Product Information



A Safety Data Sheet (SDS) on this material is not required as it is non-hazardous. However, we do recommend the following minimum precautions when using this item:

- Store at correct temperature.
- Dispose of by in accordance with federal, state, and local regulations.
- Wash thoroughly after handling.

WARNING:

This product is not intended or approved for human or veterinary use.

The above information is believed to be correct but should only be used as a guide. Cayman Chemical disclaims any express or implied warranty as to the accuracy of the above information and shall not be held liable for any direct, incidental, or consequential damages resulting from reliance on the above information.

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Cayman Chemical

Mailing address 1180 E. Ellsworth Road Ann Arbor, MI 48108 USA

Phone (800) 364-9897 (734) 971-3335

Fax (734) 971-3640

E-Mail custserv@caymanchem.com

Web www.caymanchem.com

Product Information



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Revision: 03/26/2015

ay					\$	Supersedes Revision: 03/15/2010
		accord	ing to Regulation (EC) No. 190	07/2006 as amended b	y (EC) No. 1272/200	
		Section 1. Ide	entification of the Substar	nce/Mixture and of	the Company/U	ndertaking
1.1	Product Product		10012540 SIRT3 Direct Assay Buff	er (10X)		
1.2	Relevar	nt identified uses of t	ne substance or mixture a	and uses advised a	igainst:	
	Releva	ant identified uses:	For research use only, n	ot for human or vete	erinary use.	
1.3	Details	of the Supplier of the	Safety Data Sheet:			
	Comp	any Name:	Cayman Chemical Comp 1180 E. Ellsworth Rd. Ann Arbor, MI 48108	bany		
	Web s	ite address:	www.caymanchem.com			
	Inform	nation:	Cayman Chemical Comp	bany	+1 (73-	4)971-3335
1.4	Emerge	ncy telephone numb	er:			
	Emerg	gency Contact:	CHEMTREC Within USA CHEMTREC Outside US			0)424-9300 3)527-3887
			Section 2. Ha	zards Identifi	cation	
2.1	Classifi	cation of the Substar	ice or Mixture:			
2.2 2.2.1	Labelin		lation (EC) No 1272/2008	[CLP]:		
	GHS I H316: GHS I No ph GHS I	Signal Word: Hazard Phrases: Causes mild skin irrita Precaution Phrases: rases apply. Response Phrases:				
			ccurs, get medical advice/a	ttention.		
		Storage and Disposal				
2.3	Advers	e Human Health C and Symptoms: M M	Storage and Section 13 for auses mild skin irritation. laterial may be irritating to t lay be harmful by inhalation lay cause eye or respiratory o the best of our knowledge	he mucous membra n, ingestion, or skin a / system irritation.	nes and upper res absorption.	spiratory tract. been thoroughly investigated
		Sectio	n 3. Composition	/Information	on Ingredie	nts
CAS # RTEC	-	Hazardous Compon REACH Registration	ents (Chemical Name)/ n No.	Concentration	EC No./ EC Index No.	GHS Classification
77-8 TY290	86-1 0000	Trizma base		6.05 %	201-064-4 NA	Skin Corr. 2: H315 Eye Damage 2: H319 STOT (SE) 3: H335 H336
7647 VZ472	7-14-5 5000	Sodium chloride		8.0 %	231-598-3 NA	No data available.
7447	7-40-7	Potassium chloride		0.2 %	231-211-8	Acute Tox.(O) 5: H303



Revision: 03/26/2015

cay	man					Supersedes Revision: 03/15/2010
TS80	50000	1			NA	Aquatic (A) 3: H402
-	1-18-6 975000	Magnesium chloride	, hexahydrate	0.2 %	NA NA	No data available.
-	2-18-5 10000	Water		85.55 %	231-791-2 NA	No data available.
		•				-
			Section 4	. First Aid Me	asures	
4.1	Descrip	otion of First Aid	No data available.			
4.1	Measu		No data avaliable.			
		e of Inhalation:	Remove to fresh air. If	not breathing, give art	ificial respiration or	give oxygen by trained personnel.
	in ouse	of initial action.	Get immediate medical			
	In Case	e of Skin Contact:	Immediately wash skin clothing. Get medical a			15 minutes. Remove contaminated before reuse.
	In Case	of Eye Contact:	-		-	15 minutes. Have eyes examined
			and tested by medical	personnel.		
	In Case	e of Ingestion:	Wash out mouth with w	vater provided person	is conscious. Never	give anything by mouth to an
			-	Set medical attention.	Do NOT induce vom	iting unless directed to do so by
			medical personnel.			
			Section 5.	Fire Fighting N	Measures	
5.1	Suitabl	e Extinguishing	Use alcohol-resistant f	oam, carbon dioxide,	water, or dry chemic	cal spray.
	Media:		Use water spray to coo	ol fire-exposed contair	ners.	
	Unsuita	able Extinguishing	g A solid water stream m	nay be inefficient.		
	Media:					
5.2		-	dNo data available.			
	Hazard	-				
	Flash F		No data.			
	-	ive Limits:	LEL: No data.	UEL: N	No data.	
	-	nition Pt:	No data.			
5.3	Fire Fig	ghting Instructions	s: As in any fire, wear sel equivalent), and full pro	-		-demand (NIOSH approved or and eyes.
			Section 6. Acc	idental Releas	se Measures	
6.1	Protect	tive Precautions,	Avoid breathing vapor	s and provide adequa	te ventilation.	
	Protect	tive Equipment an	d As conditions warrant	, wear a NIOSH appro	ved self-contained b	preathing apparatus, or respirator,
	Emerge	ency Procedures:	and appropriate perso	onal protection (rubber	boots, safety goggl	es, and heavy rubber gloves).
6.2	Enviro	nmental	Take steps to avoid re	elease into the environ	ment, if safe to do s	0.
	Precau	tions:				
6.3			r Contain spill and colle			
		nment and Cleanir	ngTransfer to a chemica	I waste container for d	lisposal in accordan	ce with local regulations.
	Up:					
			Section 7.	Handling and	Storage	
7.1	Precau	tions To Be Taker	Avoid breathing dust/fu	ume/gas/mist/vapours/	/spray.	
	in Hand	dling:	Avoid prolonged or rep	peated exposure.		
7.2	Precau	tions To Be Taker	Keep container tightly	closed.		
	in Stori	ing:	Store in accordance w	ith information listed o	n the product insert.	



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		s. Exposi		ersonal Protection	
	ire Parameters:				
CAS #	Partial Chemical Name		Britain EH40	France VL	Europe
77-86-1	Trizma base		No data.	No data.	No data.
7647-14-5	Sodium chloride		No data.	No data.	No data.
7447-40-7	Potassium chloride		No data.	No data.	No data.
7791-18-6	Magnesium chloride, he	kahydrate	No data.	No data.	No data.
7732-18-5	Water		No data.	No data.	No data.
CAS #	Partial Chemical Name		OSHA TWA	ACGIH TWA	Other Limits
77-86-1	Trizma base		No data.	No data.	No data.
7647-14-5	Sodium chloride		No data.	No data.	No data.
7447-40-7	Potassium chloride		No data.	No data.	No data.
7791-18-6	Magnesium chloride, hex	kahydrate	No data.	No data.	No data.
7732-18-5	Water		No data.	No data.	No data.
Eye Pr Protec Other Respir (Speci	tive Gloves: Comp Protective Clothing:Lab c atory Equipment NIOS fy Type): Hygienic/Maintenan Do no ctices: Faciliti show Wash No da	y glasses patible chemica oat H approved res ot take internally ties storing or u er. thoroughly aft ata available.	utilizing this material sh er handling.	warrant. hould be equipped with an eye	wash facility and a safe
.1 Informa	ation on Basic Physical a				
Physic Appea pH: Melting Flash I Evapo Explos Vapor Hg):	al States: rance and Odor: g Point: g Point:		X]Liquid []Soli	d UEL: No data.	



9.2

SAFETY DATA SHEET SIRT3 Direct Assay Buffer (10X)

Cav	man		r c	SIKIS DIRECT A	Assay Dullel			ion: 03/26/2015
	HEMICAL		<u> </u>			S	upersedes Revis	ion: 03/15/2010
	=	Gravity (Water =	-					
	-	in Water:		data.				
	Autoignit	ion Pt:	No d	data.				
9.2	Other Info	ormation						
	Percent \	/olatile:	No d	data.				
			Secti	ion 10. Stabilit	y and React	ivity		
10.1	Reactivit	y:	No data ava	ailable.				
10.2	Stability:		Unstable [] Stable [X]				
10.3	Stability	Note(s):	Stable if sto	ored in accordance wit	h information listed	on the product	insert.	
	Polymeri	zation:	Will occur [] Will not occur [[X]			
10.4	Conditio	ns To Avoid:	No data ava	ailable.				
10.5	Incompation	tibility - Materials	aluminum					
	To Avoid	:	brass					
			copper					
			metals					
			oxidizing ma	aterials				
			strong acids	3				
10.6	Hazardou	IS	carbon dioxi	ide				
	Decompo	osition Or	carbon mon	noxide				
	Byprodu	cts:	hydrogen ch	-				
			nitrogen oxi					
			sodium oxid	les				
			Sectio	on 11. Toxicolo	ogical Inform	ation		
11.1	Informati	on on	The toxicolo	ogical effects of this pr	oduct have not bee	en thoroughly st	udied.	
	Toxicolo	gical Effects:						
Carci	nogenicity	:	NTP? No	IARC Monographs	? No OSHA F	Regulated? No		
CAS	#	Hazardous Com	ponents (Ch	nemical Name)	NTP	IARC	ACGIH	OSHA
77	-86-1	Trizma base			n.a.	n.a.	n.a.	n.a.
764	7-14-5	Sodium chloride			n.a.	n.a.	n.a.	n.a.
		Potassium chlorid	le		n.a.	n.a.	n.a.	n.a.
		Magnesium chlori		Irate	n.a.	n.a.	n.a.	n.a.
		•						
113	2-10-0	Water			n.a.	n.a.	n.a.	n.a.
				tion 12. Ecolog	•	tion		
12.1	Toxicity:			se into the environmer				
			Runoff from	n fire control or dilution	water may cause	pollution.		
12.2	Persister	ice and	No data ava	ailable.				
	Degradal	pility:						
12.3	Bioaccur	nulative	No data ava	ailable.				
	Potential	:						
12.4	Mobility i	n Soil:	No data ava	ailable.				
12.5	Results o	of PBT and vPvB	No data ava	ailable.				
	assessm	ent:						
12.6	Other adv	verse effects:	No data ava	ailable.				
							Ν	Iulti-region format



