

	ассо	ording to Regulation (EC) No. 190	07/2006 as amended by	/ (EC) No. 1272/200	08		
	Section 1. Id	dentification of the Substar	nce/Mixture and of	the Company/U	ndertaking		
.1	Product Code:	23218					
	Product Name:	Diphtheria Toxin CRM19	97 mutant from Coryn	ebacterium dipht	heriae		
.2	Relevant identified uses of the substance or mixture and uses advised against:						
	Relevant identified uses:	For research use only, n	ot for human or veter	rinary use.			
1.3	Details of the Supplier of the Safety Data Sheet:						
	Company Name:	Cayman Chemical Comp 1180 E. Ellsworth Rd. Ann Arbor, MI 48108	bany				
	Web site address:	www.caymanchem.com					
	Information:	Cayman Chemical Comp	bany	+1 (73	4)971-3335		
1.4	Emergency telephone num	ber:					
	Emergency Contact:	CHEMTREC Within USA		•	0)424-9300		
		CHEMTREC Outside US	SA and Canada:	+1 (70	3)527-3887		
		Section 2. Ha	zards Identific	cation			
2.1	Classification of the Substa	ance or Mixture:					
	Acute Toxicity: Oral, Cate	egory 1					
2.2	Label Elements:						
	GHS Signal Word: GHS Hazard Phrases:	Danger					
	GHS Hazard Phrases: H300: Fatal if swallowed.	-					
	GHS Hazard Phrases: H300: Fatal if swallowed. GHS Precaution Phrases	:					
	GHS Hazard Phrases: H300: Fatal if swallowed. GHS Precaution Phrases P264: Wash {hands} thoro	: ughly after handling.					
	GHS Hazard Phrases: H300: Fatal if swallowed. GHS Precaution Phrases P264: Wash {hands} thoro GHS Response Phrases:	: ughly after handling.	ON CENTER or docto	pr/physician.			
	GHS Hazard Phrases: H300: Fatal if swallowed. GHS Precaution Phrases P264: Wash {hands} thoro GHS Response Phrases: P301+310: IF SWALLOWE	: ughly after handling. ED: Immediately call a POISC	ON CENTER or docto	pr/physician.			
	GHS Hazard Phrases: H300: Fatal if swallowed. GHS Precaution Phrases P264: Wash {hands} thoro GHS Response Phrases: P301+310: IF SWALLOWE P330: Rinse mouth. GHS Storage and Dispos	: ughly after handling. ED: Immediately call a POISC					
2.3	 GHS Hazard Phrases: H300: Fatal if swallowed. GHS Precaution Phrases P264: Wash {hands} thoro GHS Response Phrases: P301+310: IF SWALLOWE P330: Rinse mouth. GHS Storage and Dispos Please refer to Section 7 for 	: ughly after handling. ED: Immediately call a POISC					
2.3	GHS Hazard Phrases: H300: Fatal if swallowed. GHS Precaution Phrases P264: Wash {hands} thoro GHS Response Phrases: P301+310: IF SWALLOWE P330: Rinse mouth. GHS Storage and Dispos Please refer to Section 7 for Adverse Human Health Effects and Symptoms:	: ughly after handling. ED: Immediately call a POISC a l Phrases: or Storage and Section 13 for Fatal if swallowed. Material may be irritating to t	r Disposal information the mucous membrar	n.	spiratory tract.		
