods.				
U	N Numbe	r:					
Н	azard Cla						
14.3		ANSPORT (ICAO/	•				
		Shipping Name:	Not dangerous goods.				
	ional Tra	nsport	Transport in accordance with loc	al, state, and feder	al regulations.		
Infor	mation:						
			Section 15. Regula	atory Informa	ation		
EPA	SARA (Su	perfund Amendn	nents and Reauthorization Act of	1986) Lists			
CAS	#	Hazardous Com	ponents (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 31	3 (TRI)
	NA	Precoated (Mous Plate	se Anti-Rabbit IgG) EIA 96-Well	No	No	No	
CAS	#	Hazardous Com	ponents (Chemical Name)	Other US EPA or	State Lists		
	NA	Precoated (Mous	se Anti-Rabbit IgG) EIA 96-Well	CAA HAP,ODC: I	No; CWA NPDE	S: No; TSCA	: No; CA



#### SAFETY DATA SHEET oated (Mouse Anti-Rabbit IgG) EIA 96-

Precoated (Mouse Anti-Rabbit IgG) EIA 96-Well Plate (strip or solid)

CHEMICAL	Liate (Strip of Solid) Supersedes Revision: 01/23/2018
Regulatory Information Statement:	This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.
	Section 16. Other Information
Revision Date:	03/26/2018
Additional Information About This Product:	No data available.
This Product: Company Policy or Disclaimer:	DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.



	CHEMICAL					Supersedes Revision: 03/28/2017	
		accord	ing to Regulation (EC) No. 190	7/2006 as amended by	y (EC) No. 1272/200	8	
		Section 1. Ide	entification of the Substan	nce/Mixture and of	the Company/Ur	ndertaking	
.1	Produc	t Code:	400012				
	Produc	t Name:	96-Well Cover Sheet				
.2	Releva	nt identified uses of t	he substance or mixture a	nd uses advised a	gainst:		
	Relev	ant identified uses:	For research use only, no	ot for human or veter	rinary use.		
.3	Details	of the Supplier of the	Safety Data Sheet:				
	Comp	oany Name:	Cayman Chemical Comp	pany			
			1180 E. Ellsworth Rd. Ann Arbor, MI 48108				
	Webs	site address:	www.caymanchem.com				
		nation:	Cayman Chemical Comp	bany	+1 (734	4)971-3335	
.4	Emerge	ency telephone numb			<b>(</b> -	,	
	-	gency Contact:	CHEMTREC Within USA	and Canada:	+1 (800	0)424-9300	
			CHEMTREC Outside US	A and Canada:	+1 (703	3)527-3887	
			Section 2. Haz	zards Identifio	cation		
2.1	Classifi	ication of the Substar					
2.2	Label E	lements:					
	GHS :	Signal Word:	None				
		Hazard Phrases:	None				
	Based on evaluation of currently available data this substance or mixture is not classifiable according to GHS.						
	GHS	Precaution Phrases:					
	No ph	rases apply.					
	GHS	Response Phrases:					
	No ph	rases apply.					
		Storage and Disposa					
			Storage and Section 13 for	•			
2.3			laterial may be irritating to the second s		••	piratory tract.	
	Effects		lay be harmful by inhalation lay cause eye, skin, or resp		•		
			• • •			been thoroughly investigated	
			n 3 Composition	/m/m/manon		110	
		1	n 3. Composition	1			
CAS	;#/ CS#	Hazardous Compor	ents (Chemical Name)/	Concentration	EC No./ EC Index No.	GHS Classification	
		1	ents (Chemical Name)/	1	EC No./		



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		Section 4. First Aid Measures
4.1	Description of First Aid	
	Measures:	
	In Case of Inhalation:	Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
	In Case of Skin Contact:	Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
	In Case of Eye Contact:	Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.
	In Case of Ingestion:	Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
		Section 5. Fire Fighting Measures
5.1	Suitable Extinguishing	Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
	Media:	Use water spray to cool fire-exposed containers.
	Unsuitable Extinguishing	A solid water stream may be inefficient.
	Media:	
5.2	Flammable Properties an	dNo data available.
	Hazards:	
		No data available.
	Flash Pt:	No data.
	Explosive Limits:	LEL: No data. UEL: No data.
	Autoignition Pt:	No data.
5.3	Fire Fighting Instructions	<b>s:</b> As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.
		Section 6. Accidental Release Measures
6.1	Protective Precautions,	Avoid raising and breathing dust, and provide adequate ventilation.
	Protective Equipment an	d As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator,
	Emergency Procedures:	and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
6.2	Environmental Precautions:	Take steps to avoid release into the environment, if safe to do so.
6.3	Methods and Material Fo	r Contain spill and collect, as appropriate.
	Containment and Cleanir	ngTransfer to a chemical waste container for disposal in accordance with local regulations.
	Up:	
		Section 7. Handling and Storage
7.1	Precautions To Be Taken	Avoid breathing dust/fume/gas/mist/vapours/spray.
	in Handling:	Avoid prolonged or repeated exposure.
7.2	Precautions To Be Taken	Keep container tightly closed.
	in Storing:	Store in accordance with information listed on the product insert.
	Sec	tion 8. Exposure Controls/Personal Protection
8.1	Exposure Parameters:	



	HEMICAL	Supersedes Revision: 03/28/2017
8.2	Exposure Controls:	
8.2.1	Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne
	(Ventilation etc.):	levels below recommended exposure limits.
8.2.2	Personal protection equi	pment:
	Eye Protection:	Safety glasses
	Protective Gloves:	Compatible chemical-resistant gloves
	Other Protective Clothing	:Lab coat
	Respiratory Equipment	NIOSH approved respirator, as conditions warrant.
	(Specify Type):	
	Work/Hygienic/Maintenar	Do not take internally.
	ce Practices:	Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower
		Wash thoroughly after handling.
		No data available.
	S	ection 9. Physical and Chemical Properties
9.1	Information on Basic Phys	sical and Chemical Properties
	Physical States:	[]Gas []Liquid [X]Solid
	Appearance and Odor:	96-Well Cover Sheet
	pH:	No data.
	Melting Point:	No data.
	Boiling Point:	No data.
	Flash Pt:	No data.
	Evaporation Rate:	No data.
	Flammability (solid, gas):	No data available.
	Explosive Limits:	LEL: No data. UEL: No data.
	Vapor Pressure (vs. Air o	r mm No data.
	Hg):	
	Vapor Density (vs. Air = 1	I): No data.
	Specific Gravity (Water =	-
	Solubility in Water:	No data.
	Octanol/Water Partition	No data.
	Coefficient:	
		No data.
	Autoignition Pt:	
	Decomposition Temperat	
	Viscosity:	No data.
9.2	Other Information	
-	Percent Volatile:	No data.
		Section 10. Stability and Reactivity
10.1	Reactivity:	No data available.
10.2	Stability:	Unstable [ ] Stable [ X ]
10.3	Stability Note(s):	Stable if stored in accordance with information listed on the product insert.
	Polymerization:	Will occur [ ] Will not occur [ X ]
10.4	Conditions To Avoid:	No data available.
10.5	Incompatibility - Materials	
	To Avoid:	
10.6	Hazardous	No data available.
10.0	1 12221 4043	
I		Multi-region forma



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### **SAFETY DATA SHEET** 96-Well Cover Sheet

Byproe	lucts:					
		Section 11. Toxico	logical Inforn	nation		
	ation on logical Effects:	The toxicological effects of this	product have not be	en thoroughly stu	died.	
CAS #	Hazardous Com	ponents (Chemical Name)	NTP	IARC	ACGIH	OSHA
NA	96-Well Cover Sh	neet	n.a.	n.a.	n.a.	n.a.
		Section 12. Ecolo	ogical Informa	ation		
2.1 Toxicit	y:	Avoid release into the environm Runoff from fire control or diluti		pollution.		
2.2 Persis	ence and	No data available.				
Degrad	lability:					
	umulative	No data available.				
Potent						
	y in Soil:	No data available.				
2.5 Result assess	s of PBT and vPvB	No data available.				
	adverse effects:	No data available.				
		Section 13. Dispos	sal Considera	ations		
3.1 Waste	Disposal Method:	Dispose in accordance with loc				
		Section 14. Tran	sport Informa	ation		
14.1 LAND	TRANSPORT (US I	DOT):	-			
DOT Prop	er Shipping Name:	Not dangerous goods.				
DOT Haza						
UN/NA Nu	ımber:					
14.1 LAND	TRANSPORT (Euro	opean ADR/RID):				
ADR/RID	Shipping Name:	Not dangerous goods.				
UN Numb						
Hazard C						
		•				
	A Shipping Name:	Not dangerous goods.				
Additional Tr	ansport	Transport in accordance with lo	ocal, state, and fede	al regulations.		
		Section 15. Regu	latory Informa	ation		
EPA SARA (S	uperfund Amendm	nents and Reauthorization Act	of 1986) Lists			
CAS #	Hazardous Com	ponents (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313	i (TRI)
NA	96-Well Cover Sh	neet	No	No	No	
CAS #	Hazardous Com	ponents (Chemical Name)	Other US EPA or	State Lists		
NA	96-Well Cover Sh	neet	CAA HAP,ODC: PROP.65: No	No; CWA NPDE	S: No; TSCA:	No; CA
					Ν	lulti-region forn



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Supersedes	Revision:	03/28/2017

	Supersedes Revision: 03/28/2017
Regulatory Information	This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC)
Statement:	No.1272/2008.
	Section 16. Other Information
Revision Date:	03/26/2018
Additional Information About	No data available.
This Product:	
Company Policy or Disclaimer:	DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.



## SAFETY DATA SHEET Polysorbate 20

		ac	cording to Regulation (EC) No. 190	)7/2006 as amended b	y (EC) No. 1272/200	08		
		Section 1.	Identification of the Substan	nce/Mixture and of	the Company/U	ndertaking		
.1	Produc	t Code:	400035					
	Produc	t Name:	Polysorbate 20					
	Synony	/ms:	Tween 20™;					
2			of the substance or mixture a	and uses advised a	igainst:			
_		ant identified use			-			
3	Details	of the Supplier of	the Safety Data Sheet:					
	Comp	any Name:	Cayman Chemical Comp	bany				
			1180 E. Ellsworth Rd.					
			Ann Arbor, MI 48108					
	Web s	site address:	www.caymanchem.com					
	Inform	nation:	Cayman Chemical Comp	bany	+1 (73	4)971-3335		
.4	Emerge	ency telephone nu	imber:					
	Emer	gency Contact:	CHEMTREC Within USA	and Canada:	+1 (80	0)424-9300		
			CHEMTREC Outside US	SA and Canada:	+1 (70	3)527-3887		
			Section 2. Haz	zards Identifi	cation			
.1	Classif	ication of the Sub	stance or Mixture:					
.2	Label E	lements:						
	GHS	Signal Word:	None					
	GHS Signal Word: NONe GHS Hazard Phrases:							
	Base	d on evaluation of c	currently available data this sub	stance or mixture is	not classifiable ad	ccording to GHS.		
		Precaution Phras	-			<b>3 1 1</b>		
		rases apply.						
	•	Response Phrase	c.					
		rases apply.	5.					
	-		acal Phrasas					
		Storage and Disp	for Storage and Section 13 for	Dianagal informatic				
	Fleas			Disposal informatic	лт.			
2	A alveana		<b>U</b>	•	nee and upper rea	poiroton (troot		
.3		se Human Health	Material may be irritating to the	he mucous membra		spiratory tract.		
.3			Material may be irritating to the May be harmful by inhalation	he mucous membra n, ingestion, or skin a	absorption.	spiratory tract.		
.3		se Human Health	Material may be irritating to the May be harmful by inhalation May cause eye, skin, or resp	he mucous membra n, ingestion, or skin a niratory system irritat	absorption. tion.			
2.3		se Human Health s and Symptoms:	Material may be irritating to the May be harmful by inhalation May cause eye, skin, or resp To the best of our knowledge	he mucous membra a, ingestion, or skin a iratory system irritat e, the toxicological p	absorption. tion. roperties have no	t been thoroughly investigate		
	Effects	se Human Health s and Symptoms: Sec	Material may be irritating to the May be harmful by inhalation May cause eye, skin, or resp To the best of our knowledge stion 3. Composition	he mucous membra a, ingestion, or skin a piratory system irritat e, the toxicological p //Information	absorption. tion. roperties have no on Ingredie	t been thoroughly investigate		
CAS	Effects	se Human Health and Symptoms: Sec Hazardous Com	Material may be irritating to the May be harmful by inhalation May cause eye, skin, or resp To the best of our knowledge stion 3. Composition	he mucous membra a, ingestion, or skin a iratory system irritat e, the toxicological p	absorption. tion. roperties have no	t been thoroughly investigate		
	Effects	se Human Health s and Symptoms: Sec Hazardous Com REACH Registra	Material may be irritating to the May be harmful by inhalation May cause eye, skin, or resp To the best of our knowledge stion 3. Composition ponents (Chemical Name)/ ation No.	he mucous membra a, ingestion, or skin a piratory system irritat e, the toxicological p //Information Concentration	absorption. tion. roperties have not ON INGREDIE EC No./ EC Index No.	t been thoroughly investigate NtS GHS Classification		
CAS RTE 900	Effects	se Human Health s and Symptoms: Sec Hazardous Com REACH Registra	Material may be irritating to the May be harmful by inhalation May cause eye, skin, or resp To the best of our knowledge stion 3. Composition ponents (Chemical Name)/ ation No.	he mucous membra a, ingestion, or skin a piratory system irritat e, the toxicological p //Information	absorption. tion. roperties have not on Ingredie EC No./	t been thoroughly investigate		



## SAFETY DATA SHEET Polysorbate 20

Revision: 03/26/2018 Supersedes Revision: 01/23/2018

		Section 4. First Aid Measures
4.1	Description of First Aid	
	Measures:	
	In Case of Inhalation:	Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
	In Case of Skin Contact:	Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
	In Case of Eye Contact:	Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.
	In Case of Ingestion:	Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
		Section 5. Fire Fighting Measures
5.1	Suitable Extinguishing	Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
	Media:	Use water spray to cool fire-exposed containers.
	Unsuitable Extinguishing	A solid water stream may be inefficient.
	Media:	
5.2	Flammable Properties an	dNo data available.
	Hazards:	
	Flock Dt.	No data available.
	Flash Pt:	No data.
	Explosive Limits:	LEL: No data. UEL: No data. No data.
5.2	Autoignition Pt:	
5.3	Fire Fighting Instructions	<b>s:</b> As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.
		Section 6. Accidental Release Measures
6.1	Protective Precautions,	Avoid raising and breathing dust, and provide adequate ventilation.
	Protective Equipment an Emergency Procedures:	<b>d</b> As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
6.2	Environmental Precautions:	Take steps to avoid release into the environment, if safe to do so.
6.3	Methods and Material Fo	r Contain spill and collect, as appropriate.
	Containment and Cleanir	gTransfer to a chemical waste container for disposal in accordance with local regulations.
	Up:	
		Section 7. Handling and Storage
7.1	Precautions To Be Taken	Avoid breathing dust/fume/gas/mist/vapours/spray.
	in Handling:	Avoid prolonged or repeated exposure.
7.2	Precautions To Be Taken	Keep container tightly closed.
	in Storing:	Store in accordance with information listed on the product insert.
	Sec	tion 8. Exposure Controls/Personal Protection
8.1	Exposure Parameters:	



# SAFETY DATA SHEET

	-	SALLIT DATA SILLI	1 agoi o oi o
6		Polysorbate 20	Revision: 03/26/2018
ay	men		Supersedes Revision: 01/23/2018
8.2	Exposure Controls:		
8.2.1	Engineering Controls	Use process enclosures, local exhaust ventilation, or other engine	ering controls to control airborne
	(Ventilation etc.):	levels below recommended exposure limits.	
8.2.2	Personal protection equi	pment:	
	Eye Protection:	Safety glasses	
	Protective Gloves:	Compatible chemical-resistant gloves	
	Other Protective Clothing	g:Lab coat	
	Respiratory Equipment (Specify Type):	NIOSH approved respirator, as conditions warrant.	
	Work/Hygienic/Maintena	n Do not take internally.	
	ce Practices:	Facilities storing or utilizing this material should be equipped with	an eyewash facility and a safety
		shower.	
		Wash thoroughly after handling.	
		No data available.	
	S	ection 9. Physical and Chemical Properties	3
9.1		sical and Chemical Properties	
5.1	Physical States:	[]Gas [X]Liquid []Solid	
	Appearance and Odor:	A pale yellow viscous liquid	
	pH:	No data.	
	Melting Point:	No data.	
	Boiling Point:	No data.	
	Flash Pt:	No data.	
	Evaporation Rate:	No data.	
	Flammability (solid, gas)		
	Explosive Limits:	LEL: No data. UEL: No data.	
	Vapor Pressure (vs. Air o		
	Hg):		
	Vapor Density (vs. Air = <sup>2</sup>	I): No data.	
	Specific Gravity (Water =		
	Solubility in Water:	No data.	
	Solubility Notes:	Soluble in: water;	
	Octanol/Water Partition	No data.	
	Coefficient:		
	Autoignition Pt:	No data.	
	Decomposition Tempera		
	Viscosity:	No data.	
0 2	Other Information		
9.2			

**Percent Volatile:** 

Molecular Formula & Weight:

N.A.

C58H114O26

1227.5



## SAFETY DATA SHEET Polysorbate 20

Multi-region format

			Section 10. Stability and	Reactiv	rity		
10.1	Reactivity:		No data available.				
10.2	Stability:		Unstable [ ] Stable [ X ]				
10.3	Stability No	te(s):	Stable if stored in accordance with information	ation listed o	n the product in	sert.	
	Polymerizat	tion:	Will occur [ ] Will not occur [ X ]				
10.4	Conditions	To Avoid:	No data available.				
10.5	Incompatibi	ility - Materials	strong oxidizing agents				
	To Avoid:						
10.6	Hazardous		carbon dioxide				
	Decomposi	tion or	carbon monoxide				
	Byproducts	:					
			Section 11. Toxicological	Informa	tion		
11.1	Information	on	The toxicological effects of this product ha	ve not been	thoroughly stud	lied.	
	Toxicologic	al Effects:	Polysorbate 20 - Toxicity Data: Oral LD50	(rat): 36700	uL/kg; Intraper	itoneal LD50	(rat): 3850
			mg/kg; Oral LD50 (mouse): >33 gm/kg; In	-			;
	Chronic Tox	xicological	Polysorbate 20 - Investigated as a drug, p	•	•		
	Effects:		Only select Registry of Toxic Effects of Ch		tances (RTECS	S) data is pre	sented here
			See actual entry in RTECS for complete in				
•	• •		Polysorbate 20 RTECS Number: TR74000				
	nogenicity:		NTP? No IARC Monographs? No	1	gulated? No		
CAS			ponents (Chemical Name)	NTP	IARC	ACGIH	OSHA
900			orbitan Monolaurate (polysorbate 20; decanoate, poly(oxy-1,2-ethanediyl)	n.a.	n.a.	n.a.	n.a.
		rivatives)					
			Section 12 Ecological I	formati	 	ļ	
			Section 12. Ecological In	IIOIIIIau	511		
10.1	Toxioity		Avoid release into the environment				
12.1	Toxicity:		Avoid release into the environment.		llution		
	-	and	Runoff from fire control or dilution water m	ay cause po	llution.		
	Persistence			ay cause po	llution.		
12.2	Persistence Degradabili	ty:	Runoff from fire control or dilution water m No data available.	ay cause po	llution.		
12.2	Persistence Degradabili Bioaccumu	ty:	Runoff from fire control or dilution water m	ay cause po	llution.		
12.2 12.3	Persistence Degradabili Bioaccumul Potential:	ty: lative	Runoff from fire control or dilution water m No data available. No data available.	ay cause po	llution.		
12.2 12.3 12.4	Persistence Degradabili Bioaccumul Potential: Mobility in S	ty: lative Soil:	Runoff from fire control or dilution water m No data available. No data available. No data available.	ay cause po	llution.		
12.2 12.3 12.4	Persistence Degradabili Bioaccumul Potential: Mobility in S Results of F	ty: lative Soil: PBT and vPvB	Runoff from fire control or dilution water m No data available. No data available.	ay cause po	llution.		
12.2 12.3 12.4 12.5	Persistence Degradabili Bioaccumul Potential: Mobility in S Results of F assessment	ty: lative Soil: PBT and vPvB t:	Runoff from fire control or dilution water m No data available. No data available. No data available. No data available.	ay cause po	llution.		
12.2 12.3 12.4 12.5	Persistence Degradabili Bioaccumul Potential: Mobility in S Results of F	ty: lative Soil: PBT and vPvB t:	Runoff from fire control or dilution water m No data available. No data available. No data available.	ay cause po	llution.		
12.2 12.3 12.4 12.5	Persistence Degradabili Bioaccumul Potential: Mobility in S Results of F assessment	ty: lative Soil: PBT and vPvB t:	Runoff from fire control or dilution water m No data available. No data available. No data available. No data available.	ay cause po	llution.		
12.2 12.3 12.4 12.5	Persistence Degradabili Bioaccumul Potential: Mobility in S Results of F assessment	ty: lative Soil: PBT and vPvB t:	Runoff from fire control or dilution water m No data available. No data available. No data available. No data available.	ay cause po	llution.		
12.2 12.3 12.4 12.5	Persistence Degradabili Bioaccumul Potential: Mobility in S Results of F assessment	ty: lative Soil: PBT and vPvB t:	Runoff from fire control or dilution water m No data available. No data available. No data available. No data available.	ay cause po	llution.		
12.2 12.3 12.4 12.5	Persistence Degradabili Bioaccumul Potential: Mobility in S Results of F assessment	ty: lative Soil: PBT and vPvB t:	Runoff from fire control or dilution water m No data available. No data available. No data available. No data available.	ay cause po	llution.		
12.1 12.2 12.3 12.4 12.5 12.6	Persistence Degradabili Bioaccumul Potential: Mobility in S Results of F assessment	ty: lative Soil: PBT and vPvB t:	Runoff from fire control or dilution water m No data available. No data available. No data available. No data available.	ay cause po	llution.		
12.2 12.3 12.4 12.5	Persistence Degradabili Bioaccumul Potential: Mobility in S Results of F assessment	ty: lative Soil: PBT and vPvB t:	Runoff from fire control or dilution water m No data available. No data available. No data available. No data available.	ay cause po	llution.		
12.2 12.3 12.4 12.5	Persistence Degradabili Bioaccumul Potential: Mobility in S Results of F assessment	ty: lative Soil: PBT and vPvB t:	Runoff from fire control or dilution water m No data available. No data available. No data available. No data available.	ay cause po	llution.		
12.2 12.3 12.4 12.5	Persistence Degradabili Bioaccumul Potential: Mobility in S Results of F assessment	ty: lative Soil: PBT and vPvB t:	Runoff from fire control or dilution water m No data available. No data available. No data available. No data available.	ay cause po	llution.		
2.2 2.3 2.4 2.5	Persistence Degradabili Bioaccumul Potential: Mobility in S Results of F assessment	ty: lative Soil: PBT and vPvB t:	Runoff from fire control or dilution water m No data available. No data available. No data available. No data available.	ay cause po	llution.		
2.2 2.3 2.4 2.5	Persistence Degradabili Bioaccumul Potential: Mobility in S Results of F assessment	ty: lative Soil: PBT and vPvB t:	Runoff from fire control or dilution water m No data available. No data available. No data available. No data available.	ay cause po	llution.		