Revision: 03/26/2015 Supersedes Revision: 03/15/2010

		sal Considera	ations	
3.1 Waste	Disposal Method: Dispose in accordance with loc	al, state, and federa	l regulations.	
	Section 14. Trar	sport Informa	ation	
14.1 LAND	TRANSPORT (US DOT):			
DOT Prop DOT Haza UN/NA Nu				
	TRANSPORT (European ADR/RID):			
	Shipping Name: Not dangerous goods. er:			
	RANSPORT (ICAO/IATA):			
	A Shipping Name: Not dangerous goods.			
Additional Tra	ansport Transport in accordance with I	ocal, state, and fede	ral regulations.	
	Section 15. Regu	latory Inform	ation	
EPA SARA (S	Superfund Amendments and Reauthorization Act	•		
CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
77-86-1	Trizma base	No	No	Yes-Cat. N106
7647-14-5	Sodium chloride	No	No	No
7647-14-5 7447-40-7	Sodium chloride Potassium chloride	No No	No No	No No
		-	-	
7447-40-7	Potassium chloride	No	No	No
7447-40-7 7791-18-6	Potassium chloride Magnesium chloride, hexahydrate	No No	No No No	No No
7447-40-7 7791-18-6 7732-18-5	Potassium chloride Magnesium chloride, hexahydrate Water	No No No Other US EPA of	No No No r State Lists HAP; CWA NPDE	No No
7447-40-7 7791-18-6 7732-18-5 CAS #	Potassium chloride Magnesium chloride, hexahydrate Water Hazardous Components (Chemical Name)	No No No Other US EPA or CAA HAP,ODC: Inventory; CA Pl	No No No r State Lists HAP; CWA NPDE ROP.65: No No; CWA NPDES:	No No No S: No; TSCA: Yes -
7447-40-7 7791-18-6 7732-18-5 CAS # 77-86-1	Potassium chloride Magnesium chloride, hexahydrate Water Hazardous Components (Chemical Name) Trizma base	No No No Other US EPA or CAA HAP,ODC: Inventory; CA PI CAA HAP,ODC: Inventory; CA PI Inventory; CA PI	No No No r State Lists HAP; CWA NPDE ROP.65: No No; CWA NPDES: ROP.65: No No; CWA NPDES:	No No No S: No; TSCA: Yes - : No; TSCA: Yes -
7447-40-7 7791-18-6 7732-18-5 CAS # 77-86-1 7647-14-5	Potassium chloride Magnesium chloride, hexahydrate Water Hazardous Components (Chemical Name) Trizma base Sodium chloride	No No No Other US EPA or CAA HAP,ODC: Inventory; CA PI CAA HAP,ODC: Inventory; CA PI	No No No State Lists HAP; CWA NPDE ROP.65: No No; CWA NPDES: ROP.65: No No; CWA NPDES: ROP.65: No	No No No S: No; TSCA: Yes - : No; TSCA: Yes -

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:	03/26/2015
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.



SIRT3 (human recombinant) Direct Assay Reagent

		ording to Regulation (EC) No. 1907/2006 as amended by	
	Section 1.	Identification of the Substance/Mixture and of the	he Company/Undertaking
1.1	Product Code:	10012541	
	Product Name:	SIRT3 (human recombinant) Direct Assay Rea	agent
	Synonyms:	SIRT3 (human recombinant);	
.2		f the substance or mixture and uses advised ag	
	Relevant identified uses	: For research use only, not for human or veteri	nary use.
1.3	Details of the Supplier of t	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 num	nber:	
	Emergency Contact:	CHEMTREC Within USA and Canada:	+1 (800)424-9300
		CHEMTREC Outside USA and Canada:	+1 (703)527-3887
		Section 2. Hazards Identific	ation
2.1.1	Skin Corrosion/Irritation Serious Eye Damage/Ey	to Regulation (EC) No 1272/2008 [CLP]:	
2.1.1 2.2	Classification according to Skin Corrosion/Irritation Serious Eye Damage/Ey Label Elements:	to Regulation (EC) No 1272/2008 [CLP]: n, Category 2	
2.1.1 2.2	Classification according to Skin Corrosion/Irritation Serious Eye Damage/Ey Label Elements:	to Regulation (EC) No 1272/2008 [CLP]: n, Category 2 re Irritation, Category 2A	
2.1.1 2.2	Classification according to Skin Corrosion/Irritation Serious Eye Damage/Ey Label Elements: Labeling according to Re	to Regulation (EC) No 1272/2008 [CLP]: n, Category 2 re Irritation, Category 2A gulation (EC) No 1272/2008 [CLP]:	
2.1.1 2.2	Classification according to Skin Corrosion/Irritation Serious Eye Damage/Ey Label Elements: Labeling according to Re GHS Signal Word:	to Regulation (EC) No 1272/2008 [CLP]: n, Category 2 re Irritation, Category 2A gulation (EC) No 1272/2008 [CLP]: Warning	
2.1.1 2.2	Classification according to Skin Corrosion/Irritation Serious Eye Damage/Ey Label Elements: Labeling according to Res GHS Signal Word: GHS Hazard Phrases:	to Regulation (EC) No 1272/2008 [CLP]: h, Category 2 re Irritation, Category 2A gulation (EC) No 1272/2008 [CLP]: Warning	
2.1.1 2.2	Classification according to Skin Corrosion/Irritation Serious Eye Damage/Ey Label Elements: Labeling according to Re GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritation	to Regulation (EC) No 1272/2008 [CLP]: n, Category 2 re Irritation, Category 2A gulation (EC) No 1272/2008 [CLP]: Warning on. e irritation.	
2.1.1 2.2	Classification according to Skin Corrosion/Irritation Serious Eye Damage/Ey Label Elements: Labeling according to Res GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritation H319: Causes serious eye GHS Precaution Phrases: P264: Wash {hands} thory	to Regulation (EC) No 1272/2008 [CLP]: h, Category 2 re Irritation, Category 2A gulation (EC) No 1272/2008 [CLP]: Warning on. e irritation. s: oughly after handling.	
2.1.1 2.2	Classification according to Skin Corrosion/Irritation Serious Eye Damage/Ey Label Elements: Labeling according to Res GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritation H319: Causes serious eye GHS Precaution Phrases: P264: Wash {hands} thory	to Regulation (EC) No 1272/2008 [CLP]: h, Category 2 re Irritation, Category 2A gulation (EC) No 1272/2008 [CLP]: Warning on. e irritation. s:	ion}.
2.1.1 2.2	Classification according to Skin Corrosion/Irritation Serious Eye Damage/Ey Label Elements: Labeling according to Ref GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritation H319: Causes serious eye GHS Precaution Phrases: P264: Wash {hands} thoro P280: Wear {protective gling GHS Response Phrases	to Regulation (EC) No 1272/2008 [CLP]: h, Category 2 re Irritation, Category 2A gulation (EC) No 1272/2008 [CLP]: Warning on. e irritation. s: oughly after handling. oves/protective clothing/eye protection/face protection: ::	ion}.
2.1.1 2.2	Classification according to Skin Corrosion/Irritation Serious Eye Damage/Ey Label Elements: Labeling according to Ref GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritation H319: Causes serious eye GHS Precaution Phrases P264: Wash {hands} thoro P280: Wear {protective glu GHS Response Phrases P302+352: IF ON SKIN: V	to Regulation (EC) No 1272/2008 [CLP]: h, Category 2 re Irritation, Category 2A gulation (EC) No 1272/2008 [CLP]: Warning on. e irritation. s: oughly after handling. oves/protective clothing/eye protection/face protection : Wash with plenty of soap and water.	
2.1.1 2.2	Classification according to Skin Corrosion/Irritation Serious Eye Damage/Ey Label Elements: Labeling according to Ref GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritation H319: Causes serious eye GHS Precaution Phrases P264: Wash {hands} thoro P280: Wear {protective gli GHS Response Phrases P302+352: IF ON SKIN: W	to Regulation (EC) No 1272/2008 [CLP]: h, Category 2 re Irritation, Category 2A gulation (EC) No 1272/2008 [CLP]: Warning on. e irritation. s: oughly after handling. oves/protective clothing/eye protection/face protection: ::	
2.1.1 2.2	Classification according to Skin Corrosion/Irritation Serious Eye Damage/Eye Label Elements: Labeling according to Ref GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritation H319: Causes serious eye GHS Precaution Phrases: P264: Wash {hands} thoro P280: Wear {protective gli GHS Response Phrasess P302+352: IF ON SKIN: W P305+351+338: IF IN EYE	to Regulation (EC) No 1272/2008 [CLP]: h, Category 2 re Irritation, Category 2A gulation (EC) No 1272/2008 [CLP]: Warning on. e irritation. s: oughly after handling. oves/protective clothing/eye protection/face protection : Wash with plenty of soap and water. ES: Rinse cautiously with water for several minutes	
2.1.1 2.2	Classification according to Skin Corrosion/Irritation Serious Eye Damage/Ey Label Elements: Labeling according to Ref GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritation H319: Causes serious eye GHS Precaution Phrases P264: Wash {hands} thoro P280: Wear {protective glu GHS Response Phrases P302+352: IF ON SKIN: W P305+351+338: IF IN EYE to do. Continue rinsing. P332+313: If skin irritation	to Regulation (EC) No 1272/2008 [CLP]: h, Category 2 re Irritation, Category 2A gulation (EC) No 1272/2008 [CLP]: Warning on. e irritation. s: oughly after handling. oves/protective clothing/eye protection/face protection : Wash with plenty of soap and water. ES: Rinse cautiously with water for several minutes h occurs, get medical advice/attention.	
2.1.1 2.2	Classification according to Skin Corrosion/Irritation Serious Eye Damage/Ey Label Elements: Labeling according to Ref GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritation H319: Causes serious eye GHS Precaution Phrases P264: Wash {hands} thoro P280: Wear {protective gli GHS Response Phrases P302+352: IF ON SKIN: W P305+351+338: IF IN EYE to do. Continue rinsing. P332+313: If skin irritation P337+313: If eye irritation	to Regulation (EC) No 1272/2008 [CLP]: h, Category 2 re Irritation, Category 2A gulation (EC) No 1272/2008 [CLP]: Warning on. e irritation. s: oughly after handling. oves/protective clothing/eye protection/face protection : Wash with plenty of soap and water. ES: Rinse cautiously with water for several minutes	
2.1 2.1.1 2.2 2.2.1	Classification according to Skin Corrosion/Irritation Serious Eye Damage/Ey Label Elements: Labeling according to Ref GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritation H319: Causes serious eye GHS Precaution Phrases P264: Wash {hands} thoro P280: Wear {protective gli GHS Response Phrases P302+352: IF ON SKIN: W P305+351+338: IF IN EYE to do. Continue rinsing. P332+313: If skin irritation P337+313: If eye irritation	to Regulation (EC) No 1272/2008 [CLP]: h, Category 2 re Irritation, Category 2A gulation (EC) No 1272/2008 [CLP]: Warning on. e irritation. s: oughly after handling. oves/protective clothing/eye protection/face protection: Wash with plenty of soap and water. ES: Rinse cautiously with water for several minutes h occurs, get medical advice/attention. h persists, get medical advice/attention. h ted clothing and wash before re-use.	

Page: 2 of 6

SIRT3 (human recombinant) Direct Assay Reagent

Revision: 04/01/2015 Supersedes Revision: 07/27/2010

Adverse Human Health Causes skin and serious eye irritation. 2.3 **Effects and Symptoms:**

Material may be irritating to the mucous membranes and upper respiratory tract.

May be harmful by inhalation, ingestion, or skin absorption.

May cause respiratory system irritation.

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	SIRT3 Direct (human recombinant)	5.0 -20.0 %	NA NA	No data available.
56-81-5 MA8050000	Glycerol	10.0 -40.0 %	200-289-5 NA	No data available.
7732-18-5 ZC0110000	Water	40.0 -85.0 %	231-791-2 NA	No data available.

Section 4. First Aid Measures

4.1	Description of First Aid	No data available.
	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. Use water spray to cool fire-exposed containers. Media: Unsuitable Extinguishing A solid water stream may be inefficient. Media: 5.2 Flammable Properties and No data available. Hazards:

Flash Pt: No data. **Explosive Limits:** LEL: No data. UEL: No data. No data. Autoignition Pt:

Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or 5.3 equivalent), and full protective gear to prevent contact with skin and eyes.