2.3	 GHS Hazard Phrases: H300: Fatal if swallowed. GHS Precaution Phrases P264: Wash {hands} thoro GHS Response Phrases: P301+310: IF SWALLOWE P330: Rinse mouth. GHS Storage and Dispose Please refer to Section 7 for Adverse Human Health Effects and Symptoms: 	: ughly after handling. ED: Immediately call a POISC al Phrases: or Storage and Section 13 for Fatal if swallowed. Material may be irritating to t May be harmful by inhalation	r Disposal information the mucous membrar n or skin absorption.	n. nes and upper res	spiratory tract.		
2.3	GHS Hazard Phrases: H300: Fatal if swallowed. GHS Precaution Phrases P264: Wash {hands} thoro GHS Response Phrases: P301+310: IF SWALLOWE P330: Rinse mouth. GHS Storage and Dispos Please refer to Section 7 fo Adverse Human Health Effects and Symptoms:	: ughly after handling. ED: Immediately call a POISC cal Phrases: or Storage and Section 13 for Fatal if swallowed. Material may be irritating to t May be harmful by inhalatior May cause eye, skin, or resp	r Disposal information the mucous membrar n or skin absorption. biratory system irritati	n. nes and upper res on.			
2.3	GHS Hazard Phrases: H300: Fatal if swallowed. GHS Precaution Phrases P264: Wash {hands} thoro GHS Response Phrases: P301+310: IF SWALLOWE P330: Rinse mouth. GHS Storage and Dispos Please refer to Section 7 fo Adverse Human Health Effects and Symptoms:	: ughly after handling. ED: Immediately call a POISC cal Phrases: or Storage and Section 13 for Fatal if swallowed. Material may be irritating to t May be harmful by inhalatior May be harmful by inhalatior May cause eye, skin, or resp To the best of our knowledge	r Disposal information the mucous membrar n or skin absorption. piratory system irritati e, the toxicological pr	n. nes and upper res on. roperties have not	been thoroughly investigated		
2.3	GHS Hazard Phrases: H300: Fatal if swallowed. GHS Precaution Phrases P264: Wash {hands} thoro GHS Response Phrases: P301+310: IF SWALLOWE P330: Rinse mouth. GHS Storage and Dispos Please refer to Section 7 fo Adverse Human Health Effects and Symptoms:	: ughly after handling. ED: Immediately call a POISC cal Phrases: or Storage and Section 13 for Fatal if swallowed. Material may be irritating to t May be harmful by inhalatior May cause eye, skin, or resp	r Disposal information the mucous membrar n or skin absorption. piratory system irritati e, the toxicological pr	n. nes and upper res on. roperties have not	been thoroughly investigated		
CAS	GHS Hazard Phrases: H300: Fatal if swallowed. GHS Precaution Phrases P264: Wash {hands} thoro GHS Response Phrases: P301+310: IF SWALLOWE P330: Rinse mouth. GHS Storage and Dispos Please refer to Section 7 for Adverse Human Health Effects and Symptoms: Secti	:: ughly after handling. ED: Immediately call a POISC al Phrases: or Storage and Section 13 for Fatal if swallowed. Material may be irritating to t May be harmful by inhalation May cause eye, skin, or resp To the best of our knowledge on 3. Composition onents (Chemical Name)/	r Disposal information the mucous membrar n or skin absorption. piratory system irritati e, the toxicological pr	n. nes and upper res on. roperties have not	been thoroughly investigated		