## SAFETY DATA SHEET Polysorbate 20

Page: 5 of 5



## SAFETY DATA SHEET EIA Tracer Dye

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-						
		according to Regulation (EC) No. 19	07/2006 as amended I	by (EC) No. 1272/20	08	
	Section	1. Identification of the Substan	nce/Mixture and o	f the Company/U	Indertaking	
.1	Product Code:	400040				
	Product Name:	EIA Tracer Dye				
.2	Relevant identified us	es of the substance or mixture	and uses advised	against:		
	Relevant identified u	ses: For research use only, n	not for human or vet	erinary use.		
.3	Details of the Supplier	of the Safety Data Sheet:				
	Company Name:	Cayman Chemical Com	pany			
		1180 E. Ellsworth Rd. Ann Arbor, MI 48108				
	Web site address:	www.caymanchem.com				
	Information:	Cayman Chemical Com		+1 (73	34)971-3335	
.4	Emergency telephone			,	,	
	Emergency Contact:		A and Canada:	+1 (80	00)424-9300	
		CHEMTREC Outside US	SA and Canada:	+1 (70	03)527-3887	
		Section 2. Ha	zards Identif	ication		
	Classification of the S					
1.1						
2.1	Skin Corrosion/Irrita	tion, Category 3				
	Skin Corrosion/Irrita Label Elements: GHS Signal Word:	tion, Category 3 Warning				
	Label Elements: GHS Signal Word: GHS Hazard Phrase	Warning s:				
	Label Elements: GHS Signal Word:	Warning S: in irritation.				
	Label Elements: GHS Signal Word: GHS Hazard Phrase H316: Causes mild sk	Warning S: in irritation.				
	Label Elements: GHS Signal Word: GHS Hazard Phrase H316: Causes mild sk GHS Precaution Phr	Warning s: in irritation. ases:				
	Label Elements: GHS Signal Word: GHS Hazard Phrase H316: Causes mild sk GHS Precaution Phr No phrases apply. GHS Response Phra	Warning s: in irritation. ases:	attention.			
	Label Elements: GHS Signal Word: GHS Hazard Phrase H316: Causes mild sk GHS Precaution Phr No phrases apply. GHS Response Phra P332+313: If skin irrit GHS Storage and Di	Warning s: tin irritation. ases: ases: ation occurs, get medical advice/a sposal Phrases:				
2.2	Label Elements: GHS Signal Word: GHS Hazard Phrase H316: Causes mild sk GHS Precaution Phr No phrases apply. GHS Response Phra P332+313: If skin irrit GHS Storage and Di Please refer to Sectio	Warning 5: in irritation. ases: ation occurs, get medical advice/a sposal Phrases: n 7 for Storage and Section 13 fo		on.		
2.1 2.2 2.3	Label Elements: GHS Signal Word: GHS Hazard Phrase H316: Causes mild sk GHS Precaution Phr No phrases apply. GHS Response Phra P332+313: If skin irrit GHS Storage and Di Please refer to Sectio Adverse Human Heat	Warning s: tin irritation. ases: ases: ation occurs, get medical advice/a sposal Phrases: n 7 for Storage and Section 13 fo th Causes mild skin irritation.	r Disposal informati			
2.2	Label Elements: GHS Signal Word: GHS Hazard Phrase H316: Causes mild sk GHS Precaution Phr No phrases apply. GHS Response Phra P332+313: If skin irrit GHS Storage and Di Please refer to Sectio	Warning s: in irritation. ases: ation occurs, get medical advice/a sposal Phrases: n 7 for Storage and Section 13 fo h Causes mild skin irritation. s: Material may be irritating to	r Disposal information	anes and upper re	spiratory tract.	
2.2	Label Elements: GHS Signal Word: GHS Hazard Phrase H316: Causes mild sk GHS Precaution Phr No phrases apply. GHS Response Phra P332+313: If skin irrit GHS Storage and Di Please refer to Sectio Adverse Human Heat	Warning s: in irritation. ases: ation occurs, get medical advice/a sposal Phrases: n 7 for Storage and Section 13 fo h Causes mild skin irritation. s: Material may be irritating to the May be harmful by inhalation	r Disposal information the mucous membra n, ingestion, or skin	anes and upper re	spiratory tract.	
2.2	Label Elements: GHS Signal Word: GHS Hazard Phrase H316: Causes mild sk GHS Precaution Phr No phrases apply. GHS Response Phra P332+313: If skin irrit GHS Storage and Di Please refer to Sectio Adverse Human Heat	Warning s: in irritation. ases: ation occurs, get medical advice/a sposal Phrases: n 7 for Storage and Section 13 fo h Causes mild skin irritation. s: Material may be irritating to	r Disposal information the mucous membra n, ingestion, or skin	anes and upper re	spiratory tract.	
.2	Label Elements: GHS Signal Word: GHS Hazard Phrase H316: Causes mild sk GHS Precaution Phr No phrases apply. GHS Response Phra P332+313: If skin irrit GHS Storage and Di Please refer to Sectio Adverse Human Heat	Warning s: tin irritation. ases: ases: ation occurs, get medical advice/a sposal Phrases: n 7 for Storage and Section 13 fo th Causes mild skin irritation. s: Material may be irritating to May be harmful by inhalation May cause eye or respirator	r Disposal information the mucous membra n, ingestion, or skin y system irritation.	anes and upper rea		gated
2.2	Label Elements: GHS Signal Word: GHS Hazard Phrase: H316: Causes mild sk GHS Precaution Phr No phrases apply. GHS Response Phra P332+313: If skin irrit GHS Storage and Di Please refer to Sectio Adverse Human Healt Effects and Symptom	Warning s: in irritation. ases: ation occurs, get medical advice/a sposal Phrases: n 7 for Storage and Section 13 fo h Causes mild skin irritation. s: Material may be irritating to the May be harmful by inhalation May cause eye or respirator May temporarily stain skin.	r Disposal information the mucous membra n, ingestion, or skin y system irritation. e, the toxicological p	anes and upper rea absorption. properties have no	t been thoroughly investi	gated
2.2 2.3	Label Elements: GHS Signal Word: GHS Hazard Phrase: H316: Causes mild sk GHS Precaution Phr No phrases apply. GHS Response Phra P332+313: If skin irrit GHS Storage and Di Please refer to Section Adverse Human Healt Effects and Symptom Sec	Warning s: in irritation. ases: ases: ation occurs, get medical advice/a sposal Phrases: n 7 for Storage and Section 13 fo th Causes mild skin irritation. s: Material may be irritating to May be harmful by inhalation May be harmful by inhalation May cause eye or respirator May temporarily stain skin. To the best of our knowledge ection 3. Composition	r Disposal information the mucous membra n, ingestion, or skin y system irritation. e, the toxicological p	anes and upper rea absorption. properties have no On Ingredie EC No./	t been thoroughly investi	gated
2.2 2.3	Label Elements: GHS Signal Word: GHS Hazard Phrase: H316: Causes mild sk GHS Precaution Phr No phrases apply. GHS Response Phra P332+313: If skin irrit GHS Storage and Di Please refer to Sectio Adverse Human Healt Effects and Symptom	Warning s: in irritation. ases: ases: ation occurs, get medical advice/a sposal Phrases: n 7 for Storage and Section 13 fo th Causes mild skin irritation. s: Material may be irritating to May be harmful by inhalation May be harmful by inhalation May cause eye or respirator May temporarily stain skin. To the best of our knowledge ection 3. Composition	r Disposal information the mucous membra n, ingestion, or skin y system irritation. e, the toxicological p n/Information	anes and upper rea absorption. properties have no <u>On Ingredie</u>	t been thoroughly investi nts	gated



## SAFETY DATA SHEET EIA Tracer Dye

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		Section 4. First Aid Measures
4.1	Description of First Aid	
	Measures:	
	In Case of Inhalation:	Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
	In Case of Skin Contact:	Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
	In Case of Eye Contact:	Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.
	In Case of Ingestion:	Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
		Section 5. Fire Fighting Measures
5.1	Suitable Extinguishing	Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
	Media:	Use water spray to cool fire-exposed containers.
	Unsuitable Extinguishing	A solid water stream may be inefficient.
	Media:	
5.2	Flammable Properties an Hazards:	<b>d</b> No data available.
		No data available.
	Flash Pt:	No data.
	Explosive Limits:	LEL: No data. UEL: No data.
	Autoignition Pt:	No data.
5.3	Fire Fighting Instructions	: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.
		Section 6. Accidental Release Measures
6.1	Protective Precautions,	Avoid breathing vapors and provide adequate ventilation.
	Protective Equipment an	d As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator,
	Emergency Procedures:	and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
6.2	Environmental	Take steps to avoid release into the environment, if safe to do so.
	Precautions:	
6.3		r Contain spill and collect, as appropriate.
		ngTransfer to a chemical waste container for disposal in accordance with local regulations.
	Up:	
		Section 7. Handling and Storage
7.1	Precautions To Be Taken	Avoid breathing dust/fume/gas/mist/vapours/spray.
	in Handling:	Avoid prolonged or repeated exposure.
7.2	Precautions To Be Taken	Keep container tightly closed.
	in Storing:	Store in accordance with information listed on the product insert.
	Sec	tion 8. Exposure Controls/Personal Protection
8.1	Exposure Parameters:	



## SAFETY DATA SHEET EIA Tracer Dye

	NEMICAL	Supersedes Revision: 01/23/2018
8.2	Exposure Controls:	
8.2.1	Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne
	(Ventilation etc.):	levels below recommended exposure limits.
8.2.2	Personal protection equip	oment:
	Eye Protection:	Safety glasses
	Protective Gloves:	Compatible chemical-resistant gloves
	Other Protective Clothing:	:Lab coat
	Respiratory Equipment	NIOSH approved respirator, as conditions warrant.
	(Specify Type):	
	Work/Hygienic/Maintenan	Do not take internally.
		Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety
		shower.
		Wash thoroughly after handling.
		No data available.
	Se	ection 9. Physical and Chemical Properties
9.1		ical and Chemical Properties
	Physical States:	[]Gas [X]Liquid []Solid
	Appearance and Odor:	A red liquid
	pH:	No data.
	Melting Point:	No data.
	Boiling Point:	No data.
	Flash Pt:	No data.
	Evaporation Rate:	No data.
	Flammability (solid, gas):	No data available.
	Explosive Limits:	LEL: No data. UEL: No data.
	Vapor Pressure (vs. Air or	
	Hg):	
	Vapor Density (vs. Air = 1)	No data.
	Specific Gravity (Water = 1	
	Solubility in Water:	No data.
	Octanol/Water Partition	No data.
	Coefficient:	
	Autoignition Pt:	No data.
	Decomposition Temperatu	
	Viscosity:	No data.
9.2	Other Information	
	Percent Volatile:	No data.
		Section 10. Stability and Reactivity
10.1	Reactivity:	No data available.
10.2	Stability:	Unstable [ ] Stable [ X ]
10.3	Stability Note(s):	Stable if stored in accordance with information listed on the product insert.
	Polymerization:	Will occur [ ] Will not occur [ X ]
10.4	Conditions To Avoid:	No data available.
10.5	Incompatibility - Materials	organic materials
	To Avoid:	strong acids
		strong oxidizing agents
		Multi-region format



## SAFETY DATA SHEET EIA Tracer Dye

Hazardous Decompositior Byproducts:	n or	No data available.						
		Section 11. Toxicologica	al Informa	ation				
11.1 Information on Toxicological Effects: Chronic Toxicological Effects:		Sodium Hydroxide - Toxicity Data: Intrap mg/kg; Sodium Hydroxide - Investigated as a m Only select Registry of Toxic Effects of 0 See actual entry in RTECS for complete Sodium Hydroxide RTECS Number: WE	beritoneal LD utagen, repro Chemical Sut information. 34900000	50 (mouse): 40 oductive effecto ostances (RTE)	) mg/kg; Oral T or, and tumorig	len.		
				-	400111	00114		
		ponents (Chemical Name)				n.a.		
					11.d.	11.a.		
		Section 12. Ecological	Informat	lion				
Toxicity:		Avoid release into the environment. Runoff from fire control or dilution water	may cause p	ollution.				
Persistence an Degradability:	d	No data available.						
Bioaccumulativ Potential:	ve	No data available.						
Mobility in Soil	:	No data available.						
Results of PBT assessment:	and vPvB	No data available.						
Other adverse	effects:	No data available.						
		Section 13. Disposal Co	onsiderat	tions				
Waste Disposa	I Method:	Dispose in accordance with local, state,	and federal r	egulations.				
		Section 14. Transport	Informat	tion				
LAND TRANS	PORT (US I	ООТ):						
OT Hazard Class	-	Not dangerous goods.						
LAND TRANS	PORT (Euro	. ,						
	g Name:	Not dangerous goods.						
AIR TRANSPO	RT (ICAO/I	ΑΤΑ):						
	-	-						
tional Transport			e, and federa	I regulations.				
	Decomposition Byproducts: Information on Toxicological E Chronic Toxico Effects: nogenicity: # Hazar NA EIA T Toxicity: Persistence an Degradability: Bioaccumulativ Potential: Mobility in Soil Results of PBT assessment: Other adverse Waste Disposa UNHA Number: LAND TRANSI OOT Proper Shipp OOT Hazard Class IN/NA Number: LAND TRANSI MOR/RID Shipping IN Number: lazard Class: AIR TRANSPO	Decomposition or Byproducts: Information on Toxicological Effects: Chronic Toxicological Effects: nogenicity: # Hazardous Com NA ElA Tracer Dye Toxicity: Persistence and Degradability: Bioaccumulative Potential: Mobility in Soil: Results of PBT and vPvB assessment: Other adverse effects: Waste Disposal Method: Char adverse effects: Waste Disposal Method: DOT Proper Shipping Name: DOT Hazard Class: IN/NA Number: LAND TRANSPORT (US D OT Hazard Class: IN/NA Number: LAND TRANSPORT (Euro ADR/RID Shipping Name: IN Number: Iazard Class: AIR TRANSPORT (ICAO/I CAO/IATA Shipping Name: tional Transport	Decomposition or Byproducts: Section 11. Toxicological Information on The toxicological effects of this product I Toxicological Effects: Sodium Hydroxide - Toxicity Data: Intrag- mg/kg; Chronic Toxicological Sodium Hydroxide - Investigated as a m Effects: Only select Registry of Toxic Effects of O See actual entry in RTECS for complete Sodium Hydroxide RTECS Number: WE nogenicity: NTP? No IARC Monographs? No # Hazardous Components (Chemical Name) NA EIA Tracer Dye Section 12. Ecological Toxicity: Avoid release into the environment. Runoff from fire control or dilution water Persistence and No data available. Degradability: Bioaccumulative No data available. Potential: Mobility in Soil: No data available. Results of PBT and vPvB No data available. assessment: Other adverse effects: No data available. Section 13. Disposal Coc Waste Disposal Method: Dispose in accordance with local, state, DOT Proper Shipping Name: Not dangerous goods. NOT Hazard Class: IN/NA Number: LAND TRANSPORT (US DOT): DOT Proper Shipping Name: Not dangerous goods. Not dangerous goods. Not dangerous goods. Not Mangerous goods. Not Mangerous goods. Not Mangerous goods. Not Mangerous goods. Not dangerous goods. Not Mangerous goods. Not dangerous goods.	Decomposition or Byproducts:       Section 11. Toxicological Information on The toxicological effects of this product have not bee Toxicological Effects:         Chronic Toxicological Effects:       Sodium Hydroxide - Toxicity Data: Intraperitoneal LD mg/kg;         Chronic Toxicological Effects:       Only select Registry of Toxic Effects of Chemical Sul See actual entry in RTECS for complete information. Sodium Hydroxide RTECS Number: WB4900000         nogenicity:       NTP? No       IARC Monographs? No       OSHA R         #       Hazardous Components (Chemical Name)       NTP         NA       EIA Tracer Dye       n.a.         Section 12. Ecological Information Sodium Hydroxide RTECS Number: WB4900000         nogenicity:       NTP? No       IARC Monographs? No       OSHA R         #       Hazardous Components (Chemical Name)       NTP         NA       EIA Tracer Dye       n.a.         Degradability:       Bioaccumulative       No data available.         Degradability:       Bioaccumulative       No data available.         Potential:       Mobility in Soli:       No data available.         Mobility in Soli:       No data available.       Section 13. Disposal Consideral Section 14. Transport Informai         Maste Disposal Method:       Dispose in accordance with local, state, and federal to Section 14. Transport Informai         LAND TRANSPORT (LCAO/IATA)	Decomposition or Byproducts:       Section 11. Toxicological Information         Information on Toxicological Effects:       Sodium Hydroxide - Toxicity Data: Intraperitoneal LD50 (mouse): 40 mg/kg;         Chronic Toxicological       Sodium Hydroxide - Investigated as a mutagen, reproductive effecto Biffects:         Only select Registry of Toxic Effects of Chemical Substances (RTE See actual entry in RTECS for complete information. Sodium Hydroxide RTECS Number: WE490000         nogenicity:       NTP No       IARC Monographs? No       OSHA Regulated? No         #       Hazardous Components (Chemical Name)       NTP       IARC         NA       EIA Tracer Dye       n.a.       n.a.         Section 12. Ecological Information         Toxicity:         A tazardous Components (Chemical Name)       NTP       IARC         NA       EIA Tracer Dye       n.a.       n.a.         Toxicity:         A tracer Dye       No data available.         Degradability:       Bioaccumulative       No data available.         Postential:       Mod data available.       Section 13. Disposal Considerations.         Waste Disposal Method:       Dispose in accordance with local, state, and federal regulations.         Section 14. Transport Information         LAND TRANSPORT (US DOT): <t< td=""><td>Decomposition or Byproducts:       Section 11. Toxicological Information         Information on Toxicological Effects:       Sodium Hydroxide - Toxicity Data: Intraperitoneal LDSO (mouse): 40 mg/kg: Oral T mg/kg:         Chronic Toxicological Effects:       Sodium Hydroxide - Toxicity Data: Intraperitoneal LDSO (mouse): 40 mg/kg: Oral T mg/kg:         Chronic Toxicological Effects:       Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is pre See actual entry in RTECS for complete information. Sodium Hydroxide RTECS Number: WB4900000         nogenicity:       NTP? No       IARC Monographs? No       OSHA Regulated? No         #       Hazardous Components (Chemical Name)       NTP       IARC       ACGIH         NA       EIA Tracer Dye       n.a.       n.a.       n.a.         Toxicity:         Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.         Persistence and Degradability:       No data available.       Results of PBT and vPvB       No data available.         Results of PBT and vPvB       No data available.       Section 13. Disposal Considerations       Section 14. Transport Information         LAND TRANSPORT (US DOT):         Dispose in accordance with local, state, and federal regulations.         LAND TRANSPORT ((Laropean ADR/RID): LAND TRANSPORT ((Laropean ADR/RID): LAND TRANSPORT ((Laropean ADR/RID): LAND TRANSPORT ((Lac</td></t<>	Decomposition or Byproducts:       Section 11. Toxicological Information         Information on Toxicological Effects:       Sodium Hydroxide - Toxicity Data: Intraperitoneal LDSO (mouse): 40 mg/kg: Oral T mg/kg:         Chronic Toxicological Effects:       Sodium Hydroxide - Toxicity Data: Intraperitoneal LDSO (mouse): 40 mg/kg: Oral T mg/kg:         Chronic Toxicological Effects:       Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is pre See actual entry in RTECS for complete information. Sodium Hydroxide RTECS Number: WB4900000         nogenicity:       NTP? No       IARC Monographs? No       OSHA Regulated? No         #       Hazardous Components (Chemical Name)       NTP       IARC       ACGIH         NA       EIA Tracer Dye       n.a.       n.a.       n.a.         Toxicity:         Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.         Persistence and Degradability:       No data available.       Results of PBT and vPvB       No data available.         Results of PBT and vPvB       No data available.       Section 13. Disposal Considerations       Section 14. Transport Information         LAND TRANSPORT (US DOT):         Dispose in accordance with local, state, and federal regulations.         LAND TRANSPORT ((Laropean ADR/RID): LAND TRANSPORT ((Laropean ADR/RID): LAND TRANSPORT ((Laropean ADR/RID): LAND TRANSPORT ((Lac		