SIRT3 (human recombinant) Direct Assay Reagent

			Section 6. Ac	cidental Release N	Measures	
6.1	Protect	ive Precautions,	Avoid breathing vapo	ors and provide adequate ve	ntilation.	
	Protect	ive Equipment and	d As conditions warran	it, wear a NIOSH approved	self-contained breathing a	apparatus, or respirator,
	Emerge	ency Procedures:	and appropriate pers	onal protection (rubber boot	s, safety goggles, and he	avy rubber gloves).
6.2	Enviror	nmental	Take steps to avoid r	release into the environment	t, if safe to do so.	
	Precaut	tions:				
6.3			r Contain spill and coll			
		ment and Cleanir	gTransfer to a chemic	al waste container for dispos	sal in accordance with loc	al regulations.
	Up:					
			Section 7.	Handling and Sto	orage	
7.1	Precau	tions To Be Taken	Avoid breathing dust/	fume/gas/mist/vapours/spra	у.	
	in Hanc	lling:	Avoid prolonged or re	epeated exposure.		
7.2	Precau	tions To Be Taken	Keep container tightly	/ closed.		
	in Stori	ng:	Store in accordance	with information listed on the	e product insert.	
		Sec	tion 8. Exposu	re Controls/Perso	nal Protection	
8.1	Exposu	re Parameters:	•			
CAS	#	Partial Chemical	Name	Britain EH40	France VL	Europe
	NA	SIRT3 Direct (hur	nan recombinant)	No data.	No data.	No data.
56	-81-5	Glycerol		TWA: 10 mg/m3 () STEL: ()	TWA: 10 mg/m3	No data.
773	2-18-5	Water		No data.	No data.	No data.
CAS	#	Partial Chemical	Name	OSHA TWA	ACGIH TWA	Other Limits
	NA	SIRT3 Direct (hur	man recombinant)	No data.	No data.	No data.
56	-81-5	Glycerol		PEL: 15 (dust); 5 (resp.) mg/m3	TLV: 10 mg/m3	No data.
773	2-18-5	Water		No data.	No data.	No data.
8.2	Exposu	re Controls:				
8.2.1	-	ering Controls	-	res, local exhaust ventilatior	n, or other engineering cor	ntrols to control airborne
	-	tion etc.):		ended exposure limits.		
8.2.2		al protection equi				
	-	otection:	Safety glasses			
		ive Gloves:	Compatible chemical	-resistant gloves		
		rotective Clothing	-			
	-	itory Equipment y Type):	NIOSH approved res	pirator, as conditions warrar	11.	
			n Do not take internally			
	ce Prac		-	ilizing this material should b	e equipped with an eyewa	ash facility and a safety
			shower.			
			Wash thoroughly afte	r handling.		
			No data available.			



SIRT3 (human recombinant) Direct Assay Reagent

Physical States: []Gas [X]Liquid []Solid Appearance and Odor: Solution pH: 7.2 Metting Point: No data. Boiling Point: No data. Flash Pt: No data. Evaporation Rate: No data. Evaporation Rate: No data. Evaporation Rate: No data. Vapor Pressure (vs. Air or mm No data. Hg): Vapor Density (vs. Air = 1): Vapor Density (vs. Air = 1): No data. Solubility in Water: No data. Solubility in Water: No data. Percent Volatile: No data. Percent Volatile: No data. Vator Information Exection 10. Stability and Reactivity Pol Stability: Unstable [] Stable [X] D3< Stability Note(s): Stable [] Vator To Avoid: No data available. D4 Conditions To Avoid: No data available. D5 Incompatibility - Materiats metals To Avoid: No data available. D4 Conditions To Avoid: No data availabl			Supersedes Revision: 0//2//2010
Physical States: []Gas [X]Liquid []Solid Appearance and Odor: Solution pH: 7.2 Metting Point: No data. Boiling Point: No data. Flash Pt: No data. Evaporation Rate: No data. Evaporation Rate: No data. Evaporation Rate: No data. Uspor Pressure (vs. Air or mm No data. Vapor Pressure (vs. Air or mm No data. Yapor Density (vs. Air = 1): No data. Solubility in Water: No data. Autoignition Pt: No data. Percent Volatile: No data. Vator Information Section 10. Stability and Reactivity D1 Reactivity: No data available. D2 Stability: Ustable [] D3 Stability: Stabile if stored in accordance with information listed on the product insert. Polymerization: Will occur [] Will not occur [X] D4 Conditions To Avoid: No data available. D5 Incompatibility - Materials metals To Avoid: To Avoid: Strong acids strong		S	ection 9. Physical and Chemical Properties
Appearance and Odor: Solution pH: 7.2 Melting Point: No data. Boiling Point: No data. Boiling Point: No data. Flash Pt: No data. Evaporation Rate: No data. Evaporation Rate: No data. Evaporation Rate: No data. Evaporation Rate: 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. Autoignition Pt: No data. Percent Volatile: No data. Vapor Density (vs. Air = 1): No data. Autoignition Pt: No data. Percent Volatile: No data. Vapor Density: No data. Vapor Density: No data. Vapor Density: No data. Stability: U Vapor Density: No data. Stability: Unstable [] Stability: Unstable [] Stability: No data avail	9.1	Information on Basic Phys	sical and Chemical Properties
pH: 7.2 Metting Point: No data. Boiling Point: No data. Flash Pt: No data. Explosive Limits: LEL: No data. Explosive Limits: LEL: No data. Vapor Pressure (vs. Air or mm No data. Hg): Vapor Pressure (vs. Air or mm Vapor Density (vs. Air = 1): No data. Solubility in Water: No data. Solubility in Water: No data. Autoignition Pt: No data. Percent Volatile: No data. Vapor Density (Water = 1): No data. Autoignition Pt: No data. Percent Volatile: No data. Vapor Data: No data. Solubility in Water: No data. Vapor Data: No data. <td< th=""><th></th><th>Physical States:</th><th>[]Gas [X]Liquid []Solid</th></td<>		Physical States:	[]Gas [X]Liquid []Solid
Melting Point: No data. Boiling Point: No data. Flash Pt: No data. Evaporation Rate: No data. Evaporation Rate: No data. Evaporation Rate: No data. Vapor Pressure (vs. Air or mm 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. Autoignition Pt: No data. Percent Volatile: No data. Vator Density (vs. Vator endown en		Appearance and Odor:	Solution
Boiling Point: No data. Flash Pt: No data. Evaporation Rate: No data. Explosive Limits: LEL: No data. Upor Pressure (vs. Air or mn No data. Hg): Vapor Pressure (vs. Air or mn Vapor Density (vs. Air = 1): No data. Specific Gravity (Water = 1): No data. Solubility in Water: No data. Autoignition Pt: No data. Vapor Persesure (vs. Air or mn No data. Solubility in Water: No data. Solubility in Water: No data. Vatoignition Pt: No data. Percent Volatile: No data. Percent Volatile: No data. Vill exactivity: No data available. D2 Stability: Note(s): Stable [X] D3 Stability: Note(s): Stable if stored in accordance with information listed on the product insert. Polymerization: Will occur [] Will not occur [X] D4 Conditions To Avoid: No data available. D5 Incompatibility Materials Storeg bases strong oxidizing agents D4 Conditions To Avoid:		pH:	7.2
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Evaporation Rate: No data. Explosive Limits: LEL: No data. UEL: No data. Vapor Pressure (vs. Air or mm No data. No data. Hg): Vapor Density (vs. Air = 1): Vapor Density (vs. Air = 1): No data. Specific Gravity (Water = 1): No data. Specific Gravity (Water = 1): No data. Solubility in Water: No data. Autoignition Pt: No data. Vapor Preseure Volatile: No data available. Vapor Preseure Volatility - Materials No data available. Vapor Preseure Volatilie: No data available.		Boiling Point:	No data.
Explosive Limits: LEL: No data. UEL: No data. Vapor Pressure (vs. Air or mn No data. Hg): No data. Vapor Density (vs. Air = 1): No data. Specific Gravity (Water = 1): No data. Solubility in Water: No data. Autoignition Pt: No data. Autoignition Pt: No data. Percent Volatile: No data. Vapor Pressure (vs. Air = 1): No data. No data No data. Percent Volatile: No data. Vapor Pressure (vs. Air = 1): No data. No data No data. Vator (vs. Air = 1): No data. Percent Volatile: No data. Vapor Pressure (vs. Air = 1): No data. No data available: Vistable [] Stability Note(s): Stable if stored in accordance with information listed on the product insert. Polymerization: Will occur [] Vista available: Vista available: No Aata available: Vista available: No Aata available: Vista available: No Aata available: Vista available: N		Flash Pt:	No data.
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2 Other Information Percent Volatile: No data. 2 Section 10. Stability and Reactivity 0.1 Reactivity: No data available. 0.2 Stability: Unstable [] Stable [X] 0.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert. Polymerization: Will occur [] Will not occur [X] 0.4 Conditions To Avoid: No data available. 0.5 Incompatibility - Materials metals To Avoid: To Avoid: strong acids strong bases strong oxidizing agents strong oxidizing agents 0.6 Hazardous carbon monoxide Decomposition Or carbon monoxide Byproducts: hydrogen chloride gas phosphorus oxides phosphorus oxides			
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0.1 Reactivity: No data available. 0.2 Stability: Unstable [] Stable [X] 0.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert. Polymerization: Will occur [] Will not occur [X] 0.4 Conditions To Avoid: No data available. 0.5 Incompatibility - Materials metals To Avoid: To Avoid: strong acids strong bases strong oxidizing agents carbon dioxide Decomposition Or carbon monoxide Byproducts: hydrogen chloride gas phosphorus oxides stored		Percent Volatile:	No data.
0.2 Stability: Unstable [] Stable [X] 0.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert. Polymerization: Will occur [] Will not occur [X] 0.4 Conditions To Avoid: No data available. 0.5 Incompatibility - Materials metals To Avoid: strong acids To Avoid: strong acids strong oxidizing agents 0.6 Hazardous carbon dioxide Decomposition Or carbon monoxide Byproducts: hydrogen chloride gas phosphorus oxides phosphorus oxides			Section 10. Stability and Reactivity
0.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert. Polymerization: Will occur [] Will not occur [X] 0.4 Conditions To Avoid: No data available. 0.5 Incompatibility - Materials metals To Avoid: To Avoid: strong acids strong bases strong oxidizing agents 0.6 Hazardous carbon dioxide Decomposition Or carbon monoxide Byproducts: hydrogen chloride gas phosphorus oxides phosphorus oxides	10.1	Reactivity:	No data available.
Polymerization: Will occur [] Will not occur [X] 0.4 Conditions To Avoid: No data available. 0.5 Incompatibility - Materials: Incompatibility - Materials: To Avoid: strong acids strong bases strong bases strong oxidizing agents 0.6 Hazardous carbon dioxide Decomposition Or carbon monoxide Byproducts: hydrogen chloride gas phosphorus oxides phosphorus oxides	10.2	Stability:	Unstable [] Stable [X]
0.4 Conditions To Avoid: No data available. 0.5 Incompatibility - Materials metals To Avoid: strong acids strong bases strong oxidizing agents 0.6 Hazardous carbon dioxide Decomposition Or carbon monoxide Byproducts: hydrogen chloride gas phosphorus oxides	10.3	Stability Note(s):	Stable if stored in accordance with information listed on the product insert.
0.5 Incompatibility - Materials metals To Avoid: strong acids strong bases strong oxidizing agents 0.6 Hazardous carbon dioxide Decomposition Or carbon monoxide Byproducts: hydrogen chloride gas phosphorus oxides phosphorus oxides		Polymerization:	Will occur [] Will not occur [X]
To Avoid: strong acids strong bases strong oxidizing agents D.6 Hazardous carbon dioxide Decomposition Or carbon monoxide Byproducts: hydrogen chloride gas phosphorus oxides phosphorus oxides	10.4	Conditions To Avoid:	No data available.
strong bases strong oxidizing agents 0.6 Hazardous carbon dioxide Decomposition Or Byproducts: hydrogen chloride gas phosphorus oxides	10.5	Incompatibility - Materials	s metals
0.6 Hazardous carbon dioxide Decomposition Or carbon monoxide Byproducts: hydrogen chloride gas phosphorus oxides		To Avoid:	strong acids
0.6 Hazardous carbon dioxide Decomposition Or carbon monoxide Byproducts: hydrogen chloride gas phosphorus oxides			strong bases
Decomposition Orcarbon monoxideByproducts:hydrogen chloride gasphosphorus oxides			strong oxidizing agents
Byproducts: hydrogen chloride gas phosphorus oxides	10.6		
phosphorus oxides		•	
		Byproducts:	
			sodium oxides