Multi-region format



Revision: 12/16/2017

		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 Hazards:	d 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	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, Protective Equipment an Emergency Procedures:	Avoid raising and breathing dust, and provide adequate ventilation. d 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	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.				
	in Storing:	Store in accordance with information listed on the product insert.				
	Sec	tion 8. Exposure Controls/Personal Protection				
8.1	Exposure Parameters:					

Multi-region format



8.2	Exposure Controls:					
8.2.1		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:	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		cal and Chemical Properties				
	Physical States:	[]Gas []Liquid [X]Solid				
	Appearance and Odor:	A crystalline solid				
		Each vial, when reconstituted to 0.25 ml with water, contains 500 μg of diphtheria toxin				
		CRM197 mutant in 0.01 M sodium phosphate with 5% lactose at pH 7.4				
	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					
	Viscosity:	No data.				
9.2	Other Information					
0.2	Percent Volatile:	No data.				
	reform volatile.					



Revision: 12/16/2017

Page: 4 of 5

			Section 1	0. Stability an	nd Reacti	vity			
10.1	Reactivi	ty:	No data available.						
10.2	-		Unstable [] Stable [X]						
10.3	Stability	Note(s):	Stable if stored in a	accordance with infor	mation listed	on the product	insert.		
	Polymerization:		Will occur [] Will not occur [X]						
10.4	Conditio	ons To Avoid:	Handle gently.						
			Do not vortex.						
10.5	Incompa	atibility - Materials	strong acids						
	To Avoid	d:	strong bases						
			strong oxidizing ag	jents					
10.6	Hazardo		No data available.						
	-	osition or							
Byproducts:									
			Section 11	. Toxicologica	al Informa	ation			
11.1	Informat		The toxicological e	ffects of this product	have not beer	n thoroughly st	udied.		
	Toxicolo	ogical Effects:							
CAS	#	Hazardous Com	ponents (Chemica	l Name)	NTP	IARC	ACGIH	OSHA	
	NA	Diphtheria Toxin diphtheriae	CRM197 mutant fro	m Corynebacterium	n.a.	n.a.	n.a.	n.a.	
		·	Section 1	2. Ecological	Informat	ion			
12.1	Toxicity	:	Avoid release 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 Potentia		No data available.						
12.4	Mobility		No data available.						
12.5	-		No data available.						
12.5	assessm		INU UALA AVAIIADIE.						
12.6		lverse effects:	No data available.						
12.0									
				3. Disposal Co					
13.1	13.1 Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.								
			Section	14. Transport	Informat	ion			
14.1	14.1 LAND TRANSPORT (US DOT):								
D	DOT Proper Shipping Name: Toxins, extracted from living sources, solid, n.o.s. (Diphtheria Toxin from Corynebacterium diphtheriae)								
D	DOT Hazard Class:		6.1	POISON					
U	N/NA Nun	nber:	UN3462	F	Packing Grou	ıp:	I		
			POISON 6						



Revision: 12/16/2017

CHEMICAL		Corynebact	erium diphthe	riae			
14.1 LAND	TRANSPORT (Eur	opean ADR/RID):					
ADR/RID \$	Shipping Name:	Toxins, extracted from livin diphtheriae)	Toxins, extracted from living sources, solid, n.o.s. (Diphtheria Toxin from Corynebacterium				
UN Numbe	er:	3462	Packing Gro	up:	I		
Hazard Class:		6.1 - POISON	-				
14.3 AIR TR	ANSPORT (ICAO/	IATA):					
ICAO/IAT	A Shipping Name:	Toxins, extracted from livin diphtheriae)	oxins, extracted from living sources, solid, n.o.s. (Diphtheria Toxin from Corynebacterium phtheriae)				
UN Numbe	er:	3462	Packing Gro	I			
Hazard Cla	ass:	6.1 - POISON	IATA Classif	6.1			
Additional Tra	insport	Transport in accordance with lo	ocal, state, and federa	al 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 Section 15. Regu		-	ds/Excepted Quantity.		
EPA SARA (S	uperfund Amendn	nents and Reauthorization Act	-				
CAS #	-	ponents (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)		
NA	Diphtheria Toxin Corynebacterium	CRM197 mutant from diphtheriae	No	No	No		
CAS #	Hazardous Com	ponents (Chemical Name)	Other US EPA or State Lists				
NA Diphtheria Toxin CRM197 mutant from Corynebacterium diphtheriae			CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No				
Regulatory Inf Statement:	ormation	This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.					
		Section 16. Ot	ner Informatio	n			
Revision Date	:	12/16/2017					
Additional Info This Product:	ormation About	No data available.					
Company Policy or Disclaimer:		DISCLAIMER: This information currently available to us. However express or implied, with respect use. Users should make their of their particular purposes.	ver, we make no warr t to such information,	anty of merchant and we assume	ability or any other warranty no liability resulting from its		