## SAFETY DATA SHEET

EIA Tracer Dye

		Section 15. Regu			
	1	nents and Reauthorization Act	1	1	
CAS #		ponents (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
NA	EIA Tracer Dye		No	No	No
CAS #	Hazardous Com	ponents (Chemical Name)	Other US EPA or	State Lists	
NA	EIA Tracer Dye		CAA HAP,ODC: N PROP.65: No	lo; CWA NPDES:	No; TSCA: No; CA
Regulatory In	formation	This SDS was prepared in acco	ordance with 29 CFR	1910.1200 and R	egulation (EC)
Statement:		No.1272/2008.			
		Section 16. Oth	ner Informatio	n	
Revision Date	<b>:</b>	03/26/2018			
Additional Inf	ormation About	No data available.			
This Product:	:				
		use. Users should make their of their particular purposes.	own investigations to	determine the suit	ability of the information fo



	Revision:	03/26/2018
Supersedes	Revision:	01/23/2018

	CHEMICAL	accord	ding to Regulation (EC) No. 190	7/2006 as amended by		8	
		Section 1. Ide	entification of the Substan	ce/Mixture and of t	he Company/Ur	ndertaking	
1.1	Product	Code:	400042				
	Product	Name:	EIA Antiserum Dye				
1.2	Relevan	t identified uses of t	he substance or mixture a	nd uses advised ag	jainst:		
	Releva	Int identified uses:	For research use only, no	ot for human or veteri	nary use.		
1.3	Details o	of the Supplier of the	e Safety Data Sheet:				
	Compa	any Name:	Cayman Chemical Comp	any			
			1180 E. Ellsworth Rd. Ann Arbor, MI 48108				
	Web s	ite address:	www.caymanchem.com				
	Inform		Cayman Chemical Comp	anv	+1 (734	4)971-3335	
1.4		ncy telephone numb					
1.4	-	ency Contact:	CHEMTREC Within USA	and Canada:	+1 (80)	0)424-9300	
			CHEMTREC Outside US		-	3)527-3887	
			Section 2. Haz	zards Identific	ation		
2.1	Clossifi	cation of the Substa					
2.1		ogenicity, Category					
2.2		ements:					
		ignal Word: Iazard Phrases:	Danger				
	H350:	May cause cancer.					
	GHS F	Precaution Phrases:					
	P201:	Obtain special instruc	tions before use.				
			I safety precautions have be				
	P280: Wear {protective gloves/protective clothing/eye protection/face protection}.						
		Response Phrases:					
	P308+313: IF exposed or concerned: Get medical attention/advice.						
	GHS Storage and Disposal Phrases: Please refer to Section 7 for Storage and Section 13 for Disposal information.						
2.3			-	-		niratory tract	
2.0	Adverse Human HealthMaterial may be irritating to the mucous membranes and upper respiratory tract.Effects and Symptoms:May be harmful by inhalation, ingestion, or skin absorption.May cause cancer.						
			Nay cause eye, skin, or resp	iratory system irritatio	on.		
		Т	o the best of our knowledge	e, the toxicological pro	operties have not	been thoroughly investigated.	
		Sectio	on 3. Composition	/Information c	on Ingredier	nts	
				0	EC No./		
CAS RTE(		REACH Registratio	nents (Chemical Name)/ n No.	Concentration	EC Index No.	GHS Classification	



Revision: 03/26/2018 Supersedes Revision: 01/23/2018

		Section 4. First Aid Measures
4.1	Description of First Aid	
	Measures:	
	In Case of Inhalation:	Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
	In Case of Skin Contact:	Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
	In Case of Eye Contact:	Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.
	In Case of Ingestion:	Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
		Section 5. Fire Fighting Measures
5.1	Suitable Extinguishing	Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
	Media:	Use water spray to cool fire-exposed containers.
	Unsuitable Extinguishing Media:	a A solid water stream may be inefficient.
5.2	Flammable Properties an	ndNo data available.
	Hazards:	
		No data available.
	Flash Pt:	No data.
	Explosive Limits:	LEL: No data. UEL: No data.
	Autoignition Pt:	No data.
5.3	Fire Fighting Instructions	<b>s:</b> As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.
		Section 6. Accidental Release Measures
6.1	Protective Precautions,	Avoid breathing vapors and provide adequate ventilation.
	Protective Equipment an	d As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator,
	Emergency Procedures:	and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
6.2	Environmental	Take steps to avoid release into the environment, if safe to do so.
<b>C D</b>	Precautions:	- Contain shill and collect as appropriate
6.3		r Contain spill and collect, as appropriate. ngTransfer to a chemical waste container for disposal in accordance with local regulations.
	Up:	
		Section 7. Handling and Storage
7.1	Precautions To Be Taker	Avoid breathing dust/fume/gas/mist/vapours/spray.
	in Handling:	Avoid prolonged or repeated exposure.
7.2	Precautions To Be Taker	Keep container tightly closed.
	in Storing:	Store in accordance with information listed on the product insert.
	Sec	tion 8. Exposure Controls/Personal Protection
8.1	Exposure Parameters:	



8.2	Exposure Controls:		
8.2.1	Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering contr	ale to control cirborno
0.2.1	(Ventilation etc.):	levels below recommended exposure limits.	
0.0.0			
8.2.2			
	Eye Protection:	Safety glasses	
	Protective Gloves:	Compatible chemical-resistant gloves	
	Other Protective Clothing		
	Respiratory Equipment	NIOSH approved respirator, as conditions warrant.	
	(Specify Type):		
	Work/Hygienic/Maintenan	-	
	ce Practices:	Facilities storing or utilizing this material should be equipped with an eyewas	n facility and a safety
		shower.	
		Wash thoroughly after handling.	
		No data available.	
	S	ection 9. Physical and Chemical Properties	
9.1	Information on Basic Phys	ical and Chemical Properties	
	Physical States:	[]Gas [X]Liquid []Solid	
	Appearance and Odor:	A blue solution	
	pH:	No data.	
	Melting Point:	No data.	
	Boiling Point:	No data.	
	Flash Pt:	No data.	
	Evaporation Rate:	No data.	
	Flammability (solid, gas):	No data available.	
	Explosive Limits:	LEL: No data. UEL: No data.	
	Vapor Pressure (vs. Air or	mm No data.	
	Hg):		
	Vapor Density (vs. Air = 1	: No data.	
	Specific Gravity (Water =	I): No data.	
	Solubility in Water:	No data.	
	Octanol/Water Partition	No data.	
	Coefficient:		
	Autoignition Pt:	No data.	
	Decomposition Temperat		
	Viscosity:	No data.	
9.2	Other Information		
	Percent Volatile:	No data.	
		Section 10. Stability and Reactivity	
10.1	Reactivity:	No data available.	
10.2	Stability:	Unstable [ ] Stable [ X ]	
10.3	Stability Note(s):	Stable if stored in accordance with information listed on the product insert.	
	Polymerization:	Will occur [ ] Will not occur [ X ]	
10.4	Conditions To Avoid:	No data available.	
10.5	Incompatibility - Materials		
	To Avoid:		
10.6	Hazardous	No data available.	
0.0	1 14241 4043		Multi-region format
			wulti-region format



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Decomposition or **Byproducts:** Section 11. Toxicological Information 11.1 Information on The toxicological effects of this product have not been thoroughly studied. **Toxicological Effects:** Chronic Toxicological Contains a component that has been investigated as a carcinogen. Effects: Carcinogenicity/Other Contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification. Information: NTP? No IARC Monographs? Yes Carcinogenicity: **OSHA Regulated? No** CAS # Hazardous Components (Chemical Name) NTP IARC ACGIH OSHA NA EIA Antiserum Dye n.a. n.a. n.a. n.a. Section 12. Ecological Information Avoid release into the environment. 12.1 Toxicity: Runoff from fire control or dilution water may cause pollution. 12.2 No data available. Persistence and **Degradability:** 12.3 **Bioaccumulative** No data available. Potential: 12.4 No data available. Mobility in Soil: 12.5 Results of PBT and vPvB No data available. assessment: 12.6 Other adverse effects: No data available. Section 13. Disposal Considerations Waste Disposal Method: Dispose in accordance with local, state, and federal regulations. 13.1 Section 14. Transport Information LAND TRANSPORT (US DOT): 14.1 DOT Proper Shipping Name: Not dangerous goods. **DOT Hazard Class: UN/NA Number:** LAND TRANSPORT (European ADR/RID): 14.1 ADR/RID Shipping Name: Not dangerous goods. **UN Number:** Hazard Class: **AIR TRANSPORT (ICAO/IATA):** 14.3 ICAO/IATA Shipping Name: Not dangerous goods. Additional Transport Transport in accordance with local, state, and federal regulations. Information:



Multi-region format

		Section 15. Regu				
EPA SARA (S	Superfund Amendn	nents and Reauthorization Act	of 1986) Lists	1		
CAS #	Hazardous Com	ponents (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)	
NA	EIA Antiserum D	уе	No	No No No		
CAS #	Hazardous Com	ponents (Chemical Name)	Other US EPA or State Lists			
NA	EIA Antiserum D	уе	CAA HAP,ODC: I PROP.65: No	No; CWA NPDES:	No; TSCA: No; CA	
Regulatory In	formation	This SDS was prepared in acco	ordance with 29 CFR	1910.1200 and R	egulation (EC)	
Statement:		No.1272/2008.				
		Section 16. Oth	her Informatio	n		
Revision Date	):	03/26/2018				
Additional Information About		No data available.				
This Product:						
		their particular purposes.				



	Revision:	03/26/2018
Supersedes	Revision:	08/25/2017

1 2	Section 1		(EC) No. 1272/2008				
		Identification of the Substance/Mixture and of the	ne Company/Undertaking				
2	Product Code: Product Name:	400080 Tris Buffer Concentrate (10X)					
	Relevant identified uses	of the substance or mixture and uses advised ag	ainst:				
	Relevant identified uses	-					
.3	Details of the Supplier of	the Safety Data Sheet:					
	Company Name:	Cayman Chemical Company 1180 E. Ellsworth Rd. Ann Arbor, MI 48108					
	Web site address:	www.caymanchem.com					
	Information:	Cayman Chemical Company	+1 (734)971-3335				
.4	Emergency telephone nu	mber:					
	Emergency Contact:	CHEMTREC Within USA and Canada: CHEMTREC Outside USA and Canada:	+1 (800)424-9300 +1 (703)527-3887				
		Section 2. Hazards Identific	ation				
.1	Classification of the Subs	stance or Mixture:					
	Acute Toxicity: Oral, Ca	ategory 4					
	Aquatic Toxicity (Acute), Category 3						
	Aquatic Toxicity (Chror	nic), Category 3					
.2	Label Elements:						
	GHS Signal Word: GHS Hazard Phrases:	Warning					
	H302: Harmful if swallow	ed					
	H402: Harmful to aquatic						
		life with long lasting effects.					
	GHS Precaution Phrase						
	P264: Wash {hands} tho						
	P273: Avoid release to th						
	GHS Response Phrases: P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.						
	P330: Rinse mouth.	nsal Phrases					
	P330: Rinse mouth. GHS Storage and Dispo						
3	P330: Rinse mouth. GHS Storage and Dispo Please refer to Section 7	for Storage and Section 13 for Disposal information					
2.3	P330: Rinse mouth. GHS Storage and Dispo						
2.3	P330: Rinse mouth. GHS Storage and Dispo Please refer to Section 7 Adverse Human Health	for Storage and Section 13 for Disposal information. Harmful if swallowed. Harmful to aquatic life with long lasting effects.					
2.3	P330: Rinse mouth. GHS Storage and Dispo Please refer to Section 7 Adverse Human Health	for Storage and Section 13 for Disposal information. Harmful if swallowed. Harmful to aquatic life with long lasting effects. Material is irritating to the mucous membranes and					



RTECS # REACH Registrati		-	oonents (Chemical Name)/ tion No.	Concentration	EC No./ EC Index No.	GHS Classification
1185-5 NA	53-1	Tris[hydroxymethyl]a	aminomethane hydrochloride	13.2 %	214-684-5 NA	No data available.
77-86 TY29000		Trizma base		1.9 %	201-064-4 NA	
26628-22-8 Sodium azide VY8050000 Sodium chlorido		Sodium azide		0.5 %	247-852-1 011-004-00-7	Acute Tox.(O) 2: H300 Aquatic (A) 1: H400 Aquatic (C) 1: H410
7647-14-5 Sodium chloride VZ4725000		Sodium chloride		8.4 %	231-598-3 NA	No data available.
7646-85-7 Zinc chloride ZH1400000		Zinc chloride		0.02 %	231-592-0 030-003-00-2	Acute Tox.(O) 4: H302 Skin Corr. 1B: H314 Aquatic (A) 1: H400 Aquatic (C) 1: H410
7791-1 OM2975		Magnesium chloride	, hexahydrate	0.4 %	616-575-1 NA	No data available.
9048-4 AY92960		Bovine Serum Albun	nin (BSA)	5.0 %	232-936-2 NA	Acute Tox.(O) 4: H302
7732-1 ZC0110		Water		70.58 %	231-791-2 NA	No data available.
			Section 4. Fi	rst Aid Meas	ures	·
•		e of Inhalation:	Remove to fresh air. If not br personnel. Get immediate m		a respiration of gr	
I	In Case	e of Skin Contact: e of Eye Contact: e of Ingestion:	Immediately wash skin with a contaminated clothing. Get n Hold eyelids apart and flush examined and tested by med Wash out mouth with water p	soap and plenty of w nedical attention if s eyes with plenty of w dical personnel. provided person is c	ymptoms occur. W water for at least 1 onscious. Never g	/ash clothing before reuse. 5 minutes. Have eyes
I	In Case	e of Eye Contact:	Immediately wash skin with a contaminated clothing. Get n Hold eyelids apart and flush examined and tested by med Wash out mouth with water p unconscious person. Get me	soap and plenty of w nedical attention if s eyes with plenty of w dical personnel. provided person is c edical attention. Do N	ymptoms occur. W water for at least 1 onscious. Never g NOT induce vomiti	/ash clothing before reuse. 5 minutes. Have eyes ive anything by mouth to an
5.1 5	In Case In Case Suitabl Media:	e of Eye Contact: e of Ingestion: le Extinguishing able Extinguishing	Immediately wash skin with a contaminated clothing. Get n Hold eyelids apart and flush examined and tested by med Wash out mouth with water p unconscious person. Get me medical personnel.	soap and plenty of w nedical attention if s eyes with plenty of w dical personnel. provided person is c edical attention. Do N <u>e Fighting Me</u> carbon dioxide, wate exposed containers	ymptoms occur. W water for at least 1 onscious. Never g NOT induce vomiti <b>asures</b> er, or dry chemical	/ash clothing before reuse. 5 minutes. Have eyes ive anything by mouth to an ng unless directed to do so by
5.1 S	In Case In Case Suitabl Media: Unsuita Media:	e of Eye Contact: e of Ingestion: le Extinguishing able Extinguishing able Properties an	Immediately wash skin with s contaminated clothing. Get n Hold eyelids apart and flush examined and tested by med Wash out mouth with water p unconscious person. Get me medical personnel. Section 5. Fire Use alcohol-resistant foam, Use water spray to cool fire- A solid water stream may be dNo data available.	soap and plenty of w nedical attention if s eyes with plenty of w dical personnel. provided person is c edical attention. Do N <u>e Fighting Me</u> carbon dioxide, wate exposed containers	ymptoms occur. W water for at least 1 onscious. Never g NOT induce vomiti <b>asures</b> er, or dry chemical	/ash clothing before reuse. 5 minutes. Have eyes ive anything by mouth to an ng unless directed to do so by
5.1 S 5.2 I	In Case In Case Suitabl Media: Unsuita Media: Flamm Hazard	e of Eye Contact: e of Ingestion: le Extinguishing able Extinguishing able Properties an ls:	Immediately wash skin with s contaminated clothing. Get n Hold eyelids apart and flush examined and tested by med Wash out mouth with water p unconscious person. Get me medical personnel. <b>Section 5. Fire</b> Use alcohol-resistant foam, Use water spray to cool fire- A solid water stream may be dNo data available. No data available.	soap and plenty of w nedical attention if s eyes with plenty of w dical personnel. provided person is c edical attention. Do N <u>e Fighting Me</u> carbon dioxide, wate exposed containers	ymptoms occur. W water for at least 1 onscious. Never g NOT induce vomiti <b>asures</b> er, or dry chemical	/ash clothing before reuse. 5 minutes. Have eyes ive anything by mouth to an ng unless directed to do so by
5.1 S 5.2 I 1	In Case In Case Suitabl Media: Unsuita Media: Flamm Hazard Flash F	e of Eye Contact: e of Ingestion: le Extinguishing able Extinguishing able Properties an ls: Pt:	Immediately wash skin with s contaminated clothing. Get m Hold eyelids apart and flush examined and tested by med Wash out mouth with water p unconscious person. Get me medical personnel. <b>Section 5. Fire</b> Use alcohol-resistant foam, Use water spray to cool fire- A solid water stream may be dNo data available. No data available. No data.	soap and plenty of w nedical attention if s eyes with plenty of w dical personnel. provided person is c edical attention. Do N e Fighting Me carbon dioxide, wate exposed containers e inefficient.	ymptoms occur. W water for at least 1 onscious. Never g NOT induce vomiti aSURES er, or dry chemical	/ash clothing before reuse. 5 minutes. Have eyes ive anything by mouth to an ng unless directed to do so by
5.2	In Case In Case Suitabl Media: Unsuita Media: Flamm Hazard Flash F Explos	e of Eye Contact: e of Ingestion: le Extinguishing able Extinguishing able Properties an ls: Pt: ive Limits:	Immediately wash skin with s contaminated clothing. Get n Hold eyelids apart and flush examined and tested by med Wash out mouth with water p unconscious person. Get me medical personnel. <b>Section 5. Fire</b> Use alcohol-resistant foam, Use water spray to cool fire- A solid water stream may be dNo data available. No data available. No data. LEL: No data.	soap and plenty of w nedical attention if s eyes with plenty of w dical personnel. provided person is c edical attention. Do N <u>e Fighting Me</u> carbon dioxide, wate exposed containers	ymptoms occur. W water for at least 1 onscious. Never g NOT induce vomiti aSURES er, or dry chemical	/ash clothing before reuse. 5 minutes. Have eyes ive anything by mouth to an ng unless directed to do so by
5.1	In Case In Case Suitabl Media: Unsuita Media: Flamm Hazard Flash F Explos Autoigi	e of Eye Contact: e of Ingestion: le Extinguishing able Extinguishing able Properties an ls: Pt: ive Limits: nition Pt:	Immediately wash skin with s contaminated clothing. Get m Hold eyelids apart and flush examined and tested by med Wash out mouth with water p unconscious person. Get me medical personnel. <b>Section 5. Fire</b> Use alcohol-resistant foam, Use water spray to cool fire- A solid water stream may be dNo data available. No data available. No data.	soap and plenty of w nedical attention if s eyes with plenty of w dical personnel. provided person is c edical attention. Do N PERIMING ME carbon dioxide, wate exposed containers a inefficient. UEL: No c tained breathing app	ymptoms occur. W water for at least 1 onscious. Never g NOT induce vomiti asures er, or dry chemical lata.	/ash clothing before reuse. 5 minutes. Have eyes ive anything by mouth to an ng unless directed to do so by spray.



Revision: 03/26/2018

Supersedes Revision: 08/25/2017 Section 6. Accidental Release Measures 6.1 **Protective Precautions,** Avoid breathing vapors and provide adequate ventilation. Protective Equipment and As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves). **Emergency Procedures:** 6.2 Environmental Take steps to avoid release into the environment, if safe to do so. Precautions: 6.3 Methods and Material For Contain spill and collect, as appropriate. Containment and Cleaning Transfer to a chemical waste container for disposal in accordance with local regulations. Up: Section 7. Handling and Storage 7.1 Precautions To Be Taken Avoid breathing dust/fume/gas/mist/vapours/spray. in Handling: Avoid prolonged or repeated exposure. 7.2 Precautions To Be Taken Keep container tightly closed. Store in accordance with information listed on the product insert. in Storing: Section 8. Exposure Controls/Personal Protection **Exposure Parameters:** 8.1 CAS # **Chemical Name** Jurisdiction **Recommended Exposure Limits** Notations ACGIH TLV 77-86-1 Trizma base CEIL: 5 mg/m3 (salts) France VL TWA: 5 mg/m3 **OSHA PELs** TWA: 5 mg/m3 Britain EH40 TWA: 5.0 mg/m3 Skin Absorption 26628-22-8 Sodium azide ACGIH TLV CEIL: 0.29 mg/m3 Europe TWA: 0.1 mg/m3 Skin Absorption STEL: 0.3 mg/m3 France VL TWA: 0.1 mg/m3 STEL: 0.3 mg/m3 Britain EH40 TWA: 0.1 mg/m3 () Skin Absorption STEL: 0.3 mg/m3 () 7646-85-7 ACGIH TLV Zinc chloride TLV: 1 mg/m3 STEL: 2 mg/m3 France VL TWA: 1 mg/m3 **OSHA PELs** PEL: 1 mg/m3 Britain EH40 TWA: 1 mg/m3 () STEL: 2 mg/m3 () 8.2 **Exposure Controls:** 8.2.1 **Engineering Controls** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. (Ventilation etc.): 8.2.2 Personal protection equipment: **Eye Protection:** Safety glasses **Protective Gloves:** Compatible chemical-resistant gloves Other Protective Clothing: Lab coat **Respiratory Equipment** NIOSH approved respirator, as conditions warrant.