SIRT3 (human recombinant) Direct Assay Reagent

11.1	Informat	ion on		1. Toxicological			Idied	
		ogical Effects:	-	n Data: Eyes (rabbit): 500				(4h) mild:
		Toxicological	-	ated as a mutagen, repr	• • •			,,
	Effects:	.		try of Toxic Effects of Ch			•	sented here.
			See actual entry in	n RTECS for complete in	formation.			
			Glycerol RTECS N	Number: MA8050000				
Carcir	nogenicity	/:	NTP? No IAF	RC Monographs? No	OSHA Re	gulated? No		
CAS	¥	Hazardous Com	ponents (Chemica	al Name)	NTP	IARC	ACGIH	OSHA
	NA	SIRT3 Direct (hur	nan recombinant)		n.a.	n.a.	n.a.	n.a.
56	-81-5	Glycerol			n.a.	n.a.	n.a.	n.a.
773	2-18-5	Water			n.a.	n.a.	n.a.	n.a.
			Section 2	12. Ecological Ir	formati	on		
12.1	Toxicity	:	Avoid release into	the environment.				
			Runoff from fire co	ontrol or dilution water ma	ay cause po	llution.		
12.2	Persiste	nce and	No data available.					
	Degrada	bility:						
12.3		mulative	No data available.					
	Potentia							
12.4	Mobility		No data available.					
12.5			No data available.					
126	assessm		No data available					
12.6		iverse effects:	No data available.					
	Other ad	Iverse effects:	Section 1	3. Disposal Con				
	Other ad	Iverse effects:	Section 13 Dispose in accord	3. Disposal Con ance with local, state, ar	d federal re	gulations.		
	Other ad	Iverse effects:	Section 13 Dispose in accord	3. Disposal Con	d federal re	gulations.		
12.6	Other ad Waste D	Iverse effects:	Section 1 Dispose in accord Section	3. Disposal Con ance with local, state, ar	d federal re	gulations.		
13.1	Other ad Waste D	lverse effects: isposal Method:	Section 1 Dispose in accord Section	3. Disposal Con ance with local, state, ar 14. Transport Ir	d federal re	gulations.		
13.1 14.1 	Other ad Waste D	lverse effects: isposal Method: RANSPORT (US I r Shipping Name:	Section 1 Dispose in accord Section	3. Disposal Con ance with local, state, ar 14. Transport Ir	d federal re	gulations.		
13.1 14.1 D U	Other ad Waste D LAND T OT Prope OT Hazard	Iverse effects: isposal Method: RANSPORT (US I r Shipping Name: d Class: nber:	Section 13 Dispose in accord Section DOT): Not dangerou	3. Disposal Con ance with local, state, ar 14. Transport Ir	d federal re	gulations.		
13.1 14.1 D U 14.1	Other ad Waste D LAND T OT Prope OT Hazard N/NA Nun LAND T	Iverse effects: isposal Method: RANSPORT (US I r Shipping Name: d Class: nber: RANSPORT (Euro	Section 1: Dispose in accord Section DOT): Not dangerou	3. Disposal Con ance with local, state, ar 14. Transport Ir s goods.	d federal re	gulations.		
13.1 14.1 D U 14.1 A	Other ad Waste D LAND T OT Prope OT Hazard N/NA Nun LAND T DR/RID S	Iverse effects: isposal Method: RANSPORT (US I r Shipping Name: d Class: nber: RANSPORT (Euro hipping Name:	Section 13 Dispose in accord Section DOT): Not dangerou	3. Disposal Con ance with local, state, ar 14. Transport Ir s goods.	d federal re	gulations.		
13.1 14.1 D U 14.1 A U	Other ad Waste D LAND T OT Prope OT Hazard N/NA Nun LAND T DR/RID SI N Number	Iverse effects: isposal Method: RANSPORT (US I r Shipping Name: d Class: nber: RANSPORT (Euro hipping Name: r:	Section 1: Dispose in accord Section DOT): Not dangerou	3. Disposal Con ance with local, state, ar 14. Transport Ir s goods.	d federal re	gulations.		
13.1 14.1 D U 14.1 A U H	Other ad Waste D LAND T OT Prope OT Hazard N/NA Num LAND T DR/RID SI N Number azard Class	Iverse effects: isposal Method: RANSPORT (US I r Shipping Name: d Class: nber: RANSPORT (Euro hipping Name: r: ss:	Section 13 Dispose in accord Section OOT): Not dangerou	3. Disposal Con ance with local, state, ar 14. Transport Ir s goods.	d federal re	gulations.		
13.1 14.1 D 14.1 14.1 A U H 14.3	Other ad Waste D LAND T OT Prope OT Hazard N/NA Nun LAND T DR/RID SI N Number azard Clas AIR TRA	Iverse effects: isposal Method: RANSPORT (US I r Shipping Name: d Class: nber: RANSPORT (Euro hipping Name: r: ss: ANSPORT (ICAO/I	Section 13 Dispose in accord Section DOT): Not dangerou Depean ADR/RID): Not dangerou	3. Disposal Con ance with local, state, ar 14. Transport Ir s goods. s goods.	d federal re	gulations.		
13.1 14.1 D 14.1 14.1 A U H 14.3 IC	Other ad Waste D LAND T OT Prope OT Hazard N/NA Num LAND T DR/RID SI N Number azard Class AIR TRA	Iverse effects: isposal Method: RANSPORT (US I r Shipping Name: d Class: nber: RANSPORT (Euro hipping Name: r: ss: ANSPORT (ICAO/I Shipping Name:	Section 13 Dispose in accord Section DOT): Not dangerou Opean ADR/RID): Not dangerou ATA): Not dangerou	3. Disposal Con ance with local, state, ar 14. Transport Ir s goods. s goods.	id federal re nformati	gulations. ON		
13.1 14.1 D 14.1 14.1 A U H 14.3 IC Addit	Other ad Waste D LAND T OT Prope OT Hazard N/NA Nun LAND T DR/RID SI N Number azard Clas AIR TRA	Iverse effects: isposal Method: RANSPORT (US I r Shipping Name: d Class: nber: RANSPORT (Euro hipping Name: r: ss: ANSPORT (ICAO/I Shipping Name:	Section 13 Dispose in accord Section DOT): Not dangerou Opean ADR/RID): Not dangerou ATA): Not dangerou	3. Disposal Con ance with local, state, ar 14. Transport Ir s goods. s goods.	id federal re nformati	gulations. ON		
13.1 14.1 D 14.1 14.1 A U H 14.3 IC Addit	Other ad Waste D LAND T OT Prope OT Hazard N/NA Nun LAND T DR/RID SI N Number azard Clas AIR TRA AO/IATA	Iverse effects: isposal Method: RANSPORT (US I r Shipping Name: d Class: nber: RANSPORT (Euro hipping Name: r: ss: ANSPORT (ICAO/I Shipping Name:	Section 13 Dispose in accord Section DOT): Not dangerou Opean ADR/RID): Not dangerou ATA): Not dangerou	3. Disposal Con ance with local, state, ar 14. Transport Ir s goods. s goods.	id federal re nformati	gulations. ON		
13.1 14.1 D 14.1 14.1 A U H 14.3 IC Addit	Other ad Waste D LAND T OT Prope OT Hazard N/NA Nun LAND T DR/RID SI N Number azard Clas AIR TRA AO/IATA	Iverse effects: isposal Method: RANSPORT (US I r Shipping Name: d Class: nber: RANSPORT (Euro hipping Name: r: ss: ANSPORT (ICAO/I Shipping Name:	Section 13 Dispose in accord Section DOT): Not dangerou Opean ADR/RID): Not dangerou ATA): Not dangerou	3. Disposal Con ance with local, state, ar 14. Transport Ir s goods. s goods.	id federal re nformati	gulations. ON		
13.1 14.1 D 14.1 14.1 A U H 14.3 IC Addit	Other ad Waste D LAND T OT Prope OT Hazard N/NA Nun LAND T DR/RID SI N Number azard Clas AIR TRA AO/IATA	Iverse effects: isposal Method: RANSPORT (US I r Shipping Name: d Class: nber: RANSPORT (Euro hipping Name: r: ss: ANSPORT (ICAO/I Shipping Name:	Section 13 Dispose in accord Section DOT): Not dangerou Opean ADR/RID): Not dangerou ATA): Not dangerou	3. Disposal Con ance with local, state, ar 14. Transport Ir s goods. s goods.	id federal re nformati	gulations. ON		



SIRT3 (human recombinant) Direct Assay Reagent

CAS #	Harardaua Carr	nonanta (Chamiaal Nama)	6 202 (EUC)	S. 304 RQ	6 242 (TDI)		
	Hazardous Components (Chemical Name)		S. 302 (EHS)		S. 313 (TRI)		
NA		man recombinant)	No	No	No		
56-81-5	Glycerol		No	No	No		
7732-18-5	Water		No	No	No		
CAS #	Hazardous Com	ponents (Chemical Name)	Other US EPA o	Other US EPA or State Lists			
NA	SIRT3 Direct (human recombinant)		CAA HAP,ODC: PROP.65: No	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No			
56-81-5	Glycerol		CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No				
7732-18-5	Water			CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No			
Regulatory Inf Statement:	ormation	This SDS was prepared in acc No.1272/2008.	ordance with 29 CFF	R 1910.1200 and R	egulation (EC)		
		Section 16. Ot	her Information	on			
Revision Date	:	04/01/2015					
Additional Info This Product:	ormation About	No data available.					
Company Poli	cy or Disclaimer:	DISCLAIMER: This information currently available to us. Howe express or implied, with respec- use. Users should make their their particular purposes.	ever, we make no wa ct to such informatior	rranty of merchanta n, and we assume r	ability or any other warrant no liability resulting from its		



Revision: 04/01/2015 Supersedes Revision: 03/15/2010

	THEMPERI				5	Supersedes Revision: 03/15/2010
		acco	rding to Regulation (EC) No. 190	7/2006 as amended b	y (EC) No. 1272/200	8
		Section 1. Id	dentification of the Substar	nce/Mixture and of	the Company/U	ndertaking
1.1	Product Product		10012542 SIRT3 Direct Peptide			
.2	Relevan	t identified uses of	the substance or mixture a	and uses advised a	igainst:	
	Releva	int identified uses:	For research use only, ne	ot for human or vete	rinary use.	
1.3	Details o	of the Supplier of th	ne Safety Data Sheet:			
	Compa	any Name:	Cayman Chemical Comp 1180 E. Ellsworth Rd. Ann Arbor, MI 48108	bany		
	Web si	ite address:	www.caymanchem.com			
	Inform	ation:	Cayman Chemical Comp	bany	+1 (734	4)971-3335
.4	Emerger	ncy telephone num	ber:			
	Emerg	ency Contact:	CHEMTREC Within USA			0)424-9300
			CHEMTREC Outside US			3)527-3887
			Section 2. Ha	zards Identifi	cation	
.1		cation of the Subst				
.1.1			Regulation (EC) No 1272/2	2008 [CLP]:		
.2	Label El					
.2.1			ulation (EC) No 1272/2008	[CLP]:		
		ignal Word:	None			
		lazard Phrases:				
			rently available data this sub	stance or mixture is	not classifiable ac	cording to GHS.
		Precaution Phrases	:			
	-	ases apply. Response Phrases:				
		ases apply.				
	•	Storage and Dispos	al Phrases:			
			or Storage and Section 13 for	Disposal informatio	on.	
.3	Adverse	e Human Health	Material may be irritating to t	he mucous membra	nes and upper res	
	Effects	and Symptoms:				piratory tract.
		and Symptoms.	May be harmful by inhalation	, ingestion, or skin a	absorption.	piratory tract.
			May cause eye, skin, or resp	iratory system irritat	ion.	
			May cause eye, skin, or resp	iratory system irritat	ion.	piratory tract.
			May cause eye, skin, or resp	iratory system irritat e, the toxicological p	ion. roperties have not	been thoroughly investigated.
	-	Secti	May cause eye, skin, or resp To the best of our knowledge On 3. Composition onents (Chemical Name)/	iratory system irritat e, the toxicological p	ion. roperties have not	been thoroughly investigated.
RTEC 77-	-86-1	Secti Hazardous Compo	May cause eye, skin, or resp To the best of our knowledge On 3. Composition onents (Chemical Name)/	iratory system irritat e, the toxicological p /Information	ion. roperties have not on Ingredie EC No./	been thoroughly investigated.
77- 77290 7647	S # -86-1 00000 7-14-5	Secti Hazardous Compo REACH Registrati	May cause eye, skin, or resp To the best of our knowledge On 3. Composition onents (Chemical Name)/	iratory system irritat e, the toxicological p /Information Concentration	ion. roperties have not On Ingredie EC No./ EC Index No. 201-064-4	been thoroughly investigated. nts GHS Classification Skin Corr. 2: H315 Eye Damage 2: H319
TY290 7647 VZ472	25 # -86-1 -00000 7-14-5 25000 7-40-7	Secti Hazardous Compo REACH Registrati Trizma base	May cause eye, skin, or resp To the best of our knowledge On 3. Composition onents (Chemical Name)/	iratory system irritat e, the toxicological p /Information Concentration 0.6 %	ion. roperties have not ON Ingredie EC No./ EC Index No. 201-064-4 NA 231-598-3	been thoroughly investigated. nts GHS Classification Skin Corr. 2: H315 Eye Damage 2: H319 STOT (SE) 3: H335 H336



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caym	an				Supersedes Revision: 03/15/2010			
OM29750	00			NA				
NA NA	SIRT3 Direct Peptid	e	0.41 %	NA NA	No data available.			
7732-18 ZC011000			98.15 %	231-791-2 NA	No data available.			
		Section 4. Fi	rst Aid Me	asures				
	escription of First Aid easures:	No data available.						
In	Case of Inhalation:	Remove to fresh air. If not br Get immediate medical atten		ificial respiration or g	give oxygen by trained personnel			
In	Case of Skin Contact:	Immediately wash skin with s clothing. Get medical attention			15 minutes. Remove contaminate before reuse.			
In	Case of Eye Contact:	Hold eyelids apart and flush and tested by medical persor		of water for at least	15 minutes. Have eyes examine			
In	n 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 I	Measures				
	uitable Extinguishing edia:	Use alcohol-resistant foam, o Use water spray to cool fire-		-	al spray.			
	nsuitable Extinguishing Iedia:	a A solid water stream may be	inefficient.					
	lammable Properties ar azards:	id No data available.						
FI	lash Pt:	No data.						
	xplosive Limits:	LEL: No data.	UEL: N	No data.				
	utoignition Pt:	No data.						
5.3 Fi	ire Fighting Instruction	s: As in any fire, wear self-cont equivalent), and full protective	-		-demand (NIOSH approved or and eyes.			
		Section 6. Accider	ntal Releas	se Measures				
Рі	rotective Precautions, rotective Equipment an mergency Procedures:		a NIOSH appro	oved self-contained b	preathing apparatus, or respirator es, and heavy rubber gloves).			
6.2 Ei	nvironmental recautions:	Take steps to avoid release	,					
6.3 M	ethods and Material Fo	r Contain spill and collect, as ngTransfer to a chemical wast		lisposal in accordanc	ce with local regulations.			
U	p:							
		Section 7. Har	ndling and	Storage				
7.1 Pi	recautions To Be Taker	Avoid breathing dust/fume/ga	as/mist/vapours	/spray.				
in	Handling:	Avoid prolonged or repeated	exposure.					
7.2 Pi	recautions To Be Taker	Keep container tightly closed	l.					
in	Storing:	Store in accordance with info	ormation listed c	on the product insert.				
					Multi-region forn			



3.1 Ex	posure Parameters:				
CAS #	Partial Chemical Na	ame	Britain EH40	France VL	Europe
77-86-	-1 Trizma base		No data.	No data.	No data.
7647-14	4-5 Sodium chloride		No data.	No data.	No data.
7447-4(0-7 Potassium chloride		No data.	No data.	No data.
7791-18	8-6 Magnesium chloride	, hexahydrate	No data.	No data.	No data.
NA	SIRT3 Direct Peptide	e	No data.	No data.	No data.
7732-18	8-5 Water		No data.	No data.	No data.
CAS #	Partial Chemical Na	ame	OSHA TWA	ACGIH TWA	Other Limits
77-86-	-1 Trizma base		No data.	No data.	No data.
7647-14	4-5 Sodium chloride		No data.	No data.	No data.
7447-4(No data.	No data.	No data.
7791-18	8-6 Magnesium chloride	, hexahydrate	No data.	No data.	No data.
NA		-	No data.	No data.	No data.
7732-18			No data.	No data.	No data.
3.2 Ex	posure Controls:				
Ey Pr Ot Re	rotective Gloves: C ther Protective Clothing:L espiratory Equipment N Specify Type):	Cafety glasses Compatible chemica ab coat IIOSH approved res	spirator, as conditions wa	arrant.	
Ey Pr Ot Re (S) Wa	ye Protection: S rotective Gloves: C ther Protective Clothing:L espiratory Equipment N Specify Type): Vork/Hygienic/Maintenan D e Practices: F	Safety glasses Compatible chemica ab coat IIOSH approved res	spirator, as conditions wa y. utilizing this material shou	arrant. uld be equipped with an eye	ewash facility and a safe
Ey Pr Ot Re (S) Wa	ye Protection: S rotective Gloves: C ther Protective Clothing: L espiratory Equipment N Specify Type): York/Hygienic/Maintenan D Practices: S V	Safety glasses Compatible chemica ab coat IIOSH approved res Do not take internally acilities storing or u hower.	spirator, as conditions wa y. utilizing this material shou		ewash facility and a safe
Ey Pr Ot Re (S) Wa	ye Protection: S rotective Gloves: C ther Protective Clothing: L espiratory Equipment N Specify Type): York/Hygienic/Maintenan D Practices: F S V	Safety glasses Compatible chemica ab coat IIOSH approved res Do not take internally facilities storing or u hower. Vash thoroughly after to data available.	spirator, as conditions wa y. utilizing this material shou	uld be equipped with an eye	ewash facility and a safe
Ey Pr Ot Re (S) Wa	ye Protection: S rotective Gloves: C ther Protective Clothing: L espiratory Equipment N Specify Type): York/Hygienic/Maintenan D Practices: F S V	Compatible chemica ab coat IIOSH approved res oo not take internally facilities storing or u hower. Vash thoroughly aft to data available. Ction 9. Phys	spirator, as conditions wa y. utilizing this material shou er handling. sical and Chemi	uld be equipped with an eye	ewash facility and a safe
Ey Pr Ot (Si Ce	ye Protection: S rotective Gloves: C ther Protective Clothing: L espiratory Equipment N Specify Type): York/Hygienic/Maintenan D Practices: F S V N Sec	Compatible chemica ab coat IIOSH approved res oo not take internally facilities storing or u hower. Vash thoroughly aft to data available. Ction 9. Phys cal and Chemical F	spirator, as conditions wa y. utilizing this material shou er handling. sical and Chemi	uld be equipped with an eye	ewash facility and a safe
Ey Pr Ot Re (S) Ce	ye Protection: S rotective Gloves: C ther Protective Clothing: L espiratory Equipment N Specify Type): /ork/Hygienic/Maintenan D e Practices: F S V N Sec formation on Basic Physic	Compatible chemical ab coat IIOSH approved res oo not take internally facilities storing or u hower. Vash thoroughly afte to data available. Ction 9. Physical and Chemical F [] Gas [Solution]	spirator, as conditions wa y. utilizing this material shou er handling. Sical and Chemi Properties	uld be equipped with an eye	ewash facility and a safe
Ey Pr Ot Re (S) Ce	ye Protection: S rotective Gloves: C ther Protective Clothing: L espiratory Equipment N Specify Type): York/Hygienic/Maintenan D Practices: F Sources: S V N Sec formation on Basic Physic hysical States: ppearance and Odor: H:	Compatible chemica ab coat IIOSH approved res oo not take internally facilities storing or u hower. Vash thoroughly aft to data available. Ction 9. Phys cal and Chemical F [] Gas [Solution 8.0	spirator, as conditions wa y. utilizing this material shou er handling. Sical and Chemi Properties	uld be equipped with an eye	ewash facility and a safe
Ey Pr Ot Re (S) Ce).1 Infe Ph Ap Ph Me	ye Protection: S rotective Gloves: C ther Protective Clothing: L espiratory Equipment M specify Type): fork/Hygienic/Maintenan D e Practices: F S V N Sec formation on Basic Physic hysical States: ppearance and Odor: H: elting Point:	Compatible chemical ab coat IIOSH approved res oo not take internally facilities storing or u hower. Vash thoroughly afte to data available. Ction 9. Phys cal and Chemical F [] Gas [Solution 8.0 No data.	spirator, as conditions wa y. utilizing this material shou er handling. Sical and Chemi Properties	uld be equipped with an eye	ewash facility and a safe
Ey Pr Ot Re (S) Wa ce D.1 Infa Ph Ap Ph Bo Bo	ye Protection: S rotective Gloves: C ther Protective Clothing: L espiratory Equipment N Specify Type): fork/Hygienic/Maintenan D e Practices: F Source formation on Basic Physic hysical States: ppearance and Odor: H: elting Point: oiling Point:	Compatible chemica ab coat IIOSH approved res oo not take internally facilities storing or u hower. Vash thoroughly aft to data available. Ction 9. Phys cal and Chemical F [] Gas [Solution 8.0 No data. No data.	spirator, as conditions wa y. utilizing this material shou er handling. Sical and Chemi Properties	uld be equipped with an eye	ewash facility and a safe
Ey Pr Ot Re (S) Wo Ce D.1 Info Ph Ap Ph Bo Bo Fla	ye Protection: S rotective Gloves: C ther Protective Clothing: L espiratory Equipment M Specify Type): fork/Hygienic/Maintenan D e Practices: F S V M Sec formation on Basic Physic hysical States: ppearance and Odor: H: elting Point: oiling Point: ash Pt:	Compatible chemical ab coat IIOSH approved rest of not take internally facilities storing or u hower. Vash thoroughly after to data available. Ction 9. Physical and Chemical F [] Gas [Solution 8.0 No data. No data. No data.	spirator, as conditions wa y. utilizing this material shou er handling. Sical and Chemi Properties	uld be equipped with an eye	ewash facility and a safe
Ey Pr Ot (S) (S) Ce 0.1 Inf Ce 0.1 Inf Ce Ph Ap Ph Bo Bo Fla Ev	ye Protection: S rotective Gloves: C ther Protective Clothing:L espiratory Equipment N Specify Type): /ork/Hygienic/Maintenan D e Practices: F S V N Sec formation on Basic Physic hysical States: ppearance and Odor: H: elting Point: oiling Point: ash Pt: vaporation Rate:	Compatible chemical ab coat IIOSH approved rest on not take internally facilities storing or u hower. Vash thoroughly aft to data available. Ction 9. Physical contention 19 Contention 19 Contention 10 Contention	spirator, as conditions way y. utilizing this material shou er handling. Sical and Chemi Properties [X] Liquid [] Solid	ald be equipped with an eye	ewash facility and a safe
Ey Pr Ot Re (S) Wo Ce 9.1 Info Ph Ap Ph Bo Bo Fla Ev Ex	ye Protection: S rotective Gloves: C ther Protective Clothing:L espiratory Equipment N Specify Type): York/Hygienic/Maintenan D e Practices: F S V N Sec formation on Basic Physic hysical States: ppearance and Odor: H: elting Point: oiling Point: ash Pt: vaporation Rate: xplosive Limits: apor Pressure (vs. Air or n	Compatible chemica ab coat IIOSH approved res oo not take internally facilities storing or u hower. Vash thoroughly aft to data available. Ction 9. Phys cal and Chemical F [] Gas [Solution 8.0 No data. No data. No data. No data. LEL: No data.	spirator, as conditions way y. utilizing this material shou er handling. Sical and Chemi Properties [X] Liquid [] Solid	uld be equipped with an eye	ewash facility and a safe
Ey Pr Ot Re (S) Wo ce 9.1 Info Ph Ap Ph Ap Ph Bo Bo Fia Ev Va Hg	ye Protection: S rotective Gloves: C ther Protective Clothing:L espiratory Equipment N Specify Type): York/Hygienic/Maintenan D e Practices: F S V N Sec formation on Basic Physic hysical States: ppearance and Odor: H: elting Point: oiling Point: ash Pt: vaporation Rate: xplosive Limits: apor Pressure (vs. Air or n	Compatible chemica ab coat IIOSH approved res oo not take internally facilities storing or u hower. Vash thoroughly aft to data available. Ction 9. Phys cal and Chemical F [] Gas [Solution 8.0 No data. No data. No data. No data. LEL: No data.	spirator, as conditions way y. utilizing this material shou er handling. Sical and Chemi Properties [X] Liquid [] Solid	ald be equipped with an eye	ewash facility and a safe