(Specify Type):

Work/Hygienic/Maintenan Do not take internally.

ce Practices:Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.Wash thoroughly after handling.



		No data available.
	Se	ection 9. Physical and Chemical Properties
9.1	Information on Basic Phys	ical and Chemical Properties
	Physical States:	[] Gas [X] Liquid [] Solid
	Appearance and Odor:	1 M Tris-HCl, pH 7.6, containing 5% BSA, 1.45 M sodium chloride, 20 mM MgCl2, 1 mN
		ZnCl2, and 0.5% sodium azide
	pH:	No data.
	Melting Point:	No data.
	Boiling Point:	No data.
	Flash Pt:	No data.
	Evaporation Rate:	No data.
	Flammability (solid, gas):	No data available.
	Explosive Limits:	LEL: No data. UEL: No data.
	Vapor Pressure (vs. Air or	mm No data.
	Hg):	
	Vapor Density (vs. Air = 1)	: No data.
	Specific Gravity (Water = 1	
	Solubility in Water:	No data.
	Octanol/Water Partition	No data.
	Coefficient:	
	Autoignition Pt:	No data.
	Decomposition Temperatu	ure: No data.
	Viscosity:	No data.
9.2	Other Information	
	Percent Volatile:	No data.
		Section 10. Stability and Reactivity
10.1	Reactivity:	No data available.
10.2	Stability:	Unstable [ ] Stable [ X ]
		Otable if starsed in accordance with information listed on the preduct incert
10.3	Stability Note(s):	Stable if stored in accordance with information listed on the product insert.
	• • • •	Stable if stored in accordance with information listed on the product insert.         Will occur [ ]       Will not occur [ X ]
	Polymerization:	
10.3	Polymerization:	Will occur [ ] Will not occur [ X ] No data available.
10.3 10.4	Polymerization: Conditions To Avoid: Incompatibility - Materials	Will occur [ ] Will not occur [ X ] No data available.
10.3 10.4 10.5	Polymerization: Conditions To Avoid: Incompatibility - Materials To Avoid:	Will occur [ ] Will not occur [ X ] No data available. bases
10.3 10.4	Polymerization: Conditions To Avoid: Incompatibility - Materials To Avoid: Hazardous	Will occur [ ] Will not occur [ X ] No data available. bases oxidizing agents
10.3 10.4 10.5	Polymerization: Conditions To Avoid: Incompatibility - Materials To Avoid: Hazardous Decomposition or	Will occur [ ] Will not occur [ X ] No data available. bases oxidizing agents carbon dioxide
10.3 10.4 10.5	Polymerization: Conditions To Avoid: Incompatibility - Materials To Avoid: Hazardous Decomposition or Byproducts:	Will occur [ ] Will not occur [ X ] No data available. bases oxidizing agents carbon dioxide carbon monoxide



Multi-region format

		Section 11. Toxicologic	ai informa	ation			
11.1 Inforn	nation on	The toxicological effects of this produc	have not been thoroughly studied.				
Toxic	ological Effects:	Bovine Serum Albumin - Toxicity Data:	Intraperitonea	Intraperitoneal TDLO (mouse): 0.2 pph;			
		Sodium Azide - Toxicity Data: Oral LD	_O (rat): 27 mg	/kg; Oral LDL0	O (woman): 14	mg/kg; Oral	
		<ul> <li>LDLO (man): 29 mg/kg;</li> <li>Bovine Serum Albumin - Investigated as a natural product.</li> <li>Sodium Azide - Investigated as an agricultural chemical, drug, mutagen, reproductive effector, and tumorigen.</li> <li>Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here.</li> <li>See actual entry in RTECS for complete information.</li> <li>Bovine Serum Albumin RTECS Number: AY9296000</li> </ul>					
Chron	ic Toxicological						
Effect	s:						
		Sodium Azide RTECS Number: VY805					
Carcinogenio	itv.	NTP? No IARC Monographs? No		egulated? No			
		ponents (Chemical Name)	NTP	IARC	ACGIH	OSHA	
1185-53-1		yl]aminomethane hydrochloride	n.a.	n.a.	n.a.	n.a.	
77-86-1	Trizma base		n.a.	n.a.	n.a.	n.a.	
26628-22-8	Sodium azide		n.a.	n.a.	A4	n.a.	
7647-14-5	Sodium chloride		n.a.	n.a.	n.a.	n.a.	
7646-85-7	Zinc chloride		n.a.	n.a.	n.a.	n.a.	
7791-18-6	Magnesium chlor	ide, hexahydrate	n.a.	n.a.	n.a.	n.a.	
9048-46-8	Bovine Serum Al	bumin (BSA)	n.a.	n.a.	n.a.	n.a.	
7732-18-5	Water		n.a.	n.a.	n.a.	n.a.	
	tence and	Runoff from fire control or dilution wate No data available.	r may cause po	ollution.			
	dahilituu	No data available.					
Degra 12.3 Bioac	dability: cumulative tial:	No data available.					
Degra I2.3 Bioac Poten	cumulative tial:						
Degra I2.3 Bioac Poten I2.4 Mobili	cumulative tial: ty in Soil:	No data available.					
Degra I2.3 Bioac Poten I2.4 Mobili I2.5 Resul	cumulative tial: ty in Soil: ts of PBT and vPvB	No data available.					
Degra 12.3 Bioac Poten 12.4 Mobili 12.5 Resul asses	cumulative tial: ty in Soil:	No data available.					
Degra 12.3 Bioac Poten 12.4 Mobili 12.5 Resul asses	cumulative tial: ty in Soil: ts of PBT and vPvB sment:	No data available. No data available.	onsiderati	ions			



cayman			Superse	des Revision: 08/25/2017
	Section 14. Trans	sport Informa	tion	
14.1 LAND	TRANSPORT (US DOT):			
DOT Prop	er Shipping Name: Not dangerous goods.			
DOT Haza	rd Class:			
UN/NA Nu	mber:			
14.1 LAND	TRANSPORT (European ADR/RID):			
ADR/RID	Shipping Name: Not dangerous goods.			
UN Numb	er:			
Hazard Cl	ass:			
14.3 AIR TR	ANSPORT (ICAO/IATA):			
	A Shipping Name: Not dangerous goods.			
Additional Tra	ansport Transport in accordance with loc	cal, state, and federa	I regulations.	
Information:				
	Section 15. Regul	atory Informa	tion	
EPA SARA (S	uperfund Amendments and Reauthorization Act o	of 1986) Lists		
CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
1185-53-1	Tris[hydroxymethyl]aminomethane hydrochloride	No	No	No
77-86-1	Trizma base	No	No	Yes-Cat. N106
26628-22-8	Sodium azide	Yes 500 LB	Yes 1000 LB	Yes
7647-14-5	Sodium chloride	No	No	No
7646-85-7	Zinc chloride	No	Yes 1000 LB	Yes-Cat. N982
7791-18-6	Magnesium chloride, hexahydrate	No	No	No
9048-46-8	Bovine Serum Albumin (BSA)	No	No	No
7732-18-5	Water	No	No	No
CAS #	Hazardous Components (Chemical Name)	Other US EPA or	State Lists	
1185-53-1	Tris[hydroxymethyl]aminomethane hydrochloride		o; CWA NPDES: No	; TSCA: Yes -
		Inventory; CA PR	OP.65: No	
77-86-1	Trizma base			DES: No; TSCA: Yes -
		Inventory; CA PR		
26628-22-8	Sodium azide	CAA HAP,ODC: N	o; CWA NPDES: No	o; TSCA: Yes -
7647-14-5	Sodium chloride		o; CWA NPDES: No	
1041-14-0		Inventory; CA PR		, 100A. 163 -
7646-85-7	Zinc chloride	CAA HAP,ODC: N	o; CWA NPDES: No	; TSCA: Yes -
		Inventory; CA PR	OP.65: No	
7791-18-6	Magnesium chloride, hexahydrate	CAA HAP,ODC: N PROP.65: No	o; CWA NPDES: No	o; TSCA: No; CA
9048-46-8	Bovine Serum Albumin (BSA)	CAA HAP,ODC: N	o; CWA NPDES: No	o; TSCA: Yes -
		Inventory; CA PR	OP.65: No	
7732-18-5	Water		o; CWA NPDES: No	o; TSCA: Yes -
		Inventory; CA PR	UP.65: No	



Regulatory Information	This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC)
Statement:	No.1272/2008.
	Section 16. Other Information
Revision Date:	03/26/2018
Additional Information About	No data available.
This Product: Company Policy or Disclaimer:	DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.



Revision: 03/26/2018 Supersedes Revision: 08/25/2017

	CHEMICAL				5	Supersedes Revision: 08/25/2017		
		accore	ding to Regulation (EC) No. 190	7/2006 as amended by	y (EC) No. 1272/200	8		
		Section 1. Id	entification of the Substan	ce/Mixture and of	the Company/Ur	ndertaking		
1.1	Product Product		400089 pNPP Substrate Solution					
.2	Relevan	nt identified uses of t	the substance or mixture a	nd uses advised a	gainst:			
		ant identified uses:	For research use only, no		-			
.3	Details	of the Supplier of the	e Safety Data Sheet:					
		any Name:	Cayman Chemical Comp 1180 E. Ellsworth Rd. Ann Arbor, MI 48108	any				
	Web s	ite address:	www.caymanchem.com					
	Inform	nation:	Cayman Chemical Comp	any	+1 (734	4)971-3335		
.4	Emerge	ncy telephone numb	ber:					
	Emerg	ency Contact:	CHEMTREC Within USA	and Canada:	+1 (80	0)424-9300		
			CHEMTREC Outside US	A and Canada:	+1 (70	3)527-3887		
			Section 2. Haz	zards Identifie	cation			
2.1	Classifi	cation of the Substa	nce or Mixture:					
2.2	Label E	lements:						
	GHS S	Signal Word:	None					
	GHS Hazard Phrases:							
	Based	l on evaluation of curr	ently available data this subs	stance or mixture is	not classifiable ac	cording to GHS.		
	GHS F	Precaution Phrases:						
	No ph	rases apply.						
	GHS F	Response Phrases:						
	No ph	rases apply.						
	GHS S	Storage and Disposa	Il Phrases:					
			r Storage and Section 13 for	-				
2.3			Material may be irritating to the			piratory tract.		
	Effects		May be harmful by inhalation	-	-			
			May cause eye, skin, or resp To the best of our knowledge			been thoroughly investigated		
					-			
		Sectio	on 3. Composition	/information	on ingreale	nts		
		Hazardous Compo REACH Registratio	nents (Chemical Name)/ n No.	Concentration	EC No./ EC Index No.	GHS Classification		
	LS #							
		pNPP Substrate Solution	วท	100.0 %	NA	No data available.		



Revision: 03/26/2018 Supersedes Revision: 08/25/2017

		Section 4. First Aid Measures
4.1	Description of First Aid	
	Measures:	
	In Case of Inhalation:	Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
	In Case of Skin Contact:	Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
	In Case of Eye Contact:	Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.
	In Case of Ingestion:	Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
		Section 5. Fire Fighting Measures
5.1	Suitable Extinguishing	Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
	Media:	Use water spray to cool fire-exposed containers.
	Unsuitable Extinguishing	A solid water stream may be inefficient.
	Media:	
5.2	Flammable Properties an	dNo data available.
	Hazards:	
		No data available.
	Flash Pt:	No data.
	Explosive Limits:	LEL: No data. UEL: No data.
	Autoignition Pt:	No data.
5.3	Fire Fighting Instructions	s: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.
		Section 6. Accidental Release Measures
6.1	Protective Precautions,	Avoid raising and breathing dust, and provide adequate ventilation.
	Protective Equipment an	d As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator,
	Emergency Procedures:	and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
6.2	Environmental Precautions:	Take steps to avoid release into the environment, if safe to do so.
6.3		r Contain spill and collect, as appropriate.
		ngTransfer to a chemical waste container for disposal in accordance with local regulations.
	Up:	
		Section 7. Handling and Storage
7.1	Precautions To Be Taken	Avoid breathing dust/fume/gas/mist/vapours/spray.
	in Handling:	Avoid prolonged or repeated exposure.
7.2		Keep container tightly closed.
	in Storing:	Store in accordance with information listed on the product insert.
	Sec	tion 8. Exposure Controls/Personal Protection
8.1	Exposure Parameters:	



Revision: 03/26/2018

Cay	man		r	, - ·	501 uve k		Revision: 03/26/ Supersedes Revision: 08/25/	
8.2	Exposure Controls:							
8.2.1	Engineering Controls	Use pr	rocess enclo	osures, local ex	khaust ven	tilation, or other	engineering controls to control air	rborne
	(Ventilation etc.):	levels	below recon	mmended expo	osure limits	s.		
8.2.2	Personal protection equi	ipment:						
	Eye Protection:	Safety	glasses					
	Protective Gloves:	Compa	atible chemi	ical-resistant gl	loves			
	Other Protective Clothing	g:Lab co	bat					
	Respiratory Equipment	NIOSH	Happroved r	respirator, as c	conditions v	warrant.		
	(Specify Type):			• •				
	Work/Hygienic/Maintena	n Do not	t take interna	ally.				
	ce Practices:			-	naterial sh	ould be equippe	ed with an eyewash and a safety s	hower
		Wash	thoroughly a	after handling.				
		No dat	ta available.					
	S	Section	n 9 Ph	vsical and	d Chen	nical Prope	erties	
9.1	Information on Basic Phy							
	Physical States:		[]Gas	[X] Liquid	[] Solid	d		
	Appearance and Odor:		A liquid		[]000			
	pH:		No data.					
	Melting Point:		No data.					
	Boiling Point:		No data.					
	Flash Pt:		No data.					
	Evaporation Rate:		No data.					
	Flammability (solid, gas)	-	No data av	ailable.				
	Explosive Limits:	•	LEL: No di			UEL: No data	L	
	Vapor Pressure (vs. Air c	or mm	No data.	ului				
	Hg):							
	Vapor Density (vs. Air = <sup>2</sup>	1):	No data.					
	Specific Gravity (Water =	-	No data.					
	Solubility in Water:	- 1).	No data.					
	Octanol/Water Partition		No data.					
	Coefficient:		No data.					
			No data.					
	Autoignition Pt: Decomposition Tempera	4	No data.					
		iture:	No data.					
	Viscosity:		no uala.					
9.2	Other Information							
	Percent Volatile:		No data.					
		S	ection 1	0. Stabili	ty and	Reactivity		
10.1	Reactivity:		ta available.					
10.2	Stability:			Stable [ X ]				
10.3	Stability Note(s):	Stable	if stored in a	accordance wi	th informat	tion listed on the	e product insert.	
	Polymerization:	Will oc	cur[]	Will not occur	[X]			
10.4	Conditions To Avoid:	No dat	ta available.					
10.5	Incompatibility - Material	<b>Is</b> No dat	ta available.					
	To Avoid:							
10.6	Hazardous	No dat	ta available.					
							Multi-regior	n forma



Multi-region format

	Decomposition or Byproducts:							
Section 11. Toxicological Information								
11.1								
CAS #		Hazardous Components (Chemical Name)		NT	P	IARC	ACGIH	OSHA
NA		pNPP Substrate Solution		n.a		n.a.	n.a.	n.a.
		•	Section 12. Ecol	ogical Infor	mation			
12.1	-		Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.					
12.2	2.2 Persistence and Degradability:		No data available.					
12.3			No data available.					
12.4	Mobility	in Soil:	No data available.					
12.5			No data available.					
12.6	assessment:         2.6 Other adverse effects:       No data available.							
Section 13. Disposal Considerations								
13.1 Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.								
			Section 14. Trar	nsport Infor	mation			
14.1	LAND T	RANSPORT (US	DOT):					
DOT Proper Shipping Name: Not dangerous goods.								
DOT Hazard Class:								
14.1 LAND TRANSPORT (European ADR/RID):								
ADR/RID Shipping Name: Not dangerous goods. UN Number:								
Hazard Class:								
14.3 AIR TRANSPORT (ICAO/IATA):								
ICAO/IATA Shipping Name: Not dangerous goods.								
Additional Transport Transport in accordance with local, state, and federal regulations.								
Information:								
			Section 15. Regu	latory Infoi	rmatior	1		
EPA	SARA (Si	perfund Amendn	nents and Reauthorization Act	of 1986) Lists				
CAS #		1	ponents (Chemical Name)	S. 302 (EHS)	) S.	304 RQ	S. 313	B (TRI)
NA		pNPP Substrate Solution		No	No		No	
CAS #		Hazardous Components (Chemical Name)		Other US EPA or State Lists				
NA		pNPP Substrate Solution		CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No				



## **SAFETY DATA SHEET** pNPP Substrate Solution

Supersedes Revision: 08/25/2017

Page: 5 of 5

Regulatory Information	This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC)
Statement:	No.1272/2008.
	Section 16. Other Information
Revision Date:	03/26/2018
Additional Information About	No data available.
This Product:	
Company Policy or Disclaimer:	DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.