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	Specific Gravity (Water :							
	Solubility in Water:	No data.						
	Autoignition Pt:	No data.						
9.2	Other Information							
	Percent Volatile:	No data.						
		Section 10. Stability an	d Reacti	vity				
10.1	Reactivity:	No data available.						
10.2	Stability:	Unstable [] Stable [X]						
10.3	Stability Note(s):	Stable if stored in accordance with inform	mation listed of	on the product	insert.			
	Polymerization:	Will occur [] Will not occur [X]						
10.4	Conditions To Avoid:	No data available.						
10.5	Incompatibility - Materia	Is No data available.						
	To Avoid:							
10.6	Hazardous	No data available.						
	Decomposition Or							
	Byproducts:							
		Section 11. Toxicologica	al Informa	ation				
11.1	Information on	The toxicological effects of this product h	have not beer	n thoroughly st	tudied.			
	Toxicological Effects:							
Carci	nogenicity:	NTP? No IARC Monographs? No	OSHA Re	egulated? No				
CAS	# Hazardous Cor	nponents (Chemical Name)	NTP	IARC	ACGIH	OSHA		
77	7-86-1 Trizma base		n.a.	n.a.	n.a.	n.a.		
764	17-14-5 Sodium chloride	n.a. n.a. n.a. n.a.				n.a.		
744	Potassium chlor	de n.a. n.a. n.a. n.			n.a.			
779	91-18-6 Magnesium chlo	oride, hexahydrate	n.a.	n.a.	n.a.	n.a.		
	NA SIRT3 Direct Pe	ptide	otide n.a. n.a. n.a. n.a.			n.a.		
773	32-18-5 Water		n.a.	n.a.	n.a.	n.a.		
		Section 12. Ecological	Informat	ion				
12.1	Toxicity:	Avoid release into the environment.						
		Runoff from fire control or dilution water	may cause p	ollution.				
12.2	Persistence and	No data available.						
	Degradability:							
12.3	Bioaccumulative	No data available.						
	Potential:							
12.4	Mobility in Soil:	No data available.						
12.5	Results of PBT and vPvI	3 No data available.						
	assessment:							
12.6	Other adverse effects:	No data available.						
1								
1								



13.1

14.1

CAS #

CAS #

77-86-1

NA

77-86-1

7447-40-7

7791-18-6

NA

7732-18-5

Potassium chloride

SIRT3 Direct Peptide

Water

Magnesium chloride, hexahydrate

SAFETY DATA SHEET **SIRT3 Direct Peptide**

Revision: 04/01/2015 Supersedes Revision: 03/15/2010 Section 13. Disposal Considerations Waste Disposal Method: Dispose in accordance with local, state, and federal regulations. Section 14. Transport Information 14.1 LAND TRANSPORT (US DOT): DOT Proper Shipping Name: Not dangerous goods. **DOT Hazard Class:** UN/NA Number: 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. Regulatory Information EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists Hazardous Components (Chemical Name) S. 302 (EHS) S. 304 RQ S. 313 (TRI) Trizma base No No Yes-Cat. N106 7647-14-5 Sodium chloride No No No 7447-40-7 Potassium chloride No No No 7791-18-6 Magnesium chloride, hexahydrate No No No SIRT3 Direct Peptide No No No 7732-18-5 Water No No No Other US EPA or State Lists Hazardous Components (Chemical Name) Trizma base CAA HAP,ODC: HAP; CWA NPDES: No; TSCA: Yes -Inventory; CA PROP.65: No 7647-14-5 Sodium chloride CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes -Inventory; CA PROP.65: No

CAA HAP, ODC: No; CWA NPDES: No; TSCA: Yes -

CAA HAP, ODC: No; CWA NPDES: No; TSCA: No; CA

CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA

CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes -

Inventory; CA PROP.65: No

Inventory; CA PROP.65: No

PROP.65: No

PROP.65: No



	Supersedes Revision: 03/15/2010
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:	04/01/2015
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.



	HEMICAL		ling to Degulation (EQ) No. 100	7/2006 co or or other		Supersedes Revision: 03/15/2010				
			ling to Regulation (EC) No. 190							
			entification of the Substar	ice/iviixlure and of	the Company/Ur	iuertaking				
.1	Product Product		10012543 SIRT3 Direct NAD+							
.2	Relevan	t identified uses of t	he substance or mixture a	and uses advised a	gainst:					
	Releva	ant identified uses:	For research use only, ne	ot for human or vete	rinary use.					
.3	Details	of the Supplier of the	e Safety Data Sheet:							
	Comp	any Name:	Cayman Chemical Comp 1180 E. Ellsworth Rd. Ann Arbor, MI 48108	bany						
	Web s	ite address:	www.caymanchem.com							
	Inform	ation:	Cayman Chemical Comp	bany	+1 (734	4)971-3335				
1.4	Emerge	ncy telephone numb	er:							
	Emerg	ency Contact:	CHEMTREC Within USA			0)424-9300				
			CHEMTREC Outside US	A and Canada:	+1 (703	3)527-3887				
			Section 2. Ha	zards Identific	cation					
2.1	Classifi	cation of the Substa	nce or Mixture:							
2.1.1	Classif	cation according to	Regulation (EC) No 1272/2	2008 [CLP]:						
2.2		ements:								
2.2.1	Labeling according to Regulation (EC) No 1272/2008 [CLP]:									
	GHS S	ignal Word:	None							
	GHS I	lazard Phrases:								
	-	rases apply.								
		Precaution Phrases:								
	-	rases apply.								
		Response Phrases:								
	-	rases apply.								
		Storage and Disposa rases apply.	i rnrases:							
2.3			lay be harmful by inhalation	, indestion or skin a	absorption					
			lay be irritating to the muco	-	-	tract.				
			lay cause eye, skin, or resp							
		Т	he toxicological properties	of this product have	not been fully eval	luated.				
		Sectio	n 3. Composition	/Information	on Ingredie	nts				
CAS RTEC		Hazardous Compor REACH Registratio	nents (Chemical Name)/ n No.	Concentration	EC No./ EC Index No.	GHS Classification				
	-86-1	Trizma base		0.6 %	201-064-4	Skin Corr. 2: H315				
TY290	00000				NA	Eye Damage 2: H319 STOT (SE) 3: H335 H336				
7647 VZ472	7-14-5 25000	Sodium chloride		0.8 %	231-598-3 NA	No data available.				
7447 TS805	7-40-7 50000	Potassium chloride		0.02 %	231-211-8 NA	Acute Tox.(O) 5: H303 Aquatic (A) 3: H402				
779′	1-18-6	Magnesium chloride, he	exahydrate	0.02 %	NA	No data available.				
		1		1	1	1				



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OM29	75000				NA	
	-84-9 50000	NAD+		3.6 %	200-184-4 NA	No data available.
	2-18-5 10000	Water		94.96 %	231-791-2 NA	No data available.
		•		•		
			Section 4. Fi	rst Aid Mea	sures	
4.1	Descrir	tion of First Aid	No data available.			
-	Measur					
	In Case	of Inhalation:	Remove to fresh air. If not br Get immediate medical atten		cial respiration or gi	ve oxygen by trained personnel.
	In Case	of Skin Contact:	Immediately wash skin with s clothing. Get medical attention			5 minutes. Remove contaminated before reuse.
	In Case	of Eye Contact:	Hold eyelids apart and flush and tested by medical persor		f water for at least 1	5 minutes. Have eyes examined
	In Case	of Ingestion:	Wash out mouth with water p unconscious person. Get me medical personnel.	-	-	ive anything by mouth to an ng unless directed to do so by
			Section 5. Fire	Fighting M	easures	
5.1	Suitable Media:	e Extinguishing	Use alcohol-resistant foam, o Use water spray to cool fire-		-	l spray.
	Unsuita	able Extinguishing	A solid water stream may be	inefficient.		
	Media:					
5.2	Flamma Hazarda	-	d No data available.			
	Flash P	rt:	No data.			
	Explosi	ve Limits:	LEL: No data.	UEL: No	o data.	
	Autoigr	nition Pt:	No data.			
5.3	Fire Fig	hting Instructions	: As in any fire, wear self-cont	-		
			equivalent), and full protectiv	e gear to prevent	contact with skin ar	nd eyes.
			Section 6. Accider	ntal Release	e Measures	
6.1	Protect	ive Precautions,	Avoid raising and breathing	dust, and provide	adequate ventilatio	n.
	Protect	ive Equipment and	d As conditions warrant, wear	a NIOSH approve	ed self-contained br	eathing apparatus, or respirator,
	Emerge	ency Procedures:	and appropriate personal pr	otection (rubber b	oots, safety goggles	s, and heavy rubber gloves).
6.2	Enviror Precaut		Take steps to avoid release	into the environm	ent, if safe to do so	
6.3	Method	s and Material Fo	r Contain spill and collect, as	appropriate.		
	Contair	ment and Cleanir	gTransfer to a chemical wast	e container for dis	posal in accordance	e with local regulations.
	Up:					
			Section 7. Har	ndling and S	Storage	
7.1	Precau	tions To Be Taken	Avoid breathing dust/fume/ga	 as/mist/vapours/s	pray.	
	in Hanc	lling:	Avoid prolonged or repeated	l exposure.		
7.2	Precau	tions To Be Taken	Keep container tightly closed	d.		
	in Stori	ng:	Store in accordance with info	ormation listed on	the product insert.	
						Multi-region format



CAS	Exposu	re Parameters:	-			
	-	Partial Chemical Name		Britain EH40	France VL	Europe
77	-86-1	Trizma base		No data.	No data.	No data.
764	7-14-5	Sodium chloride		No data.	No data.	No data.
744	7-40-7	Potassium chloride		No data.	No data.	No data.
779	1-18-6	Magnesium chloride, he	ahydrate	No data.	No data.	No data.
53	-84-9	NAD+		No data.	No data.	No data.
773	2-18-5	Water		No data.	No data.	No data.
CAS #	#	Partial Chemical Name		OSHA TWA	ACGIH TWA	Other Limits
77	-86-1	Trizma base		No data.	No data.	No data.
764	7-14-5	Sodium chloride		No data.	No data.	No data.
744	7-40-7	Potassium chloride		No data.	No data.	No data.
779	1-18-6	Magnesium chloride, he	ahydrate	No data.	No data.	No data.
53	-84-9	NAD+	· · · · · · · · · · · · · · · · · · ·	No data.	No data.	No data.
773	2-18-5	Water		No data.	No data.	No data.
3.2	Exposu	ire Controls:		ł	ļ	Į
	Work/F ce Prac	show Wash	ties storing or ut er. thoroughly afte	tilizing this material she	ould be equipped with a	an eyewash facility and a safe
		No da	ata available.			
		Sectio	n 9. Phys	ical and Chem	nical Properties	;
		tion on Basic Physical a		-		
9.1	Physic	al States:	[]Gas []	X] Liquid [] Solic	4	
9.1	-				^	
9.1		rance and Odor:	Solution		-	
9.1	pH:		Solution 8.0		-	
9.1	pH: Melting	g Point:	Solution 8.0 No data.		-	
9.1	pH: Melting Boiling) Point: Point:	Solution 8.0		-	
9.1	pH: Melting Boiling Flash F) Point: Point:	Solution 8.0 No data. No data.		-	
9.1	pH: Melting Boiling Flash F Evapor	y Point: Point: Pt:	Solution 8.0 No data. No data. No data.	L.	UEL: No data.	
9.1	pH: Melting Boiling Flash F Evapor Explos	g Point: Point: Pt: ration Rate:	Solution 8.0 No data. No data. No data. No data.	l.		
9.1	pH: Melting Boiling Flash F Evapor Explos Vapor I Hg):	y Point: Point: Pt: ration Rate: ive Limits:	Solution 8.0 No data. No data. No data. No data. LEL: No data	l.		
9.1	pH: Melting Boiling Flash F Evapor Explos Vapor I Hg):	g Point: Point: Pt: ration Rate: ive Limits: Pressure (vs. Air or mm	Solution 8.0 No data. No data. No data. LEL: No data No data.	L.		Multi-region fo



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	Specific Gravity (W	,	No d						
	Solubility in Water:		No d						
	Autoignition Pt:		No d	ata.					
9.2	Other Information								
	Percent Volatile:		No d	ata.					
			Secti	on 10. Si	tability and	l Reacti	vity		
10.1	Reactivity:	No	data ava	ilable.					
10.2	Stability:	Uns	stable [] Stable [X]				
10.3	Stability Note(s):	Sta	able if stor	red in accorda	ance with inform	ation listed	on the product	insert.	
	Polymerization:	Wil	ll occur [] Will not	t occur [X]				
10.4	Conditions To Avo	id: No	data ava	ilable.					
10.5	Incompatibility - Ma	aterials No	data ava	ilable.					
	To Avoid:								
10.6	Hazardous	No	data ava	ilable.					
	Decomposition Or								
	Byproducts:								
		0	Sectio	n 11. To	xicological	Informa	ation		
11.1	Information on	The	e toxicolo	gical effects c	of this product ha	ave not beer	n thoroughly st	udied.	
	Toxicological Effec	sts:							
Carci	nogenicity:	NT	P? No	IARC Mon	ographs? No	OSHA R	egulated? No		
CAS	# Hazardou	s Compon	ents (Ch	emical Name	.)	NTP	IARC	ACGIH	OSHA
77	7-86-1 Trizma bas	se				n.a.	n.a.	n.a.	n.a.
764	7-14-5 Sodium ch	loride	n.a. n.a. n.a. n.a.						n.a.
744	7-40-7 Potassium	chloride	de n.a. n.a. n.a. n.a.				n.a.		
779	1-18-6 Magnesiur	n chloride,	hexahydr	ate		n.a.	n.a.	n.a.	n.a.
53	3-84-9 NAD+					n.a.	n.a.	n.a.	n.a.
773	32-18-5 Water					n.a.	n.a.	n.a.	n.a.
			Secti	ion 12. E	cological I	nformat	ion	•	
12.1	Toxicity:	Avo	oid releas	e into the env	vironment.				
	-	Ru	noff from	fire control or	dilution water m	nay cause p	ollution.		
12.2	Persistence and	No	data ava	ilable.					
	Degradability:								
12.3	Bioaccumulative	No	data ava	ilable.					
	Potential:								
12.4	Mobility in Soil:	No	data ava	ilable.					
12.5	Results of PBT and	I vPvB No	data ava	ilable.					
	assessment:								
12.6	Other adverse effect	cts: No	data ava	ilable.					



	Section 13. Dispo			
13.1 Waste	Disposal Method: Dispose in accordance with lo	ocal, state, and federa	al regulations.	
	Section 14. Tra	Insport Inform	ation	
14.1 LAND	TRANSPORT (US DOT):			
DOT Prop	er Shipping Name: Not dangerous goods.			
DOT Haza	rd Class:			
UN/NA Nu	imber:			
	TRANSPORT (European ADR/RID):			
	Shipping Name: Not dangerous goods.			
UN Numb				
Hazard Cl				
	ANSPORT (ICAO/IATA): A Shipping Name: Not dangerous goods.			
Additional Tra		local state and fede	eral regulations	
Information:		1000, 51010, and 1600		
	Section 15. Reg	ulatory Inform	ation	
		•		
EPA SARA (S CAS #	uperfund Amendments and Reauthorization Ad Hazardous Components (Chemical Name)		S. 304 RQ	6 212 (TDI)
77-86-1	Trizma base	S. 302 (EHS)	No	S. 313 (TRI) Yes-Cat. N106
7647-14-5	Sodium chloride	No	No	No
7447-40-7	Potassium chloride	No	No	No
7791-18-6	Magnesium chloride, hexahydrate	No	No	No
53-84-9	NAD+	No	No	No
7732-18-5	Water	No	No	No
CAS #	Hazardous Components (Chemical Name)	Other US EPA o		
77-86-1	Trizma base	CAA HAP,ODC: Inventory; CA P		S: No; TSCA: Yes -
7647-14-5	Sodium chloride			: No; TSCA: Yes -
		Inventory; CA P		
7447-40-7	Potassium chloride	CAA HAP,ODC:	No; CWA NPDES	: No; TSCA: Yes -
		Inventory; CA P	PROP.65: No	
7791-18-6	Magnesium chloride, hexahydrate		No; CWA NPDES	: No; TSCA: No; CA
50.04.0		PROP.65: No		
	NAD+		ROP.65: No	: No; TSCA: Yes -
53-84-9		I Inventory. CAP		
7732-18-5	Water	•		: No; TSCA: Yes -



	Supersedes Revision: 03/15/2010
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:	04/01/2015
Additional Information About This Product:	No data available.
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.



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					S	Supersedes Revision: 03/15/2010
		acco	rding to Regulation (EC) No. 190	7/2006 as amended b	oy (EC) No. 1272/200	08
		Section 1. Id	dentification of the Substar	nce/Mixture and of	f the Company/U	ndertaking
1.1	Produc	t Code:	10012544			
	Produc	t Name:	SIRT3 Direct Nicotinamic	le		
.2	Relevar	nt identified uses of	the substance or mixture a	and uses advised a	against:	
	Relev	ant identified uses:	For research use only, no	ot for human or vete	erinary use.	
1.3	Details	of the Supplier of the	ne Safety Data Sheet:			
	-	any Name:	Cayman Chemical Comp 1180 E. Ellsworth Rd. Ann Arbor, MI 48108	pany		
		site address:	www.caymanchem.com			
	Inforn	nation:	Cayman Chemical Comp	pany	+1 (734	4)971-3335
1.4	-	ency telephone num				
	Emerg	gency Contact:	CHEMTREC Within USA			0)424-9300
			CHEMTREC Outside US	A and Canada:	+1 (70	3)527-3887
			Section 2. Haz	zards Identifi	cation	
2.1	Classifi	cation of the Subst	ance or Mixture:			
2.1.1	Classif	ication according to	o Regulation (EC) No 1272/2	2008 [CLP]:		
2.2	Label E	lements:				
2.2.1	Labelir	ng according to Reg	ulation (EC) No 1272/2008	[CLP]:		
	GHS S	Signal Word:	None			
		Hazard Phrases:				
			rently available data this sub	stance or mixture is	not classifiable ac	cording to GHS.
		Precaution Phrases	:			
	-	rases apply.				
		Response Phrases:				
	•	rases apply. Storage and Dispos	al Phrasos			
			or Storage and Section 13 for	Disposal information	an	
2.3			Material may be irritating to the	-		spiratory tract
			May be harmful by inhalation			
		<i>,</i> ,	May cause eye, skin, or resp		•	
			To the best of our knowledge	e, the toxicological p	properties have not	been thoroughly investigated.
		Secti	on 3. Composition	/Information	on Ingredie	nts
CAS RTE(Hazardous Compo REACH Registrati	onents (Chemical Name)/ on No.	Concentration	EC No./ EC Index No.	GHS Classification
	-86-1 00000	Trizma base		0.6 %	201-064-4 NA	Skin Corr. 2: H315 Eye Damage 2: H319 STOT (SE) 3: H335 H336
-	7-14-5 25000	Sodium chloride		0.8 %	231-598-3 NA	No data available.
		1			004 044 0	1
	7-40-7 50000	Potassium chloride		0.02 %	231-211-8 NA	Acute Tox.(O) 5: H303 Aquatic (A) 3: H402