## **SAFETY DATA SHEET** AP Wash Buffer Concentrate (150X)

Revision: 03/26/2018 Supersedes Revision: 06/16/2017

		Section 1 I	dentification of the Substa	nce/Mixture and c	of the Company/L	ndertaking				
	<b>D</b>					ndentaking				
.1		et Code: et Name:	411007 AP Wash Buffer Concer	otrate (150X)						
~				, , , , , , , , , , , , , , , , , , ,						
.2			the substance or mixture		-					
		ant identified uses:	, , , , , , , , , , , , , , , , , , ,	not for numan or ver	ennary use.					
.3			he Safety Data Sheet:							
	Com	bany Name:	Cayman Chemical Com 1180 E. Ellsworth Rd.	pany						
			Ann Arbor, MI 48108							
	Web	site address:	www.caymanchem.com							
	Infor	mation:	Cayman Chemical Com	pany	+1 (73	4)971-3335				
.4	Emerge	ency telephone num	ber:							
	Emer	gency Contact:	CHEMTREC Within US			0)424-9300				
			CHEMTREC Outside U	SA and Canada:	+1 (70	3)527-3887				
			Section 2. Ha	zards Identif	ication					
2.1	Classif	ication of the Subst	ance or Mixture:							
2.2	Label E	Elements:								
	GHS	Signal Word:	None							
	GHS	Hazard Phrases:								
	Base	d on evaluation of cur	rently available data this sub	ostance or mixture i	s not classifiable ad	ccording to GHS.				
	GHS	GHS Precaution Phrases:								
	No pł	hrases apply.								
	GHS	Response Phrases:								
	•	hrases apply.								
		Storage and Dispos	al Phrases:							
	Pleas	se refer to Section 7 fo	or Storage and Section 13 fo	-						
2.3	Pleas Advers	se refer to Section 7 fo se Human Health	Material may be irritating to	the mucous membr	anes and upper rea	spiratory tract.				
2.3	Pleas Advers	se refer to Section 7 fo se Human Health s and Symptoms:	Material may be irritating to May be harmful by inhalatio	the mucous membr n, ingestion, or skin	anes and upper rea	spiratory tract.				
2.3	Pleas Advers	se refer to Section 7 for se Human Health s and Symptoms:	Material may be irritating to	the mucous membr n, ingestion, or skin piratory irritation.	anes and upper res absorption.					
2.3	Pleas Advers	se refer to Section 7 fo se Human Health s and Symptoms:	Material may be irritating to May be harmful by inhalatio May cause eye, skin, or res To the best of our knowledg	the mucous membr n, ingestion, or skin piratory irritation. e, the toxicological	anes and upper res absorption. properties have no	t been thoroughly investigate				
	Pleas Advers Effects	se refer to Section 7 fo se Human Health s and Symptoms: Secti	Material may be irritating to May be harmful by inhalatio May cause eye, skin, or res To the best of our knowledg On 3. Composition	the mucous membr n, ingestion, or skin piratory irritation. e, the toxicological n/Information	anes and upper res absorption. properties have no on Ingredie	t been thoroughly investigate				
2.3 CAS	Pleas Advers Effects # /	se refer to Section 7 fo se Human Health s and Symptoms: Secti	Material may be irritating to May be harmful by inhalation May cause eye, skin, or resp To the best of our knowledg On 3. Composition onents (Chemical Name)/	the mucous membr n, ingestion, or skin piratory irritation. e, the toxicological	anes and upper res absorption. properties have no	t been thoroughly investigate				
CAS	Pleas Advers Effects # /	se refer to Section 7 fo se Human Health s and Symptoms: Secti Hazardous Compo REACH Registrati	Material may be irritating to May be harmful by inhalation May cause eye, skin, or resp To the best of our knowledg On 3. Composition onents (Chemical Name)/	the mucous membr n, ingestion, or skin piratory irritation. e, the toxicological n/Information	anes and upper res absorption. properties have no ON Ingredie EC No./	t been thoroughly investigate				
CAS	Pleas Advers Effects # / CS #	se refer to Section 7 fo se Human Health s and Symptoms: Secti Hazardous Compo REACH Registrati	Material may be irritating to May be harmful by inhalatio May cause eye, skin, or res To the best of our knowledg On 3. Composition onents (Chemical Name)/ on No.	the mucous membr n, ingestion, or skin piratory irritation. e, the toxicological n/Information Concentration	anes and upper res absorption. properties have no ON INGREDIE EC No./ EC Index No.	t been thoroughly investigate NtS GHS Classification				
CAS RTEO 118 NA	Pleas Advers Effects # / CS #	se refer to Section 7 fo se Human Health s and Symptoms: Secti Hazardous Compo REACH Registrati	Material may be irritating to May be harmful by inhalatio May cause eye, skin, or res To the best of our knowledg On 3. Composition onents (Chemical Name)/ on No.	the mucous membr n, ingestion, or skin piratory irritation. e, the toxicological n/Information Concentration	anes and upper res absorption. properties have no on Ingredie EC No./ EC Index No. 214-684-5	t been thoroughly investigate NtS GHS Classification				
CAS RTE( 118 NA 77 TY29	Pleas Advers Effects # / CS # 5-53-1 -86-1 00000	se refer to Section 7 fo se Human Health s and Symptoms: Secti Hazardous Compo REACH Registrati Tris[hydroxymethyl]ar Trizma base	Material may be irritating to May be harmful by inhalation May cause eye, skin, or resp To the best of our knowledg ON 3. Composition onents (Chemical Name)/ on No.	the mucous membr n, ingestion, or skin piratory irritation. e, the toxicological n/Information Concentration 19.83 % 2.91 %	anes and upper res absorption. properties have no ON Ingredie EC No./ EC Index No. 214-684-5 NA	t been thoroughly investigate NtS GHS Classification				
CAS RTE( 118 NA 77 TY290 900	Pleas Advers Effects # / CS # 5-53-1 -86-1 00000 5-64-5	se refer to Section 7 fo se Human Health s and Symptoms: Secti Hazardous Compo REACH Registrati Tris[hydroxymethyl]ar Trizma base Polyoxyethylenesorbit	Material may be irritating to May be harmful by inhalation May cause eye, skin, or resp To the best of our knowledg On 3. Composition onents (Chemical Name)/ on No.	the mucous membr n, ingestion, or skin piratory irritation. e, the toxicological n/Information Concentration 19.83 %	anes and upper res absorption. properties have nor <b>ON Ingredie</b> <b>EC No./</b> <b>EC Index No.</b> 214-684-5 NA 201-064-4 NA 500-018-3	t been thoroughly investigate NtS GHS Classification				
CAS RTE( 118 NA 77 TY290 900	Pleas Advers Effects # / CS # 5-53-1 -86-1 00000	se refer to Section 7 fo se Human Health s and Symptoms: Secti Hazardous Compo REACH Registrati Tris[hydroxymethyl]ar Trizma base	Material may be irritating to May be harmful by inhalation May cause eye, skin, or resp To the best of our knowledg On 3. Composition onents (Chemical Name)/ on No.	the mucous membr n, ingestion, or skin piratory irritation. e, the toxicological n/Information Concentration 19.83 % 2.91 %	anes and upper res absorption. properties have no ON Ingredie EC No./ EC Index No. 214-684-5 NA 201-064-4 NA	t been thoroughly investigate				
CAS RTEC 118 NA 77 TY290 900 TR74	Pleas Advers Effects # / CS # 5-53-1 -86-1 00000 5-64-5	se refer to Section 7 for se Human Health s and Symptoms: Secti Hazardous Compo REACH Registrati Tris[hydroxymethyl]ar Trizma base Polyoxyethylenesorbit 20; Sorbitan, monodo	Material may be irritating to May be harmful by inhalation May cause eye, skin, or resp To the best of our knowledg On 3. Composition onents (Chemical Name)/ on No.	the mucous membr n, ingestion, or skin piratory irritation. e, the toxicological n/Information Concentration 19.83 % 2.91 %	anes and upper res absorption. properties have nor <b>ON Ingredie</b> <b>EC No./</b> <b>EC Index No.</b> 214-684-5 NA 201-064-4 NA 500-018-3	t been thoroughly investigate				

Multi-region format



## **SAFETY DATA SHEET** AP Wash Buffer Concentrate (150X)

Multi-region format

Revision: 03/26/2018 Supersedes Revision: 06/16/2017

		Section 4. First Aid Measures
4.1	Description of First Aid	
	Measures:	
	In Case of Inhalation:	Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
	In Case of Skin Contact:	Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
	In Case of Eye Contact:	Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined
		and tested by medical personnel.
	In Case of Ingestion:	Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
		Section 5. Fire Fighting Measures
5.1	Suitable Extinguishing	Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
	Media:	Use water spray to cool fire-exposed containers.
	Unsuitable Extinguishing Media:	A solid water stream may be inefficient.
5.2	Flammable Properties an	dNo data available.
	Hazards:	
		No data available.
	Flash Pt:	No data.
	Explosive Limits:	LEL: No data. UEL: No data.
	Autoignition Pt:	No data.
5.3	Fire Fighting Instructions	<b>s:</b> As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.
		Section 6. Accidental Release Measures
6.1	Protective Precautions,	Avoid breathing vapors and provide adequate ventilation.
		<b>d</b> As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator,
	Emergency Procedures:	
6.2	Environmental	Take steps to avoid release into the environment, if safe to do so.
0	Precautions:	
6.3		r Contain spill and collect, as appropriate.
		gTransfer to a chemical waste container for disposal in accordance with local regulations.
	Up:	
		Section 7. Handling and Storage
7.1	Precautions To Be Taken	Avoid breathing dust/fume/gas/mist/vapours/spray.
	in Handling:	Avoid prolonged or repeated exposure.
7.2	Precautions To Be Taken	Keep container tightly closed.
	in Storing:	Store in accordance with information listed on the product insert.
	Other Precautions:	Hygroscopic.
1		



8.1

8.2

9.1

## SAFETY DATA SHEET **AP Wash Buffer Concentrate (150X)**

Multi-region format

Revision: 03/26/2018 Supersedes Revision: 06/16/2017

#### Section 8. Exposure Controls/Personal Protection **Exposure Parameters:** CAS # **Chemical Name** Jurisdiction **Recommended Exposure Limits** Notations ACGIH TLV 77-86-1 Trizma base CEIL: 5 mg/m3 (salts) France VL TWA: 5 mg/m3 **OSHA PELs** TWA: 5 mg/m3 Britain EH40 TWA: 5.0 mg/m3 Skin Absorption **Exposure Controls:** 8.2.1 Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne **Engineering Controls** levels below recommended exposure limits. (Ventilation etc.): 8.2.2 Personal protection equipment: **Eye Protection:** Safety glasses **Protective Gloves:** Compatible chemical-resistant gloves Other Protective Clothing: Lab coat **Respiratory Equipment** NIOSH approved respirator, as conditions warrant. (Specify Type): Work/Hygienic/Maintenan Do not take internally. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety ce Practices: shower. Wash thoroughly after handling. No data available. Section 9. Physical and Chemical Properties Information on Basic Physical and Chemical Properties **Physical States:** []Gas [X] Liquid [] Solid A clear liquid Appearance and Odor: pH: No data. **Melting Point:** No data. **Boiling Point:** No data. Flash Pt: No data. **Evaporation Rate:** No data. Flammability (solid, gas): No data available. LEL: No data. UEL: No data. **Explosive Limits:** Vapor Pressure (vs. Air or mm No data. Hg): Vapor Density (vs. Air = 1): No data. Specific Gravity (Water = 1): No data. Solubility in Water: No data. **Octanol/Water Partition** No data. **Coefficient:**



## SAFETY DATA SHEET AP Wash Buffer Concentrate (150X)

	-		A	r vi	vasn Bi	iller Conce	entrate (15	UA)	Destates	00/00/0040
Cay	man						× ×	Sup	Revision: ersedes Revision:	03/26/2018 06/16/2017
	Autoigni	tion Pt:	No	data.						
	Decompo	osition Temperat	ure: No	data.						
	Viscosity	/:	No	data.						
9.2	Other Info	ormation								
	Percent	Volatile:	No	data.						
			Sect	ion	10. St	ability and	Reactivity			
10.1	Reactivit	у:	No data ava	ailabl	le.					
10.2	Stability:		Unstable [	]	Stable [ 2	X ]				
10.3	Stability	Note(s):	Stable if sto	ored i	in accordai	nce with informa	tion listed on the	e product in	sert.	
	Polymeri		Will occur [	]	Will not	occur [X]				
10.4		ns To Avoid:	No data ava							
10.5		tibility - Materials	s strong oxid	izing	agents					
	To Avoid									
10.6	Hazardo		carbon diox							
	-	osition or	carbon mor nitrogen ox		e					
	Byprodu	CIS.	-							
			Section	on 1	11. Tox	cicological	Informatio	n		
11.1	Informati		The toxicol	ogica	al effects of	this product hav	ve not been thor	oughly stuc	lied.	
		gical Effects:								
Carci	nogenicity	:	NTP? No	1/	ARC Mono	graphs? No	OSHA Regula	ted? No		
CAS	#	Hazardous Com	ponents (Cl	nemi	cal Name)		NTP	IARC	ACGIH	OSHA
118	85-53-1	Tris[hydroxymeth	yl]aminomet	hane	hydrochlo	oride	n.a.	n.a.	n.a.	n.a.
77	'-86-1	Trizma base					n.a.	n.a.	n.a.	n.a.
900	95-64-5	Polyoxyethylenes Sorbitan, monodo derivatives)					n.a.	n.a.	n.a.	n.a.
773	32-18-5	Water					n.a.	n.a.	n.a.	n.a.
			Sect	tion	12. Ec	cological Ir	formation		++	
12.1	Toxicity:		Avoid relea							
			Runoff from	n fire	control or	dilution water ma	ay cause pollutio	on.		
12.2	Persister		No data ava	ailabl	le.					
	Degrada	-								
12.3	Bioaccur Potential		No data ava	ailabl	le.					
12.4	Mobility		No data ava	ailahl	ام					
12.5	-	of PBT and vPvB								
12.5	assessm		NU Uala av	allaul	IC.					
12.6	Other ad	verse effects:	No data av	ailabl	le.					
1										



## **SAFETY DATA SHEET** AP Wash Buffer Concentrate (150X)

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Revision: 03/26/2018 Supersedes Revision: 06/16/2017

3.1 Waste	Disposal Method: Dispose in accordance with loca	I, state, and federa	I regulations.	
	Section 14. Trans	sport Inform	ation	
14.1 LAND	TRANSPORT (US DOT):	•		
	er Shipping Name: Not dangerous goods.			
DOT Haza				
UN/NA Nu	imber:			
14.1 LAND	TRANSPORT (European ADR/RID):			
ADR/RID	Shipping Name: Not dangerous goods.			
UN Numb	er:			
Hazard Cl				
	RANSPORT (ICAO/IATA):			
	A Shipping Name: Not dangerous goods.			
Additional Tra	ansport Transport in accordance with lo	cal, state, and fede	ral regulations.	
Information:				
	Section 15. Regul	atory Inform	ation	
EPA SARA (S	uperfund Amendments and Reauthorization Act o	of 1986) Lists		
CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
1185-53-1	Tris[hydroxymethyl]aminomethane hydrochloride	No	No	No
77-86-1	Trizma base	No	No	Yes-Cat. N106
9005-64-5	Polyoxyethylenesorbitan Monolaurate (polysorbate 20; Sorbitan, monododecanoate,	No	No	No
	poly(oxy-1,2-ethanediyl) derivatives)			
7732-18-5	Water	No	No	No
CAS #	Hazardous Components (Chemical Name)	Other US EPA o	r State Lists	
1185-53-1	Tris[hydroxymethyl]aminomethane hydrochloride	CAA HAP,ODC: Inventory; CA P	No; CWA NPDES ROP.65: No	No; TSCA: Yes -
77-86-1	Trizma base	CAA HAP,ODC: Inventory; CA P		IPDES: No; TSCA: Yes
9005-64-5	Polyoxyethylenesorbitan Monolaurate		No; CWA NPDES	No; TSCA: Yes -
	(polysorbate 20; Sorbitan, monododecanoate, poly(oxy-1,2-ethanediyl) derivatives)	Inventory; CA P	ROP.65: No	
7732-18-5	Water	CAA HAP,ODC: Inventory; CA P	No; CWA NPDES ROP.65: No	No; TSCA: Yes -
	This CDC was proported in accord	rdance with 29 CFI	R 1910,1200 and R	egulation (EC)
Regulatory Inf	formation This SDS was prepared in account			



## **SAFETY DATA SHEET** AP Wash Buffer Concentrate (150X)

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Section 16. Other Information				
Revision Date:	03/26/2018			
Additional Information About	No data available.			
This Product:				
Company Policy or Disclaimer:	DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.			



	Section 1 Ide	entification of the Substance/Mixture and of th	e Company/Undertaking	
.1	Product Code:		io company, on containing	
. 1	Product Code: Product Name:	501291 Estrone-3-Glucuronide ELISA Antiserum		
_				
.2		he substance or mixture and uses advised ag		
	Relevant identified uses:	For research use only, not for human or vetering	hary use.	
.3	Details of the Supplier of the	-		
	Company Name:	Cayman Chemical Company		
		1180 E. Ellsworth Rd. Ann Arbor, MI 48108		
	Web site address:	www.caymanchem.com		
	Information:	Cayman Chemical Company	+1 (734)971-3335	
.4	Emergency telephone numb			
.4	Emergency Contact:	CHEMTREC Within USA and Canada:	+1 (800)424-9300	
	Emergency contact.	CHEMTREC Outside USA and Canada:	+1 (703)527-3887	
		Section 2. Hazards Identification	ation	
.1	Classification of the Substan	nce or Mixture:		
	Acute Toxicity: Oral, Cate	gory 3		
	Skin Corrosion/Irritation, (	Category 3		
	Aquatic Toxicity (Acute), (			
	Aquatic Toxicity (Acute), ( Aquatic Toxicity (Chronic)	Category 3		
2.2	Aquatic Toxicity (Acute), 0 Aquatic Toxicity (Chronic) Label Elements:	Category 3		
2.2	Aquatic Toxicity (Chronic) Label Elements:	Category 3 , Category 3		
2.2	Aquatic Toxicity (Chronic) Label Elements: GHS Signal Word:	Category 3		
2	Aquatic Toxicity (Chronic) Label Elements: GHS Signal Word: GHS Hazard Phrases:	Category 3 , Category 3		
.2	Aquatic Toxicity (Chronic) Label Elements: GHS Signal Word: GHS Hazard Phrases: H301: Toxic if swallowed.	Category 3 , Category 3 Danger		
2	Aquatic Toxicity (Chronic) Label Elements: GHS Signal Word: GHS Hazard Phrases: H301: Toxic if swallowed. H316: Causes mild skin irrite	Category 3 b, Category 3 Danger		
2.2	Aquatic Toxicity (Chronic) Label Elements: GHS Signal Word: GHS Hazard Phrases: H301: Toxic if swallowed. H316: Causes mild skin irrita H402: Harmful to aquatic life	Category 3 , Category 3 Danger ation. a.		
2.2	Aquatic Toxicity (Chronic) Label Elements: GHS Signal Word: GHS Hazard Phrases: H301: Toxic if swallowed. H316: Causes mild skin irrita H402: Harmful to aquatic life H412: Harmful to aquatic life	Category 3 , Category 3 Danger ation. a.		
2.2	Aquatic Toxicity (Chronic) Label Elements: GHS Signal Word: GHS Hazard Phrases: H301: Toxic if swallowed. H316: Causes mild skin irrita H402: Harmful to aquatic life H412: Harmful to aquatic life GHS Precaution Phrases:	Category 3 a, Category 3 Danger ation. ation. ation. ation. b with long lasting effects.		
2	Aquatic Toxicity (Chronic) Label Elements: GHS Signal Word: GHS Hazard Phrases: H301: Toxic if swallowed. H316: Causes mild skin irrita H402: Harmful to aquatic life H412: Harmful to aquatic life GHS Precaution Phrases: P264: Wash {hands} thoroug	Category 3 a, Category 3 Danger ation. ation. b with long lasting effects. ghly after handling.		
2	Aquatic Toxicity (Chronic) Label Elements: GHS Signal Word: GHS Hazard Phrases: H301: Toxic if swallowed. H316: Causes mild skin irrita H402: Harmful to aquatic life H412: Harmful to aquatic life GHS Precaution Phrases: P264: Wash {hands} thoroug P273: Avoid release to the e	Category 3 a, Category 3 Danger ation. ation. b with long lasting effects. ghly after handling.		
2	Aquatic Toxicity (Chronic) Label Elements: GHS Signal Word: GHS Hazard Phrases: H301: Toxic if swallowed. H316: Causes mild skin irrita H402: Harmful to aquatic life H412: Harmful to aquatic life GHS Precaution Phrases: P264: Wash {hands} thoroug P273: Avoid release to the e GHS Response Phrases:	Category 3 a, Category 3 Danger ation. ation. a with long lasting effects. ghly after handling. environment.		
.2	Aquatic Toxicity (Chronic) Label Elements: GHS Signal Word: GHS Hazard Phrases: H301: Toxic if swallowed. H316: Causes mild skin irrita H402: Harmful to aquatic life H412: Harmful to aquatic life GHS Precaution Phrases: P264: Wash {hands} thoroug P273: Avoid release to the e GHS Response Phrases: P301+310: IF SWALLOWED	Category 3 a, Category 3 Danger ation. ation. b with long lasting effects. ghly after handling.	/physician.	
.2	Aquatic Toxicity (Chronic) Label Elements: GHS Signal Word: GHS Hazard Phrases: H301: Toxic if swallowed. H316: Causes mild skin irrita H402: Harmful to aquatic life H412: Harmful to aquatic life GHS Precaution Phrases: P264: Wash {hands} thoroug P273: Avoid release to the e GHS Response Phrases: P301+310: IF SWALLOWED P330: Rinse mouth.	Category 3 a, Category 3 Danger ation. ation. b with long lasting effects. ghly after handling. environment. D: Immediately call a POISON CENTER or doctor	/physician.	
.2	Aquatic Toxicity (Chronic) Label Elements: GHS Signal Word: GHS Hazard Phrases: H301: Toxic if swallowed. H316: Causes mild skin irrita H402: Harmful to aquatic life H412: Harmful to aquatic life GHS Precaution Phrases: P264: Wash {hands} thoroug P273: Avoid release to the e GHS Response Phrases: P301+310: IF SWALLOWED P330: Rinse mouth. P332+313: If skin irritation o	Category 3 a, Category 3 Danger ation. ation. a with long lasting effects. ghly after handling. environment. D: Immediately call a POISON CENTER or doctor ccurs, get medical advice/attention.	/physician.	
2	Aquatic Toxicity (Chronic) Label Elements: GHS Signal Word: GHS Hazard Phrases: H301: Toxic if swallowed. H316: Causes mild skin irrita H402: Harmful to aquatic life H412: Harmful to aquatic life GHS Precaution Phrases: P264: Wash {hands} thoroug P273: Avoid release to the e GHS Response Phrases: P301+310: IF SWALLOWED P330: Rinse mouth. P332+313: If skin irritation o GHS Storage and Disposa	Category 3 a, Category 3 Danger ation. ation. a with long lasting effects. ghly after handling. environment. D: Immediately call a POISON CENTER or doctor ccurs, get medical advice/attention. I Phrases:		
2	Aquatic Toxicity (Chronic) Label Elements: GHS Signal Word: GHS Hazard Phrases: H301: Toxic if swallowed. H316: Causes mild skin irrita H402: Harmful to aquatic life H412: Harmful to aquatic life GHS Precaution Phrases: P264: Wash {hands} thoroug P273: Avoid release to the e GHS Response Phrases: P301+310: IF SWALLOWED P330: Rinse mouth. P332+313: If skin irritation o GHS Storage and Disposa	Category 3 a, Category 3 Danger ation. ation. a with long lasting effects. ghly after handling. environment. D: Immediately call a POISON CENTER or doctor ccurs, get medical advice/attention.		
2.2	Aquatic Toxicity (Chronic) Label Elements: GHS Signal Word: GHS Hazard Phrases: H301: Toxic if swallowed. H316: Causes mild skin irrita H402: Harmful to aquatic life H412: Harmful to aquatic life GHS Precaution Phrases: P264: Wash {hands} thoroug P273: Avoid release to the e GHS Response Phrases: P301+310: IF SWALLOWED P330: Rinse mouth. P332+313: If skin irritation o GHS Storage and Disposa	Category 3 a, Category 3 Danger ation. ation. a with long lasting effects. ghly after handling. environment. D: Immediately call a POISON CENTER or doctor ccurs, get medical advice/attention. I Phrases:		
2	Aquatic Toxicity (Chronic) Label Elements: GHS Signal Word: GHS Hazard Phrases: H301: Toxic if swallowed. H316: Causes mild skin irrita H402: Harmful to aquatic life H412: Harmful to aquatic life GHS Precaution Phrases: P264: Wash {hands} thoroug P273: Avoid release to the e GHS Response Phrases: P301+310: IF SWALLOWED P330: Rinse mouth. P332+313: If skin irritation o GHS Storage and Disposa	Category 3 a, Category 3 Danger ation. ation. a with long lasting effects. ghly after handling. environment. D: Immediately call a POISON CENTER or doctor ccurs, get medical advice/attention. I Phrases:		



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2.3	Adverse Human Health	Causes mild skin irritation.
	Effects and Symptoms:	Harmful to aquatic life with long lasting effects.
		Material may be irritating to the mucous membranes and upper respiratory tract.
		May be harmful by inhalation or skin absorption.
		May cause eye, skin, or respiratory system irritation.
		Toxic if swallowed.
		To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

# Section 3. Composition/Information on Ingredients

CAS # / RTECS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	GHS Classification
NA NA	Rabbit Anti-Estrone-3-Glucuronide Antibody	< 0.01 %	NA NA	No data available.
1185-53-1 NA	Tris[hydroxymethyl]aminomethane hydrochloride	44.7 %	214-684-5 NA	No data available.
77-86-1 TY2900000	Trizma base	6.4 %	201-064-4 NA	
7647-14-5 VZ4725000	Sodium chloride	28.7 %	231-598-3 NA	No data available.
7646-85-7 ZH1400000	Zinc chloride	0.1 %	231-592-0 030-003-00-2	Acute Tox.(O) 4: H302 Skin Corr. 1B: H314 Aquatic (A) 1: H400 Aquatic (C) 1: H410
7786-30-3 OM2800000	Magnesium chloride	1.4 %	232-094-6 NA	No data available.
9048-46-8 AY9296000	Bovine Serum Albumin (BSA)	17.0 %	232-936-2 NA	Acute Tox.(O) 4: H302
26628-22-8 /Y8050000	Sodium azide	1.69 %	247-852-1 011-004-00-7	Acute Tox.(O) 2: H300 Aquatic (A) 1: H400 Aquatic (C) 1: H410

Section 4. First Aid Measures

#### 4.1 Description of First Aid

 

 Measures:
 In Case of Inhalation:
 Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

 In Case of Skin Contact:
 Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

 In Case of Eye Contact:
 Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.

In Case of Ingestion: Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.



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		Section 5. Fir	e Fighting Measures						
5.1	Suitable Extinguishing	Use alcohol-resistant foam	, carbon dioxide, water, or dry chemical spray.						
	Media:	Use water spray to cool fire	e-exposed containers.						
	Unsuitable Extinguishing	A solid water stream may b	e inefficient.						
	Media:								
5.2	Flammable Properties and	INo data available.							
	Hazards:								
		No data available.							
	Flash Pt:	No data.							
	Explosive Limits:	LEL: No data.	UEL: No data.						
	Autoignition Pt:	No data.							
5.3	Fire Fighting Instructions:	-	ntained breathing apparatus pressure-demand (Ni ive gear to prevent contact with skin and eyes.	OSH approved or					
		Section 6. Accide	ental Release Measures						
6.1	Protective Precautions,	Avoid raising and breathing	g dust, and provide adequate ventilation.						
	Protective Equipment and	-	ar a NIOSH approved self-contained breathing app	paratus, or respirator					
	Emergency Procedures:	and appropriate personal p	protection (rubber boots, safety goggles, and heav	vy rubber gloves).					
6.2	Environmental	Take steps to avoid releas	e into the environment, if safe to do so.						
	Precautions:								
6.3	Methods and Material For	Methods and Material For Contain spill and collect, as appropriate.							
	Containment and Cleaning	Transfer to a chemical was	ste container for disposal in accordance with local	regulations.					
	Up:								
		Section 7. Ha	andling and Storage						
			0 0						
7.1	Precautions To Be Taken	Avoid breathing dust/fume/	gas/mist/vapours/sprav.						
7.1	Precautions To Be Taken in Handling:	Avoid breathing dust/fume/ Avoid prolonged or repeate							
7.1	in Handling:	Avoid prolonged or repeate	ed exposure.						
		Avoid prolonged or repeate Keep container tightly close	ed exposure.						
	in Handling: Precautions To Be Taken in Storing:	Avoid prolonged or repeate Keep container tightly close Store in accordance with in	ed exposure. ed. formation listed on the product insert.						
7.2	in Handling: Precautions To Be Taken in Storing:	Avoid prolonged or repeate Keep container tightly close Store in accordance with in	ed exposure.						
7.2	in Handling: Precautions To Be Taken in Storing: Sect Exposure Parameters:	Avoid prolonged or repeate Keep container tightly close Store in accordance with in	ed exposure. ed. formation listed on the product insert.	Notations					
7.2 8.1 CAS	in Handling: Precautions To Be Taken in Storing: Sect Exposure Parameters: # Chemical Name	Avoid prolonged or repeate Keep container tightly close Store in accordance with in On 8. Exposure C	ed exposure. ed. formation listed on the product insert. Controls/Personal Protection	Notations					
7.2 8.1 CAS	in Handling: Precautions To Be Taken in Storing: Sect Exposure Parameters: # Chemical Name	Avoid prolonged or repeate Keep container tightly close Store in accordance with in ON 8. Exposure C Jurisdiction ACGIH TLV France VL	ed exposure. ed. formation listed on the product insert. Controls/Personal Protection Recommended Exposure Limits	Notations					
7.2 8.1 CAS	in Handling: Precautions To Be Taken in Storing: Sect Exposure Parameters: # Chemical Name	Avoid prolonged or repeate Keep container tightly close Store in accordance with in ON 8. Exposure C Jurisdiction ACGIH TLV France VL OSHA PELs	ed exposure. ed. formation listed on the product insert. Controls/Personal Protection Recommended Exposure Limits CEIL: 5 mg/m3 (salts) TWA: 5 mg/m3 TWA: 5 mg/m3						
7.2 8.1 CAS 77-80	in Handling: Precautions To Be Taken in Storing: Section Exposure Parameters: # Chemical Name S-1 Trizma base	Avoid prolonged or repeate Keep container tightly close Store in accordance with in ON 8. Exposure C Jurisdiction ACGIH TLV France VL OSHA PELs Britain EH40	ad exposure.         ad.         formation listed on the product insert.         Controls/Personal Protection         Recommended Exposure Limits         CEIL: 5 mg/m3 (salts)         TWA: 5 mg/m3         TWA: 5 mg/m3         TWA: 5.0 mg/m3						
7.2 8.1 CAS 77-80	in Handling: Precautions To Be Taken in Storing: Sect Exposure Parameters: # Chemical Name	Avoid prolonged or repeate Keep container tightly close Store in accordance with in ON 8. Exposure C Jurisdiction ACGIH TLV France VL OSHA PELs	ad exposure.         ad.         formation listed on the product insert.         Controls/Personal Protection         Recommended Exposure Limits         CEIL: 5 mg/m3 (salts)         TWA: 5 mg/m3         TWA: 5.0 mg/m3         TLV: 1 mg/m3						
7.2 8.1 CAS 77-80	in Handling: Precautions To Be Taken in Storing: Section Exposure Parameters: # Chemical Name S-1 Trizma base	Avoid prolonged or repeate Keep container tightly close Store in accordance with in ON 8. Exposure C Jurisdiction ACGIH TLV France VL OSHA PELs Britain EH40	ad exposure.         ad.         formation listed on the product insert.         Controls/Personal Protection         Recommended Exposure Limits         CEIL: 5 mg/m3 (salts)         TWA: 5 mg/m3         TWA: 5 mg/m3         TWA: 5.0 mg/m3						
7.2 8.1 CAS 77-80	in Handling: Precautions To Be Taken in Storing: Section Exposure Parameters: # Chemical Name S-1 Trizma base	Avoid prolonged or repeate Keep container tightly close Store in accordance with in ON 8. Exposure C Jurisdiction ACGIH TLV France VL OSHA PELs Britain EH40 ACGIH TLV	ad exposure.         ad.         formation listed on the product insert.         Controls/Personal Protection         Recommended Exposure Limits         CEIL: 5 mg/m3 (salts)         TWA: 5 mg/m3         TWA: 5 mg/m3         TWA: 5.0 mg/m3         TLV: 1 mg/m3         STEL: 2 mg/m3						
7.2 8.1 CAS 77-80	in Handling: Precautions To Be Taken in Storing: Section Exposure Parameters: # Chemical Name S-1 Trizma base	Avoid prolonged or repeate Keep container tightly close Store in accordance with in ON 8. Exposure C Jurisdiction ACGIH TLV France VL OSHA PELs Britain EH40 ACGIH TLV France VL	ad exposure.         ad.         formation listed on the product insert.         Controls/Personal Protection         Recommended Exposure Limits         CEIL: 5 mg/m3 (salts)         TWA: 5 mg/m3         TWA: 5 mg/m3         TWA: 5.0 mg/m3         TLV: 1 mg/m3         STEL: 2 mg/m3         TWA: 1 mg/m3						
7.2 8.1 CAS 77-80	in Handling: Precautions To Be Taken in Storing: Secti Exposure Parameters: # Chemical Name -85-7 Zinc chloride	Avoid prolonged or repeate Keep container tightly close Store in accordance with in ON 8. Exposure C Jurisdiction ACGIH TLV France VL OSHA PELs Britain EH40 ACGIH TLV France VL OSHA PELs Britain EH40	ed exposure. ed. formation listed on the product insert. Controls/Personal Protection Recommended Exposure Limits CEIL: 5 mg/m3 (salts) TWA: 5 mg/m3 TWA: 5 mg/m3 TWA: 5.0 mg/m3 TWA: 5.0 mg/m3 TLV: 1 mg/m3 STEL: 2 mg/m3 TWA: 1 mg/m3 PEL: 1 mg/m3 () STEL: 2 mg/m3 ()						
7.2 8.1 CAS 77-80	in Handling: Precautions To Be Taken in Storing: Section Exposure Parameters: # Chemical Name S-1 Trizma base	Avoid prolonged or repeate Keep container tightly close Store in accordance with in ion 8. Exposure 0 Jurisdiction ACGIH TLV France VL OSHA PELs Britain EH40 ACGIH TLV France VL OSHA PELs Britain EH40	ed exposure. ed. formation listed on the product insert. Controls/Personal Protection Recommended Exposure Limits CEIL: 5 mg/m3 (salts) TWA: 5 mg/m3 TWA: 5 mg/m3 TWA: 5.0 mg/m3 TWA: 5.0 mg/m3 TLV: 1 mg/m3 STEL: 2 mg/m3 TWA: 1 mg/m3 PEL: 1 mg/m3 TWA: 1 mg/m3 () STEL: 2 mg/m3 () CEIL: 0.29 mg/m3	Skin Absorption					
7.2 8.1 77-80 7646	in Handling: Precautions To Be Taken in Storing: Secti Exposure Parameters: # Chemical Name -85-7 Zinc chloride	Avoid prolonged or repeate Keep container tightly close Store in accordance with in ON 8. Exposure C Jurisdiction ACGIH TLV France VL OSHA PELs Britain EH40 ACGIH TLV France VL OSHA PELs Britain EH40	ed exposure. ed. formation listed on the product insert. Controls/Personal Protection Recommended Exposure Limits CEIL: 5 mg/m3 (salts) TWA: 5 mg/m3 TWA: 5 mg/m3 TWA: 5.0 mg/m3 TWA: 5.0 mg/m3 TLV: 1 mg/m3 STEL: 2 mg/m3 TWA: 1 mg/m3 PEL: 1 mg/m3 PEL: 1 mg/m3 () STEL: 2 mg/m3 () STEL: 2 mg/m3 () STEL: 2 mg/m3 TWA: 1 mg/m3 PEL: 1 mg/m3 TWA: 1 mg/m3 TWA: 0.1 mg/m3	Skin Absorption					
7.2 8.1 77-80 7646	in Handling: Precautions To Be Taken in Storing: Secti Exposure Parameters: # Chemical Name -85-7 Zinc chloride	Avoid prolonged or repeate Keep container tightly close Store in accordance with in ion 8. Exposure 0 Jurisdiction ACGIH TLV France VL OSHA PELs Britain EH40 ACGIH TLV France VL OSHA PELs Britain EH40	ed exposure. ed. formation listed on the product insert. Controls/Personal Protection Recommended Exposure Limits CEIL: 5 mg/m3 (salts) TWA: 5 mg/m3 TWA: 5 mg/m3 TWA: 5.0 mg/m3 TWA: 5.0 mg/m3 TLV: 1 mg/m3 STEL: 2 mg/m3 TWA: 1 mg/m3 PEL: 1 mg/m3 TWA: 1 mg/m3 () STEL: 2 mg/m3 () CEIL: 0.29 mg/m3	Notations  Notations  Skin Absorption  Skin Absorption  Skin Absorption					

Multi-region format



1			1	1	
	8-22-8 Sodium azide		Britain EH40	TWA: 0.1 mg/m3 () STEL: 0.3 mg/m3 ()	Skin Absorpti
P .	inued)				
8.2	Exposure Controls:				
8.2.1	0 0			xhaust ventilation, or other engine	ering controls to control airbor
	Ϋ́Υ,		below recommended expe		
8.2.2	Personal protection equip				
			glasses		
		-	atible chemical-resistant g	loves	
	Other Protective Clothing:				
		NIOSI	H approved respirator, as o	conditions warrant.	
	(Specify Type):				
	Work/Hygienic/Maintenan				
				material should be equipped with	an eyewash and a safety show
			thoroughly after handling.		
		No da	ta available.		
	Se	ctio	n 9. Physical an	d Chemical Properties	<b>9</b>
9.1	Information on Basic Physi	cal ar	nd Chemical Properties		
	Physical States:		[]Gas []Liquid	[X] Solid	
	Appearance and Odor:		A lyophilized solid		
	pH:		No data.		
	Melting Point:		No data.		
	Boiling Point:		No data.		
	Flash Pt:		No data.		
	Evaporation Rate:		No data.		
	Flammability (solid, gas):		No data available.		
	Explosive Limits:		LEL: No data.	UEL: No data.	
	Vapor Pressure (vs. Air or	mm	No data.		
	Hg):				
	Vapor Density (vs. Air = 1):	:	No data.		
	Specific Gravity (Water = 1	):	No data.		
	Solubility in Water:		No data.		
	Octanol/Water Partition		No data.		
	Coefficient:				
	Autoignition Pt:		No data.		
	Decomposition Temperatu	re:	No data.		
	Viscosity:		No data.		
9.2	Other Information				
	Percent Volatile:		No data.		



			Section 10. Stability a	and Reacti	vity				
10.1	Reactiv	ity:	No data available.						
10.2	Stability	/:	Unstable [ ] Stable [ X ]						
10.3	Stability	/ Note(s):	Stable if stored in accordance with information listed on the product insert.						
Polymerization: 10.4 Conditions To Avoid:			Will occur [ ] Will not occur [ X ]						
			No data available.						
10.5	Incomp	atibility - Materia	<b>Is</b> acids						
To Avoid:			strong oxidizing agents						
10.6	Hazardo	ous	No data available.						
	Decomp	position or							
	Byprod	ucts:							
			Section 11. Toxicologi	cal Informa	ation				
11.1	Informa	tion on	The toxicological effects of this produ	ct have not beer	n thoroughly s	udied.			
	Toxicol	ogical Effects:	Sodium azide - Toxicity Data: Oral LI		-		ng/kg;		
			Intraperitoneal LDLO (rat): 30 mg/kg;		. ,	0 0			
			Zinc chloride - Toxicity Data: Oral LD		•	-			
			LD50 (mouse): 329 mg/kg; Intraperito 330 mg/kg;	neai LD50 (mol	use):24 mg/kg	Subcutaneous	s LD50 (mouse		
	Chronic			ricultural chemic	cal drug muta	aen reproduct	ive effector an		
Chronic Toxicological Effects:			Sodium azide - Investigated as an agricultural chemical, drug, mutagen, reproductive effector, and tumorigen.						
			Zinc chloride - Investigated as an agricultural chemical, mutagen, primary irritant, reproductive effector, and tumorigen.						
			Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here.						
			See actual entry in RTECS for complete information.						
			Sodium azide RTECS Number: VY80	50000					
			Zinc chloride RTECS Number: ZH14	00000					
CAS	#		mponents (Chemical Name)	NTP	IARC	ACGIH	OSHA		
	NA		one-3-Glucuronide Antibody	n.a.	n.a.	n.a.	n.a.		
118	35-53-1	Tris[hydroxyme	thyl]aminomethane hydrochloride	n.a.	n.a.	n.a.	n.a.		
77	7-86-1	Trizma base		n.a.	n.a.	n.a.	n.a.		
764	17-14-5	Sodium chloride	9	n.a.	n.a.	n.a.	n.a.		
764	16-85-7	Zinc chloride		n.a.	n.a.	n.a.	n.a.		
778	36-30-3	Magnesium chlo	pride	n.a.	n.a.	n.a.	n.a.		
904	18-46-8	Bovine Serum A	Albumin (BSA)	n.a.	n.a.	n.a.	n.a.		
266	28-22-8	Sodium azide		n.a.	n.a.	A4	n.a.		
		•	Section 12. Ecologic	al Informat	ion		•		
12.1	Toxicity	<i>/</i> :	Avoid release into the environment.						
			Runoff from fire control or dilution wa	ter may cause p	ollution.				
	Persiste	ence and	No data available.						
12.2		ability:							
12.2	Degrada								
12.2 12.3		umulative	No data available.						
			No data available.						
12.3	Bioaccu Potentia		No data available. No data available.						
	Bioaccu Potentia Mobility	al: / in Soil:							
12.3 12.4	Bioaccu Potentia Mobility	al: / in Soil: of PBT and vPv	No data available.						



12.6 Other a	adverse effects:	No data available.			
		Section 13. Dispos	al Consider	ations	
13.1 Waste	Disposal Method:	Dispose in accordance with loca	I, state, and federa	I regulations.	
		Section 14. Trans	sport Inform	ation	
14.1 LAND	TRANSPORT (US I	DOT):			
DOT Prop	er Shipping Name:	Toxic solid, organic, n.o.s.			
DOT Haza	rd Class:	6.1 POISON			
UN/NA Nu	imber:	UN2811	Packing Gr	oup:	III
		POISON 8			
14.1 LAND	TRANSPORT (Euro	opean ADR/RID):			
ADR/RID	Shipping Name:	Toxic solid, organic, n.o.s.			
UN Numb		2811	Packing Gr	oup:	III
Hazard CI		6.1 - POISON			
	RANSPORT (ICAO/I	-			
Additional Tra	A Shipping Name: ansport	Toxic solid, organic, n.o.s. When sold in quantities of le of E1, E2, E4, or E5, this item Therefore packaging does r Transport in accordance with lo	meets the De Minin not have to be labe	mis Quantities exem led as Dangerous G	ption, per IATA 2.6.10.
		Section 15. Regul	atory Inform	ation	
EPA SARA (S	uperfund Amendm	ents and Reauthorization Act of	of 1986) Lists		
CAS #	Hazardous Com	ponents (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
NA	Rabbit Anti-Estro	ne-3-Glucuronide Antibody	No	No	No
1185-53-1	Tris[hydroxymeth	yl]aminomethane hydrochloride	No	No	No
77-86-1	Trizma base		No	No	Yes-Cat. N106
7647-14-5	Sodium chloride		No	No	No
7646-85-7	Zinc chloride		No	Yes 1000 LB	Yes-Cat. N982
7786-30-3	Magnesium chlori	de	No	No	No
9048-46-8	Bovine Serum Alk	oumin (BSA)	No	No	No
26628-22-8	Sodium azide		Yes 500 LB	Yes 1000 LB	Yes
CAS #	Hazardous Com	ponents (Chemical Name)	Other US EPA o	r State Lists	
NA		ne-3-Glucuronide Antibody			No; TSCA: No; CA
1185-53-1	Tris[hydroxymeth	yl]aminomethane hydrochloride	CAA HAP,ODC: Inventory; CA P	No; CWA NPDES: ROP.65: No	No; TSCA: Yes -
77-86-1	Trizma base		CAA HAP,ODC: Inventory; CA P		PDES: No; TSCA: Yes -
7647-14-5	Sodium chloride		CAA HAP,ODC: Inventory; CA P	No; CWA NPDES: ROP.65: No	No; TSCA: Yes -
					Multi-region format



/646-85-/	Zinc chioride		Inventory; CA PROP.65: No					
7786-30-3	Magnesium chlo	ride	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No					
9048-46-8	Bovine Serum Al	bumin (BSA)	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No					
26628-22-8	Sodium azide		CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No					
Regulatory Info	ormation	This SDS was prepared in accor No.1272/2008.	This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.					
		Section 16. Oth	er Information					
Revision Date:		03/26/2018						
Additional Info	rmation About	No data available.						
This Product:								
	y or Disclaimer:	currently available to us. Howeve express or implied, with respect	s believed to be accurate and represents the best information er, we make no warranty of merchantability or any other warranty, to such information, and we assume no liability resulting from its wn investigations to determine the suitability of the information for					



of the Safety Data Sheet: Cayman Chemical Compar- 1180 E. Ellsworth Rd. Ann Arbor, MI 48108 www.caymanchem.com Cayman Chemical Compar- number: CHEMTREC Within USA a CHEMTREC Outside USA Section 2. Haza bstance or Mixture: Category 4 ion, Category 3 te), Category 3 onic), Category 3	icuronide AP Tracer <b>r mixture and uses advised ag</b> use only, not for human or veter <b>neet:</b> nical Company orth Rd. 48108 chem.com nical Company Within USA and Canada:	<b>H against:</b> eterinary use. +1 (734)971 +1 (800)424 +1 (703)523	1-3335						
Estrone-3-Glucuronide AP s of the substance or mixture and es: For research use only, not of the Safety Data Sheet: Cayman Chemical Comparent 1180 E. Ellsworth Rd. Ann Arbor, MI 48108 www.caymanchem.com Cayman Chemical Comparent Cayman Chemical Comparent Section 2. Haza bstance or Mixture: Category 4 fon, Category 3 te), Category 3 onic), Category 3	r mixture and uses advised ag use only, not for human or veter neet: nical Company orth Rd. 48108 chem.com nical Company Within USA and Canada: Outside USA and Canada:	eterinary use. +1 (734)971 +1 (800)424 +1 (703)523							
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1180 E. Ellsworth Rd. Ann Arbor, MI 48108 www.caymanchem.com Cayman Chemical Compar- number: CHEMTREC Within USA a CHEMTREC Outside USA Section 2. Haza bstance or Mixture: Category 4 fon, Category 3 te), Category 3 onic), Category 3	orth Rd. 48108 chem.com nical Company Within USA and Canada: Outside USA and Canada:	+1 (800)424 +1 (703)527							
Ann Arbor, MI 48108 www.caymanchem.com Cayman Chemical Compar- number: CHEMTREC Within USA a CHEMTREC Outside USA Section 2. Haza bstance or Mixture: Category 4 ion, Category 3 te), Category 3 onic), Category 3	48108 chem.com nical Company Within USA and Canada: Outside USA and Canada:	+1 (800)424 +1 (703)527							
www.caymanchem.com Cayman Chemical Compar- number: CHEMTREC Within USA a CHEMTREC Outside USA Section 2. Haza bstance or Mixture: Category 4 fon, Category 3 te), Category 3 onic), Category 3	chem.com nical Company Within USA and Canada: Outside USA and Canada:	+1 (800)424 +1 (703)527							
Cayman Chemical Compar- number: CHEMTREC Within USA a CHEMTREC Outside USA Section 2. Haza bstance or Mixture: Category 4 ion, Category 3 te), Category 3 onic), Category 3	nical Company Within USA and Canada: Outside USA and Canada:	+1 (800)424 +1 (703)527							
CHEMTREC Within USA a CHEMTREC Outside USA Section 2. Haza bstance or Mixture: Category 4 ion, Category 3 te), Category 3 onic), Category 3	Within USA and Canada: Outside USA and Canada:	+1 (800)424 +1 (703)527							
CHEMTREC Within USA a CHEMTREC Outside USA Section 2. Haza bstance or Mixture: Category 4 fon, Category 3 te), Category 3 onic), Category 3	Outside USA and Canada:	+1 (703)527	1-9300						
CHEMTREC Outside USA Section 2. Haza bstance or Mixture: Category 4 ion, Category 3 te), Category 3 onic), Category 3	Outside USA and Canada:	+1 (703)527	1-9300						
Section 2. Haza bstance or Mixture: Category 4 ion, Category 3 te), Category 3 onic), Category 3									
bstance or Mixture: Category 4 fon, Category 3 te), Category 3 onic), Category 3	2. Hazards Identific	fication	-3887						
Category 4 on, Category 3 te), Category 3 onic), Category 3									
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wed.									
irritation.		H402: Harmful to aquatic life.							
n irritation. tic life.	, effecte								
n irritation. tic life. tic life with long lasting effects.	) effects.		GHS Precaution Phrases:						
n irritation. tic life. tic life with long lasting effects. <b>ses:</b>									
n irritation. tic life. tic life with long lasting effects. <b>ses:</b> oroughly after handling.									
n irritation. tic life. tic life with long lasting effects. <b>ses:</b>									
n irritation. tic life. tic life with long lasting effects. <b>ses:</b> oroughly after handling.									
n irritation. tic life. tic life with long lasting effects. <b>ses:</b> oroughly after handling. the environment.	ıg.	ın if you feel unwell.							
n irritation. tic life. tic life with long lasting effects. <b>ses:</b> oroughly after handling. the environment.	ıg.	an if you feel unwell.							
n irritation. tic life. tic life with long lasting effects. <b>ses:</b> oroughly after handling. the environment.	ig. N CENTER or doctor/physician i	an if you feel unwell.							
n irritation. tic life. tic life with long lasting effects. <b>ses:</b> oroughly after handling. the environment. <b>tes:</b> OWED: Call a POISON CENTER o	ig. N CENTER or doctor/physician i	an if you feel unwell.							
d Phrases:	I Word: Warning d Phrases: nful if swallowed.	d Phrases:	rd Phrases: nful if swallowed. ses mild skin irritation.						



Revision: 03/26/2018

2.3	Adverse Human Health	Causes mild skin irritation.
	Effects and Symptoms:	Harmful to aquatic life with long lasting effects.
		Material may be irritating to the mucous membranes and upper respiratory tract.
		May be harmful by inhalation or skin absorption.
		May cause eye, skin, or respiratory system irritation.
		Toxic if swallowed.
		To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

# Section 3. Composition/Information on Ingredients

CAS # / RTECS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	GHS Classification
NA NA	Estrone-3-Glucuronide-Alkaline Phosphatase Tracer	< 0.01 %	NA NA	No data available.
1185-53-1 NA	Tris[hydroxymethyl]aminomethane hydrochloride	38.1 %	214-684-5 NA	No data available.
77-86-1 TY2900000	Trizma base	5.5 %	201-064-4 NA	
7647-14-5 VZ4725000	Sodium chloride	24.6 %	231-598-3 NA	No data available.
7646-85-7 ZH1400000	Zinc chloride	0.1 %	231-592-0 030-003-00-2	Acute Tox.(O) 4: H302 Skin Corr. 1B: H314 Aquatic (A) 1: H400 Aquatic (C) 1: H410
7786-30-3 OM2800000	Magnesium chloride	1.2 %	232-094-6 NA	No data available.
9048-46-8 AY9296000	Bovine Serum Albumin (BSA)	29.0 %	232-936-2 NA	Acute Tox.(O) 4: H302
26628-22-8 /Y8050000	Sodium azide	1.5 %	247-852-1 011-004-00-7	Acute Tox.(O) 2: H300 Aquatic (A) 1: H400 Aquatic (C) 1: H410

Section 4. First Aid Measures

#### 4.1 **Description of First Aid**

Measures: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. In Case of Inhalation: Get immediate medical attention. In Case of Skin Contact: Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse. Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined In Case of Eye Contact: and tested by medical personnel. In Case of Ingestion:

Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.



		Section 5. Fire	e Fighting ivieasures						
5.1	Suitable Extinguishing		carbon dioxide, water, or dry chemical spray.						
5.1	Media:								
	Unsuitable Extinguishing A solid water stream may be inefficient.								
	Media:								
5.2	Flammable Properties and No data available.								
	Hazards:								
		No data available.							
	Flash Pt:	No data.							
	Explosive Limits:	LEL: No data.	UEL: No data.						
	Autoignition Pt:	No data.							
5.3	Fire Fighting Instructions	Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or							
		equivalent), and full protecti	ve gear to prevent contact with skin and eyes.						
		Section 6. Accide	ntal Release Measures						
6.1	Protective Precautions,	0 0	dust, and provide adequate ventilation.						
	Protective Equipment an	d As conditions warrant, wea	r a NIOSH approved self-contained breathing ap	paratus, or respirator					
	Emergency Procedures:	and appropriate personal p	rotection (rubber boots, safety goggles, and heav	vy rubber gloves).					
6.2	Environmental Take steps to avoid release into the environment, if safe to do so.								
	Precautions:								
6.3	Methods and Material Fo	r Contain spill and collect, as	s appropriate.						
	Containment and Cleanin	ngTransfer to a chemical was	te container for disposal in accordance with local	regulations.					
	Up:								
		Section 7. Ha	ndling and Storage						
7.1	Precautions To Be Taker	n Avoid breathing dust/fume/g	gas/mist/vapours/spray.						
	in Handling:	Avoid prolonged or repeated	d exposure.						
7.2	Precautions To Be Taker	<ol> <li>Keep container tightly close</li> </ol>	d.						
	in Storing:	Store in accordance with inf	formation listed on the product insert.						
	Sec	tion 8. Exposure C	Controls/Personal Protection						
3.1	Sec Exposure Parameters:	tion 8. Exposure C	Controls/Personal Protection						
	Exposure Parameters:	tion 8. Exposure C	Controls/Personal Protection Recommended Exposure Limits	Notations					
CAS	Exposure Parameters: # Chemical Name	·		Notations					
CAS	Exposure Parameters: # Chemical Name	Jurisdiction	Recommended Exposure Limits	Notations					
CAS	Exposure Parameters: # Chemical Name	Jurisdiction ACGIH TLV	Recommended Exposure Limits           CEIL: 5 mg/m3 (salts)	Notations					
CAS	Exposure Parameters: # Chemical Name	Jurisdiction           ACGIH TLV           France VL	Recommended Exposure Limits         CEIL: 5 mg/m3 (salts)         TWA: 5 mg/m3	Notations					
<b>CAS</b> ; 77-86	Exposure Parameters: # Chemical Name	Jurisdiction         ACGIH TLV         France VL         OSHA PELs	Recommended Exposure Limits         CEIL: 5 mg/m3         TWA: 5 mg/m3         TWA: 5.0 mg/m3         TLV: 1 mg/m3						
<b>CAS</b> ; 77-86	Exposure Parameters: # Chemical Name 5-1 Trizma base	Jurisdiction         ACGIH TLV         France VL         OSHA PELs         Britain EH40         ACGIH TLV	Recommended Exposure LimitsCEIL: 5 mg/m3 (salts)TWA: 5 mg/m3TWA: 5 mg/m3TWA: 5.0 mg/m3TLV: 1 mg/m3STEL: 2 mg/m3						
<b>CAS</b> ; 77-86	Exposure Parameters: # Chemical Name 5-1 Trizma base	Jurisdiction         ACGIH TLV         France VL         OSHA PELs         Britain EH40         ACGIH TLV	Recommended Exposure LimitsCEIL: 5 mg/m3 (salts)TWA: 5 mg/m3TWA: 5 mg/m3TWA: 5.0 mg/m3TLV: 1 mg/m3STEL: 2 mg/m3TWA: 1 mg/m3						
CAS : 77-86	Exposure Parameters: # Chemical Name 5-1 Trizma base	Jurisdiction         ACGIH TLV         France VL         OSHA PELs         Britain EH40         ACGIH TLV         France VL         OSHA PELs	Recommended Exposure LimitsCEIL: 5 mg/m3 (salts)TWA: 5 mg/m3TWA: 5 mg/m3TWA: 5.0 mg/m3TLV: 1 mg/m3STEL: 2 mg/m3TWA: 1 mg/m3PEL: 1 mg/m3						
<b>CAS</b> ; 77-86	Exposure Parameters: # Chemical Name 5-1 Trizma base	Jurisdiction         ACGIH TLV         France VL         OSHA PELs         Britain EH40         ACGIH TLV	Recommended Exposure LimitsCEIL: 5 mg/m3 (salts)TWA: 5 mg/m3TWA: 5 mg/m3TWA: 5.0 mg/m3TLV: 1 mg/m3STEL: 2 mg/m3TWA: 1 mg/m3PEL: 1 mg/m3TWA: 1 mg/m3 ()						
<b>CAS</b> : 77-86 7646-	Exposure Parameters: # Chemical Name 3-1 Trizma base -85-7 Zinc chloride	Jurisdiction         ACGIH TLV         France VL         OSHA PELs         Britain EH40         ACGIH TLV         France VL         OSHA PELs         Britain EH40         ACGIH TLV         Britain EH40         France VL         OSHA PELs         Britain EH40	Recommended Exposure LimitsCEIL: 5 mg/m3 (salts)TWA: 5 mg/m3TWA: 5 mg/m3TWA: 5.0 mg/m3TLV: 1 mg/m3STEL: 2 mg/m3TWA: 1 mg/m3PEL: 1 mg/m3TWA: 1 mg/m3 ()STEL: 2 mg/m3 ()						
<b>CAS</b> : 77-86 7646-	Exposure Parameters: # Chemical Name 5-1 Trizma base	Jurisdiction         ACGIH TLV         France VL         OSHA PELs         Britain EH40         ACGIH TLV         France VL         OSHA PELs         Britain EH40         ACGIH TLV         France VL         OSHA PELs         Britain EH40         ACGIH TLV	Recommended Exposure Limits           CEIL: 5 mg/m3 (salts)           TWA: 5 mg/m3           TWA: 5 mg/m3           TWA: 5.0 mg/m3           TLV: 1 mg/m3           STEL: 2 mg/m3           TWA: 1 mg/m3           PEL: 1 mg/m3           TWA: 1 mg/m3           CEIL: 0.29 mg/m3	Skin Absorptio					
<b>CAS</b> : 77-86 7646-	Exposure Parameters: # Chemical Name 3-1 Trizma base -85-7 Zinc chloride	Jurisdiction         ACGIH TLV         France VL         OSHA PELs         Britain EH40         ACGIH TLV         France VL         OSHA PELs         Britain EH40         ACGIH TLV         Britain EH40         France VL         OSHA PELs         Britain EH40	Recommended Exposure Limits           CEIL: 5 mg/m3 (salts)           TWA: 5 mg/m3           TWA: 5 mg/m3           TWA: 5.0 mg/m3           TLV: 1 mg/m3           STEL: 2 mg/m3           TWA: 1 mg/m3           PEL: 1 mg/m3           TWA: 2 mg/m3           TWA: 1 mg/m3           PEL: 2 mg/m3           TWA: 1 mg/m3           TWA: 1 mg/m3 ()           STEL: 2 mg/m3 ()           CEIL: 0.29 mg/m3           TWA: 0.1 mg/m3	Skin Absorptio					
	Exposure Parameters: # Chemical Name 3-1 Trizma base -85-7 Zinc chloride	Jurisdiction         ACGIH TLV         France VL         OSHA PELs         Britain EH40         ACGIH TLV         France VL         OSHA PELs         Britain EH40         ACGIH TLV         France VL         OSHA PELs         Britain EH40         ACGIH TLV         Europe	Recommended Exposure Limits           CEIL: 5 mg/m3 (salts)           TWA: 5 mg/m3           TWA: 5 mg/m3           TWA: 5.0 mg/m3           TUX: 1 mg/m3           STEL: 2 mg/m3           TWA: 1 mg/m3           PEL: 1 mg/m3           TWA: 1 mg/m3 ()           STEL: 2 mg/m3 ()           CEIL: 0.29 mg/m3           TWA: 0.1 mg/m3           STEL: 0.3 mg/m3						
<b>CAS</b> : 77-86 7646-	Exposure Parameters: # Chemical Name 3-1 Trizma base -85-7 Zinc chloride	Jurisdiction         ACGIH TLV         France VL         OSHA PELs         Britain EH40         ACGIH TLV         France VL         OSHA PELs         Britain EH40         ACGIH TLV         France VL         OSHA PELs         Britain EH40         ACGIH TLV	Recommended Exposure Limits           CEIL: 5 mg/m3 (salts)           TWA: 5 mg/m3           TWA: 5 mg/m3           TWA: 5.0 mg/m3           TLV: 1 mg/m3           STEL: 2 mg/m3           TWA: 1 mg/m3           PEL: 1 mg/m3           TWA: 2 mg/m3           TWA: 1 mg/m3           PEL: 2 mg/m3           TWA: 1 mg/m3           TWA: 1 mg/m3 ()           STEL: 2 mg/m3 ()           CEIL: 0.29 mg/m3           TWA: 0.1 mg/m3	Skin Absorptio					



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	HEMICAL								
	3-22-8 Sodium azide		Britain EH40	TWA: 0.1 mg/m3 ()	Skin Absorption				
(conti				STEL: 0.3 mg/m3 ()					
8.2	Exposure Controls:								
8.2.1		-		khaust ventilation, or other engineering controls to	control airborne				
	( ,		below recommended expo	osure limits.					
8.2.2	Personal protection equip								
	-		glasses						
	Protective Gloves:	Comp	atible chemical-resistant gl	oves					
	Other Protective Clothing:	Lab co	pat						
	conditions warrant.								
	(Specify Type):								
	Work/Hygienic/Maintenan								
				naterial should be equipped with an eyewash and	a safety shower				
			thoroughly after handling.						
		No da	ta available.						
	Se	ctio	n 9. Physical and	d Chemical Properties					
9.1	Information on Basic Physi	cal ar	d Chemical Properties						
	Physical States:		[]Gas []Liquid	[ X ] Solid					
	Appearance and Odor:		A lyophilized solid						
	pH:		No data.						
	Melting Point:		No data.						
	Boiling Point:		No data.						
	Flash Pt:		No data.						
	Evaporation Rate:		No data.						
	Flammability (solid, gas):		No data available.						
	Explosive Limits:		LEL: No data.	UEL: No data.					
	Vapor Pressure (vs. Air or	mm	No data.						
	Hg):								
	Vapor Density (vs. Air = 1):	:	No data.						
	Specific Gravity (Water = 1	):	No data.						
	Solubility in Water:		No data.						
	Octanol/Water Partition		No data.						
	Coefficient:								
	Autoignition Pt:		No data.						
	Decomposition Temperatu	re:	No data.						
	Viscosity:		No data.						
9.2	Other Information								
	Percent Volatile:		No data.						

Multi-region format



			Section 10. Stability a	nd Reacti	vity					
10.1 R	Reactivity:		No data available.							
10.2 S	Stability:		Unstable [ ] Stable [ X ]							
10.3 S	Stability No	ote(s):	Stable if stored in accordance with info	rmation listed	on the product	insert.				
P	Polymerization:       Will occur []       Will not occur [X]         Conditions To Avoid:       No data available.									
10.4 C	onditions	To Avoid:	No data available.							
10.5 In	ncompatib	ility - Materia	<b>Is</b> acids							
Т	o Avoid:		strong oxidizing agents							
10.6 H	lazardous		No data available.							
D	Decomposi	tion or								
В	Byproducts	s:								
			Section 11. Toxicologic	al Inform	ation					
11.1 In	nformation	on	The toxicological effects of this produc	t have not bee	n thoroughly st	udied.				
Т	oxicologio	al Effects:	Sodium azide - Toxicity Data: Oral LD			. ,	ng/kg;			
			Intraperitoneal LDLO (rat): 30 mg/kg; S							
			Zinc chloride - Toxicity Data: Oral LD5							
			LD50 (mouse): 329 mg/kg; Intraperitoneal LD50 (mouse):24 mg/kg; Subcutaneous LD50 (mouse):							
~	hronic To	vicological	330 mg/kg; Sodium azide - Investigated as an agricultural chemical, drug, mutagen, reproductive effector, and							
	ffects:	xicological	tumorigen. Zinc chloride - Investigated as an agricultural chemical, mutagen, primary irritant, reproductive							
L										
			effector, and tumorigen. Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information. Sodium azide RTECS Number: VY8050000							
			Zinc chloride RTECS Number: ZH1400	0000						
CAS #	Ha	azardous Cor	nponents (Chemical Name)	NTP	IARC	ACGIH	OSHA			
NA	A Es	strone-3-Glucu	uronide-Alkaline Phosphatase Tracer	n.a.	n.a.	n.a.	n.a.			
1185-5	53-1 Tr	is[hydroxymet	hyl]aminomethane hydrochloride	n.a.	n.a.	n.a.	n.a.			
77-86	6-1 Tr	izma base		n.a.	n.a.	n.a.	n.a.			
7647-1	14-5 So	odium chloride	)	n.a.	n.a.	n.a.	n.a.			
7646-8	85-7 Zi	nc chloride		n.a.	n.a.	n.a.	n.a.			
7786-3	30-3 M	agnesium chlo	pride	n.a.	n.a.	n.a.	n.a.			
9048-4	46-8 Bo	ovine Serum A	Ibumin (BSA)	n.a.	n.a.	n.a.	n.a.			
26628-2	-22-8 So	odium azide		n.a.	n.a.	A4	n.a.			
	·		Section 12. Ecologica	I Informat	tion	·				
12.1 T	oxicity:		Avoid release into the environment.							
l			Runoff from fire control or dilution wate	r may cause p	ollution.					
	Persistence		No data available.							
	Degradabili	-								
	Bioaccumu	lative	No data available.							
	Potential:									
12.4 M	lobility in	Soil:	No data available.							
-			B No data available.							
a	ssessmen	t:					Aulti-rogion former			
							Aulti-region form			



12.6 Other a	dverse effects: No	data available.			
		Section 13. Dispos	al Considera	ations	
13.1 Waste D	Disposal Method: Dis	pose in accordance with loca	I, state, and federa	l regulations.	
		Section 14. Trans	sport Informa	ation	
14.1 LAND T	RANSPORT (US DOT	):			
DOT Prope	er Shipping Name:	Toxic solid, organic, n.o.s.			
DOT Hazar	d Class:	6.1 POISON			
UN/NA Nur	nber:	UN2811	Packing Gro	III	
		POISON 6			
14.1 LAND T	RANSPORT (Europea	an ADR/RID):			
ADR/RID S	hipping Name:	Toxic solid, organic, n.o.s.			
UN Numbe	r:	2811	Packing Gro	oup:	III
Hazard Cla	ISS:	6.1 - POISON			
14.3 AIR TR	ANSPORT (ICAO/IAT/	A):			
ICAO/IATA Additional Tra Information:	Shipping Name: nsport Tra	Toxic solid, organic, n.o.s. When sold in quantities of le of E1, E2, E4, or E5, this item Therefore packaging does r ansport in accordance with lo	meets the De Minin not have to be label	nis Quantities exem ed as Dangerous Go	ption, per IATA 2.6.10.
		Section 15. Regul	atory Informa	ation	
EPA SARA (Sı	perfund Amendment	s and Reauthorization Act of	of 1986) Lists		
CAS #	Hazardous Compon	ents (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
NA	Estrone-3-Glucuronic Tracer	e-Alkaline Phosphatase	No	No	No
1185-53-1	Tris[hydroxymethyl]a	minomethane hydrochloride	No	No	No
77-86-1	Trizma base		No	No	Yes-Cat. N106
7647-14-5	Sodium chloride		No	No	No
7646-85-7	Zinc chloride		No	Yes 1000 LB	Yes-Cat. N982
7786-30-3	Magnesium chloride		No	No	No
9048-46-8	Bovine Serum Album	in (BSA)	No	No	No
26628-22-8	Sodium azide		Yes 500 LB	Yes 1000 LB	Yes
CAS #	Hazardous Compon	ents (Chemical Name)	Other US EPA or	r State Lists	·
NA	-	le-Alkaline Phosphatase	CAA HAP,ODC: PROP.65: No	No; CWA NPDES:	No; TSCA: No; CA
1185-53-1	Tris[hydroxymethyl]a	minomethane hydrochloride	CAA HAP,ODC: Inventory; CA PI	No; CWA NPDES: ROP.65: No	No; TSCA: Yes -
77-86-1	Trizma base		CAA HAP,ODC: Inventory; CA PI		PDES: No; TSCA: Yes -
7647-14-5	Sodium chloride		CAA HAP,ODC:	No; CWA NPDES:	No; TSCA: Yes - Multi-region format



		Inventory; CA PROP.65: No				
Zinc chloride		CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No				
Magnesium chlo	ride	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No				
Bovine Serum A	lbumin (BSA)	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No				
Sodium azide		CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No				
ormation	This SDS was prepared in acco No.1272/2008.	ordance with 29 CFR 1910.1200 and Regulation (EC)				
Section 16. Other Information						
	03/26/2018					
ormation About	No data available.					
	express or implied, with respect	to such information, and we assume no liability resulting from its own investigations to determine the suitability of the information for				
	Magnesium chlo Bovine Serum A Sodium azide ormation	Magnesium chloride         Bovine Serum Albumin (BSA)         Sodium azide         ormation       This SDS was prepared in accord No.1272/2008.         Section 16. Other Control of Contr				



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	Section 1	. Identification of the Substance/Mixture an	d of the Company/L	Indertaking
				montaking
.1	Product Code: Product Name:	501293 Estrone-3-Glucuronide ELISA Standard		
•				
.2		s of the substance or mixture and uses advis	-	
	Relevant identified us	,	veterinary use.	
.3		of the Safety Data Sheet:		
	Company Name:	Cayman Chemical Company 1180 E. Ellsworth Rd.		
		Ann Arbor, MI 48108		
	Web site address:	www.caymanchem.com		
	Information:	Cayman Chemical Company	+1 (73	34)971-3335
.4	Emergency telephone r	number:		
	Emergency Contact:	CHEMTREC Within USA and Canada:	+1 (8)	00)424-9300
		CHEMTREC Outside USA and Canada:	+1 (7	03)527-3887
		Section 2. Hazards Ider	ntification	
2.1	Classification of the Su	bstance or Mixture:		
	Flammable Liquids, C	Category 2		
2.2	Label Elements:	0,7		
	GHS Signal Word:	Danger		
	GHS Hazard Phrases			
	GHS Hazard Phrases H225: Highly flammabl	e liquid and vapor.		
	GHS Hazard Phrases H225: Highly flammabl GHS Precaution Phra	e liquid and vapor. ses:	noking	
	GHS Hazard Phrases H225: Highly flammabl GHS Precaution Phra P210: Keep away from	e liquid and vapor. <b>ses:</b> {heat/sparks/open flames/hot surfaces} No sr	-	
	GHS Hazard Phrases H225: Highly flammabl GHS Precaution Phra P210: Keep away from P280: Wear {protective	e liquid and vapor. <b>ses:</b> {heat/sparks/open flames/hot surfaces} No sr gloves/protective clothing/eye protection/face p	-	
	GHS Hazard Phrases H225: Highly flammabl GHS Precaution Phra P210: Keep away from P280: Wear {protective GHS Response Phras	e liquid and vapor. <b>ses:</b> {heat/sparks/open flames/hot surfaces} No sr gloves/protective clothing/eye protection/face p	rotection}.	g. Rinse skin with
	GHS Hazard Phrases H225: Highly flammabl GHS Precaution Phra P210: Keep away from P280: Wear {protective GHS Response Phras	e liquid and vapor. ses: {heat/sparks/open flames/hot surfaces} No sr gloves/protective clothing/eye protection/face p	rotection}.	g. Rinse skin with
	GHS Hazard Phrases H225: Highly flammabl GHS Precaution Phra P210: Keep away from P280: Wear {protective GHS Response Phras P303+361+353: IF ON	e liquid and vapor. <b>ses:</b> {heat/sparks/open flames/hot surfaces} No sr gloves/protective clothing/eye protection/face p <b>ses:</b> SKIN (or hair): Remove/take off immediately all	rotection}.	g. Rinse skin with
	GHS Hazard Phrases H225: Highly flammabl GHS Precaution Phra P210: Keep away from P280: Wear {protective GHS Response Phras P303+361+353: IF ON water/shower. GHS Storage and Dis	e liquid and vapor. <b>ses:</b> {heat/sparks/open flames/hot surfaces} No sr gloves/protective clothing/eye protection/face p <b>ses:</b> SKIN (or hair): Remove/take off immediately all	rotection}.	g. Rinse skin with
2.3	GHS Hazard Phrases H225: Highly flammabl GHS Precaution Phra P210: Keep away from P280: Wear {protective GHS Response Phras P303+361+353: IF ON water/shower. GHS Storage and Dis	e liquid and vapor. ses: {heat/sparks/open flames/hot surfaces} No sr gloves/protective clothing/eye protection/face p ses: SKIN (or hair): Remove/take off immediately all posal Phrases: 7 for Storage and Section 13 for Disposal inform Material may be irritating to the mucous mer	rotection}. contaminated clothin nation. nbranes and upper re	-
2.3	GHS Hazard Phrases H225: Highly flammabl GHS Precaution Phra P210: Keep away from P280: Wear {protective GHS Response Phras P303+361+353: IF ON water/shower. GHS Storage and Dis Please refer to Section	e liquid and vapor. ses: {heat/sparks/open flames/hot surfaces} No sr gloves/protective clothing/eye protection/face p ses: SKIN (or hair): Remove/take off immediately all posal Phrases: 7 for Storage and Section 13 for Disposal inform Material may be irritating to the mucous mer : May be harmful by inhalation, ingestion, or s	rotection}. contaminated clothin nation. nbranes and upper re- kin absorption.	-
2.3	GHS Hazard Phrases H225: Highly flammabl GHS Precaution Phra P210: Keep away from P280: Wear {protective GHS Response Phras P303+361+353: IF ON water/shower. GHS Storage and Dis Please refer to Section Adverse Human Health	e liquid and vapor. ses: {heat/sparks/open flames/hot surfaces} No sr gloves/protective clothing/eye protection/face p ses: SKIN (or hair): Remove/take off immediately all posal Phrases: 7 for Storage and Section 13 for Disposal inforr Material may be irritating to the mucous mer : May be harmful by inhalation, ingestion, or s May cause eye, skin, or respiratory system i	rotection}. contaminated clothin nation. nbranes and upper re- kin absorption. rritation.	spiratory tract.
2.3	GHS Hazard Phrases H225: Highly flammabl GHS Precaution Phra P210: Keep away from P280: Wear {protective GHS Response Phras P303+361+353: IF ON water/shower. GHS Storage and Dis Please refer to Section Adverse Human Health	e liquid and vapor. ses: {heat/sparks/open flames/hot surfaces} No sr gloves/protective clothing/eye protection/face p ses: SKIN (or hair): Remove/take off immediately all posal Phrases: 7 for Storage and Section 13 for Disposal inform Material may be irritating to the mucous mer : May be harmful by inhalation, ingestion, or s	rotection}. contaminated clothin nation. nbranes and upper re- kin absorption. rritation.	spiratory tract.
2.3	GHS Hazard Phrases H225: Highly flammabl GHS Precaution Phra P210: Keep away from P280: Wear {protective GHS Response Phras P303+361+353: IF ON water/shower. GHS Storage and Dis Please refer to Section Adverse Human Health Effects and Symptoms	e liquid and vapor. ses: {heat/sparks/open flames/hot surfaces} No sr gloves/protective clothing/eye protection/face p ses: SKIN (or hair): Remove/take off immediately all posal Phrases: 7 for Storage and Section 13 for Disposal inforr Material may be irritating to the mucous mer : May be harmful by inhalation, ingestion, or s May cause eye, skin, or respiratory system i	rotection}. contaminated clothin nation. nbranes and upper re- kin absorption. rritation. cal properties have no	spiratory tract. ot been thoroughly investigated
CAS	GHS Hazard Phrases H225: Highly flammabl GHS Precaution Phra P210: Keep away from P280: Wear {protective GHS Response Phras P303+361+353: IF ON water/shower. GHS Storage and Dis Please refer to Section Adverse Human Health Effects and Symptoms	e liquid and vapor. ses: {heat/sparks/open flames/hot surfaces} No sr gloves/protective clothing/eye protection/face p ses: SKIN (or hair): Remove/take off immediately all posal Phrases: 7 for Storage and Section 13 for Disposal inforr Material may be irritating to the mucous mer : May be harmful by inhalation, ingestion, or s May cause eye, skin, or respiratory system i To the best of our knowledge, the toxicologie ction 3. Composition/Information mponents (Chemical Name)/	rotection}. contaminated clothin nation. nbranes and upper re- skin absorption. rritation. cal properties have no on on Ingredie	spiratory tract. ot been thoroughly investigated
	GHS Hazard Phrases H225: Highly flammabl GHS Precaution Phra P210: Keep away from P280: Wear {protective GHS Response Phras P303+361+353: IF ON water/shower. GHS Storage and Dis Please refer to Section Adverse Human Health Effects and Symptoms Se	e liquid and vapor. ses: {heat/sparks/open flames/hot surfaces} No sr gloves/protective clothing/eye protection/face p ses: SKIN (or hair): Remove/take off immediately all posal Phrases: 7 for Storage and Section 13 for Disposal inforr Material may be irritating to the mucous mer : May be harmful by inhalation, ingestion, or s May cause eye, skin, or respiratory system i To the best of our knowledge, the toxicologie ction 3. Composition/Information mponents (Chemical Name)/ ration No.	rotection}. contaminated clothin nation. nbranes and upper re- kin absorption. rritation. cal properties have no On On Ingredie n EC No./	espiratory tract. ot been thoroughly investigated ents

Multi-region format



	HEMICAL							Toxic Repro. 1B: H360
64-1		Ethyl alcohol			99.939 %		200-578-6	Flam. Liq. 2: H225
KQ630	0000						603-002-00-5	
			Sect	ion 4. Fi	rst Aid N	/leasu	res	
4.1	Descrip	tion of First Aid						
	Measur	es:						
	In Case	of Inhalation:	Remove to fres Get immediate			artificial	respiration or giv	e oxygen by trained personnel
	In Case	of Skin Contact:	-			-	ter for at least 15 Wash clothing b	i minutes. Remove contaminate efore reuse.
	In Case	of Eye Contact:	Hold eyelids ap and tested by n			enty of wa	ater for at least 1	5 minutes. Have eyes examined
	In Case	of Ingestion:	Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.					
4.2	Importa	int Symptoms and	May cause ane	mia, cough, C	NS depress	ion, drow	siness, headach	e, heart damage, lassitude
	Effects,	Both Acute and	(weakness, exh	austion), live	r damage, na	arcosis, re	eproductive effect	ts, teratogenic effects.
	Delayed	d:						
			Sectio	n 5. Fire	Fighting	g Mea	sures	
5.1	Suitable	e Extinguishing	Use alcohol-res	sistant foam, o	carbon dioxid	de, water	, or dry chemical	spray.
	Media:       Use water spray to cool fire-exposed containers.							
	Unsuitable Extinguishing A solid water stream may be inefficient.							
	Media:							
5.2	Flamma	able Properties an		-	-		-	at or above the flashpoint.
	Hazard	s:	Container explo			e conditio	ns.	
			Emits toxic fumes under fire conditions.					
			Sensitive to static discharge.					
			Vapors can travel to a source of ignition and flash back. No data available.					
	Flash P	4.						
			14.00 C Meth		•	19.0%	at 25.0 C	
	-	ve Limits: hition Pt:	LEL: 3.3% 363.00 C	at 25.0 C	UEL.	19.0%	at 25.0 C	
5.3	-			waar solf cont	ainad braath	ing anna	ratus prossuro d	emand (NIOSH approved or
5.5	The Fig		-	d full protectiv	ve gear to pre	• • • •	itact with skin an	
			Section 6.	Accider	ntal Rele	ase N	leasures	
6.1		ive Precautions,	Avoid breathin	-	-	-		
	Protect	ive Equipment an	d As conditions	warrant, wear	a NIOSH ap	proved s	elf-contained bre	eathing apparatus, or respirator
	Emerge	ency Procedures:	and appropriat	e personal pr	otection (rub	ber boots	s, safety goggles	, and heavy rubber gloves).
6.2	Enviror Precaut		Take steps to	avoid release	into the envi	ronment,	if safe to do so.	
6.3		s and Material Fo	-					
	Contair Up:	ment and Cleanir	ngTransfer to a c	hemical wast	e container f	or dispos	al in accordance	with local regulations.
								Multi-region form



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# Section 7. Handling and Storage

7.1	Precautions To Be Taken	Avoid breathing dust/fume/gas/mist/vapours/spray.		
	in Handling:	Avoid prolonged or repeated exposure.		
		Keep away from sources of ignition.		
		Take precautionary measures against static discharge.		
7.2	Precautions To Be Taken	Keep away from heat, sparks, and flame.		
	in Storing:	Keep container tightly closed.		
		Store in accordance with information listed on the product insert.		
	Other Precautions:	Hygroscopic		

# Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:						
CAS #	Chemical Name	Jurisdiction	Recommended Exposure Limits	Notations		
68-12-2	N,N-Dimethylformamide	ACGIH TLV	TLV: 10 ppm			
		France VL	TWA: 30 mg/m3 (10 ppm)			
		OSHA PELs	PEL: 10 ppm			
		Britain EH40	TWA: 30 mg/m3 (10 ppm) STEL: 61 mg/m3 (20 ppm)	Skin Absorption		
64-17-5	Ethyl alcohol	ACGIH TLV	TLV: 1000 ppm STEL: 1000 ppm			
		France VL	TWA: 1900 mg/m3 (1000 ppm) STEL: 9500 mg/m3 (5000 ppm)			
		OSHA PELs	PEL: 1000 ppm			
		Britain EH40	TWA: 1920 mg/m3 (1000 ppm) STEL: ()			

8.2 Exposure Controls:

\_

 8.2.1 Engineering Controls
 Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne

 (Ventilation etc.):
 levels below recommended exposure limits.

#### 8.2.2 Personal protection equipment:

Eye Protection:	Safety glasses
Protective Gloves:	Compatible chemical-resistant gloves
Other Protective Clothing	g:Lab coat
Respiratory Equipment	NIOSH approved respirator, as conditions warrant.
(Specify Type):	
Work/Hygienic/Maintena	<b>n</b> Do not take internally.
ce Practices:	Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.
	Wash thoroughly after handling.
	No data available.



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		ction 9. Physical and Chemical Properties		
9.1	Information on Basic Physic	cal and Chemical Properties		
	Physical States:	[]Gas [X]Liquid []Solid		
	Appearance and Odor:	A solution in ethanol		
	pH:	No data.		
	Melting Point:	No data.		
	Boiling Point:	No data.		
	Flash Pt:	14.00 C Method Used: Closed Cup		
	Evaporation Rate:	No data.		
	Flammability (solid, gas):	No data available.		
	Explosive Limits:	LEL: 3.3% at 25.0 C UEL: 19.0% at 25.0 C		
	Vapor Pressure (vs. Air or r	mm 43 MM_HG at 20.0 C		
	Hg):			
	Vapor Density (vs. Air = 1):			
	Specific Gravity (Water = 1)	-		
	Solubility in Water:	No data.		
	Octanol/Water Partition Coefficient:	No data.		
	Autoignition Pt:	363.00 C		
	Decomposition Temperatur			
	Viscosity:	No data.		
9.2	Other Information			
	Percent Volatile:	No data.		
		Section 10. Stability and Reactivity		
10.1	Reactivity:	No data available.		
10.2	Stability:	Unstable [ ] Stable [ X ]		
10.3	Stability Note(s):	Stable if stored in accordance with information listed on the product insert.		
	Polymerization:	Will occur [ ] Will not occur [ X ]		
10.4	Conditions To Avoid: h	heat, flames and sparks		
10.5	Incompatibility - Materials a	alkali metals		
	To Avoid:	ammonia		
		peroxides		
		strong oxidizing agents		
10.6	S	strong oxidizing agents carbon dioxide		
10.6	s Hazardous c			

Multi-region format



## SAFETY DATA SHEET Estrone-3-Glucuronide ELISA Standard

			Section	11. Toxicologic	al Informa	ation			
11.1 Information on			The toxicological effects of this product have not been thoroughly studied.						
Toxicological Effects:		Ethanol - Toxi	city Data: Oral TDLO (ma	an): 1.14 ml/kg	; Oral TDLO (r	nan): 650 mg/ł	kg; Oral LD50		
		(rat): 7,060 mg/kg; Oral LD50 (mouse): 3,450 mg/kg; Oral LD50 (mouse): 10.5 ml/kg; Oral LD50							
			(rabbit): 6,300 mg/kg; Inhalation LC50 (rat): 20,000 ppm (10h); Inhalation TCLO (human): 1,800						
			ppm (30m); In	halation TCLO (human):	2,500 mg/m3	(20m); Inhalati	on LC50 (rat):	5,900 mg/m3	
			(6h); Inhalatio	n LCLO (mouse): 29,300	ppm (7h);				
			<ul> <li>Ethanol - Irritation Data: Eyes (rabbit): 500 mg (24h) mild; Skin (rabbit): 20 mg (24h) moderate;</li> <li>Ethanol - Investigated as a mutagen, reproductive effector, and tumorigen.</li> <li>Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here.</li> <li>See actual entry in RTECS for complete information.</li> <li>Ethanol RTECS Number: KQ6300000</li> </ul>						
	Chronic	Toxicological							
	Effects:								
Carci	nogenicity	/: 	NTP? No	IARC Monographs? No	OSHA R	OSHA Regulated? No			
CAS		Hazardous Com		nical Name)	NTP	IARC	ACGIH	OSHA	
	NA	Estrone-3-Glucur			n.a.	n.a.	n.a.	n.a.	
	3-12-2	N,N-Dimethylforn	namide		n.a.	3	A4	n.a.	
64	4-17-5	Ethyl alcohol			n.a.	1	A4	n.a.	
			Sectio	n 12. Ecologica	I Informat	ion			
12.1	Toxicity:			into the environment.					
	-		Runoff from fire control or dilution water may cause pollution.						
12.2	Persiste	nce and	No data available.						
	Degrada	bility:							
12.3	Bioaccu	-	No data available.						
	Potentia								
12.4	Mobility		No data availa	ble					
12.5	-	of PBT and vPvB							
12.0	assessm								
12.6	Other ad	verse effects:	No data availa	able.					
			Sectior	13. Disposal C	onsiderat	ions			
13.1	Waste Di	isposal Method:	Dispose in ac	cordance with local, state	e, and federal r	egulations.			
			Secti	on 14. Transpor	t Informat	ion			
14.1	LAND T	RANSPORT (US I	DOT):						
	OT Prope	r Shipping Name:	Ethyl Alco	hol Solution					
	OT Hazaro	d Class:	3	FLAMMABLE LIQ	UID				
U	JN/NA Num	nber:	1170		Packing Grou	ıp:	II		
			FLMMMUBLE LIQU						
14.1		RANSPORT (Euro	opean ADR/RII	D):					
A	DR/RID Sł	nipping Name:	Ethyl Alco	hol Solution					
u	JN Number	:	1170		Packing Grou	ıp:	П		
н	lazard Clas	ss:	3 - FLAM	MABLE LIQUID					
							Ν	Iulti-region format	



14.3 AIR TRANSPORT (ICAO/	IATA):				
ICAO/IATA Shipping Name:	Ethyl Alcohol Solution				
UN Number:	1170	Packing Group:	II		
Hazard Class:	3 - FLAMMABLE LIQUID	IATA Classification:	3		
Additional Transport	Transport in accordance with local, state, and federal regulations.				
Information:	When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of				
	E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10.				
Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.					

## Section 15. Regulatory Information

CAS #	Hazardous Com	ponents (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)	
NA	Estrone-3-Glucur	onide	No	No	No	
68-12-2	N,N-Dimethylforn	namide	No	Yes 100 LB	Yes	
64-17-5	Ethyl alcohol		No	No	No	
CAS # Hazardous Com		ponents (Chemical Name)	Other US EPA or	Other US EPA or State Lists		
NA	Estrone-3-Glucur	onide	CAA HAP,ODC: I PROP.65: No	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No		
68-12-2	N,N-Dimethylforn	namide	CAA HAP,ODC: HAP; CWA NPDES: No; TSCA: Yes - Inventory, 8D TERM; CA PROP.65: No			
64-17-5	Ethyl alcohol		CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No			
Regulatory In Statement:	formation	This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.				
		Section 16. Ot	her Informatio	n		
Revision Date:		03/26/2018				
Additional Information About This Product:		No data available.				
Company Policy or Disclaimer:		DISCLAIMER: This information currently available to us. Howe express or implied, with respec- use. Users should make their of their particular purposes.	ver, we make no war t to such information	ranty of merchantal , and we assume no	bility or any other warranty b liability resulting from its	