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						Supersedes Revision: 03/15/2010		
OM29	75000				NA			
	-92-0 75000	Nicotinamide		0.61 %	202-713-4 NA	Eye Damage 2: H319		
	2-18-5 10000	Water		97.95 %	231-791-2 NA	No data available.		
		•		•	+	+		
			Contine 4 Fi					
			Section 4. Fi	rst Ald Measu	ures			
4.1	Descrip Measur	otion of First Aid es:	No data available.					
	In Case	of Inhalation:	Remove to fresh air. If not bre Get immediate medical attent		l respiration or gi	ve oxygen by trained personnel.		
	In Case	of Skin Contact:	Immediately wash skin with se clothing. Get medical attention			5 minutes. Remove contaminated before reuse.		
	In Case	of Eye Contact:	Hold eyelids apart and flush e and tested by medical person		ater for at least 1	5 minutes. Have eyes examined		
	In Case	of Ingestion:	Hold eyelids apart and flush e and tested by medical person		ater for at least 1	5 minutes. Have eyes examined		
			Section 5. Fire	Fighting Mea	asures			
5.1	Suitable Media:	e Extinguishing	Use alcohol-resistant foam, c Use water spray to cool fire-e		r, or dry chemica	l spray.		
	Unsuita Media:	able Extinguishing	A solid water stream may be	inefficient.				
5.2	Flamma Hazarda	able Properties and s:	d No data available.					
	Flash P		No data.					
	Explosi	ve Limits:	LEL: No data.	: No data. UEL: No data.				
	Autoigr	nition Pt:	No data.					
5.3	Fire Fig	hting Instructions	As in any fire, wear self-conta equivalent), and full protective		-			
			Section 6. Acciden	tal Release N	Measures			
6.1	Protect	ive Precautions, ive Equipment and ency Procedures:	Avoid raising and breathing of Avoid raising and breathing of As conditions warrant, wear and appropriate personal pro	a NIOSH approved	self-contained br	eathing apparatus, or respirator,		
6.2	Enviror Precaut	nmental	Take steps to avoid release	into the environment	t, if safe to do so			
6.3			Contain spill and collect, as a	appropriate.				
			gTransfer to a chemical waste		sal in accordance	e with local regulations.		
			Section 7. Har	dling and Sto	orage			
∟ 7.1	Precaut	tions To Re Taken	Avoid breathing dust/fume/ga	•	•			
	in Hanc		Avoid prolonged or repeated		y.			
7.2			Keep container tightly closed					
	in Stori		Store in accordance with info		e product insert.			
						Multi-region format		



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Section 8. Exposure Controls/Personal Protection 8.1 **Exposure Parameters:** CAS # **Partial Chemical Name Britain EH40** France VL Europe No data. 77-86-1 Trizma base No data. No data. 7647-14-5 No data. No data. No data. Sodium chloride 7447-40-7 Potassium chloride No data. No data. No data. 7791-18-6 No data. No data. No data. Magnesium chloride, hexahydrate No data. No data. 98-92-0 Nicotinamide No data. Water No data. No data. No data. 7732-18-5 CAS # **Partial Chemical Name Other Limits OSHA TWA ACGIH TWA** 77-86-1 Trizma base No data. No data. No data. 7647-14-5 Sodium chloride No data. No data. No data. 7447-40-7 No data. No data. No data. Potassium chloride 7791-18-6 Magnesium chloride, hexahydrate No data. No data. No data. 98-92-0 Nicotinamide No data. No data. No data. 7732-18-5 Water No data. No data. No data. 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. 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 9.1 Information on Basic Physical and Chemical Properties **Physical States:** []Gas [X] Liquid [] Solid Appearance and Odor: Solution pH: 8.0 **Melting Point:** No data. **Boiling Point:** No data. Flash Pt: No data. Evaporation Rate: No data. LEL: No data. UEL: No data. **Explosive Limits:** Vapor Pressure (vs. Air or mm No data. Hq): Vapor Density (vs. Air = 1): No data.



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	Specific G	ravity (Water =	1): No data.					
	Solubility i	in Water:	No data.					
	Autoignitio	on Pt:	No data.					
9.2	Other Infor	mation						
	Percent Vo	platile:	No data.					
			Section 10. Stability and	Reactiv	ity			
10.1	Reactivity:		No data available.					
10.2	Stability:		Unstable [] Stable [X]					
10.3	Stability N	ote(s):	Stable if stored in accordance with information	ation listed or	n the product i	nsert.		
	Polymeriza	ation:	Will occur [] Will not occur [X]					
10.4	Conditions	s To Avoid:	No data available.					
10.5	Incompatil	oility - Materials	No data available.					
	To Avoid:							
10.6	Hazardous	5	No data available.					
	Decompos	ition Or						
	Byproduct	S:						
			Section 11. Toxicological	Informa	tion			
11.1	Informatio	n on	The toxicological effects of this product ha	ive not been	thoroughly stu	udied.		
	Toxicologi	cal Effects:	Nicotinamide - Toxicity: Subcutaneous LE	050 (rat): 168	0 mg/kg;			
	Chronic To	oxicological	Nicotinamide - Investigated as a mutagen.					
	Effects:		Only select Registry of Toxic Effects of Ch		tances (RTEC	CS) data is pre	sented here.	
			See actual entry in RTECS for complete in					
			Nicotinamide RTECS Number: QS367500					
	nogenicity:		NTP? No IARC Monographs? No		julated? No			
CAS			ponents (Chemical Name)	NTP	IARC	ACGIH	OSHA	
		rizma base		n.a.	n.a.	n.a.	n.a.	
		odium chloride		n.a.	n.a.	n.a.	n.a.	
		otassium chloric		n.a.	n.a.	n.a.	n.a.	
		•	ide, hexahydrate	n.a.	n.a.	n.a.	n.a.	
L		licotinamide		n.a.	n.a.	n.a.	n.a.	
773	32-18-5 V	Vater		n.a.	n.a.	n.a.	n.a.	
			Section 12. Ecological I	nformatio	on			
12.1	Toxicity:		Avoid release into the environment.					
			Runoff from fire control or dilution water m	ay cause po	lution.			
12.2	2.2 Persistence and No data available.							
	Degradabi	lity:						
12.3	Degradabi Bioaccum	-	No data available.					
12.3	-	-	No data available.					
12.3 12.4	Bioaccum	ulative	No data available. No data available.					
	Bioaccum Potential: Mobility in	Soil:						
12.4	Bioaccum Potential: Mobility in	Soil: PBT and vPvB	No data available.					
12.4	Bioaccum Potential: Mobility in Results of assessme	Soil: PBT and vPvB	No data available.					
12.4 12.5	Bioaccum Potential: Mobility in Results of assessme	ulative Soil: PBT and vPvB nt:	No data available. No data available.					



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	Section 13. Dispo	sal Consider	ations			
13.1 Waste	Disposal Method: Dispose in accordance with log	cal, state, and federa	al regulations.			
Section 14. Transport Information						
14.1 LAND	TRANSPORT (US DOT):					
DOT Proper Shipping Name: Not dangerous goods.						
DOT Haza	rd Class:					
UN/NA Nu	imber:					
14.1 LAND	TRANSPORT (European ADR/RID):					
	Shipping Name: Not dangerous goods.					
UN Numb						
Hazard Cl						
	ANSPORT (ICAO/IATA): A Shipping Name: Not dangerous goods.					
Additional Tra		local state and fede	aral regulations			
Information:						
	Section 15. Regu	latory Inform	ation			
	· · · · · · · · · · · · · · · · · · ·	•				
•	uperfund Amendments and Reauthorization Act		S 204 DO			
CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI) Yes-Cat. N106		
7647-14-5	Sodium chloride	No	No	No		
7447-40-7	Potassium chloride	No	No	No		
7791-18-6	Magnesium chloride, hexahydrate	No	No	No		
98-92-0	Nicotinamide	No	No	Yes-Cat. N503		
7732-18-5	Water	No	No	No		
CAS #	Hazardous Components (Chemical Name)	Other US EPA o				
77-86-1	Trizma base	Inventory; CA P		S: No; TSCA: Yes -		
7647-14-5	Sodium chloride	-	No; CWA NPDES	: No: TSCA: Yes -		
		Inventory; CA P				
7447-40-7	Potassium chloride		No; CWA NPDES	: No; TSCA: Yes -		
		Inventory; CA P				
7791-18-6	Magnesium chloride, hexahydrate	CAA HAP,ODC: PROP.65: No	No; CWA NPDES	: No; TSCA: No; CA		
98-92-0						
	-5 Water CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No					



Revision: 04/01/2015

Cayman	Supersedes Revision: 03/15/2010				
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: 04/01/2015					
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: 04/01/2015 Supersedes Revision: 03/15/2010

	CHEMICAL		Supersedes Revision: 03/15/2010
	acco	ording to Regulation (EC) No. 1907/2006 as amended by	(EC) No. 1272/2008
	Section 1.	dentification of the Substance/Mixture and of the	ne Company/Undertaking
1.1	Product Code: Product Name:	10012545 SIRT3 Direct Developer	
.2	Relevant identified uses o	f the substance or mixture and uses advised ag	ainst:
	Relevant identified uses:	For research use only, not for human or veterin	nary use.
.3	Details of the Supplier of t	he 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
1.4	Emergency telephone nun	nber:	
	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
2.1	Classification of the Subst	ance or Mixture:	
2.2 2.2.1	Label Elements:	oxicity (single exposure), Category 3 gulation (EC) No 1272/2008 [CLP]:	
	GHS Signal Word:	Danger	
	GHS Hazard Phrases:	Danger	
	H315: Causes skin irritatio	n.	
	H319: Causes serious eye	e irritation.	
	H334: May cause allergy	or asthma symptoms or breathing difficulties if inhal	ed.
	H335: May cause respirat	ory irritation.	
	GHS Precaution Phrases	8:	
	P261: Avoid breathing {du	st/fume/gas/mist/vapors/spray}.	
	P264: Wash {hands} thore	bughly after handling.	
		oves/protective clothing/eye protection/face protecti	on}.
		te ventilation wear respiratory protection.	
	GHS Response Phrases		
		Vash with plenty of soap and water.	
		Remove victim to fresh air and keep at rest in a pos	-
	-	ult, remove to fresh air and keep at rest in a positior ES: Rinse cautiously with water for several minutes.	-
	to do. Continue rinsing.	Thise obtained by with water for Several Hill/Ules.	. Remove contact lenses, it present and easy
	Ũ		



P312: Call a POISON CENTER or doctor/physician if you feel unwell. P332+313: If skin irritation occurs, get medical advice/attention. Revision: 04/01/2015 Supersedes Revision: 03/15/2010

P337+313: If eye irritation persists, get medical advice/attention. P342+311: If experiencing respiratory symptoms call a POISON CENTER or doctor/physician. P362: Take off contaminated clothing and wash before re-use. **GHS Storage and Disposal Phrases:** Please refer to Section 7 for Storage and Section 13 for Disposal information. 2.3 Adverse Human Health Causes eye and serious skin irritation. Material 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 allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory system irritation. To the best of our knowledge, the toxicological properties have not been thoroughly investigated. Section 3. Composition/Information on Ingredients CAS#/ Hazardous Components (Chemical Name)/ Concentration EC No./ **GHS Classification RTECS #** EC Index No. **REACH Registration No.** NA SIRT3 Direct Developer 100.0 % NA Skin Corr. 2: H315 NA NA Eye Damage 2: H319 Resp. Sens. 1: H334 STOT (SE) 3: H335 H336 Section 4. First Aid Measures 4.1 **Description of First Aid** No data available. 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. Wash out mouth with water provided person is conscious. Never give anything by mouth to an In Case of Ingestion: 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. Use water spray to cool fire-exposed containers. Media: Unsuitable Extinguishing A solid water stream may be inefficient. Media: 5.2 Flammable Properties and No data available. Hazards: 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.



Revision: 04/01/2015

	A MARKEN				Supersedes Re	vision: 03/15/2010		
			Section 6. Ac	cidental Release Me	easures			
6.1	Protecti	ve Precautions,	Avoid raising and bre	athing dust, and provide adeq	uate ventilation.			
	Protecti	ve Equipment an	d As conditions warran	t, wear a NIOSH approved sel	f-contained breathing appara	atus, or respirator,		
	Emerge	ncy Procedures:	and appropriate pers	onal protection (rubber boots,	safety goggles, and heavy ru	ubber gloves).		
6.2	Environ	mental	Take steps to avoid r	elease into the environment, if	safe to do so.			
	Precaut	ions:						
6.3			r Contain spill and coll					
		ment and Cleanir	ngTransfer to a chemic	al waste container for disposal	in accordance with local reg	gulations.		
	Up:							
			Section 7.	Handling and Stor	age			
7.1	Precaut	ions To Be Taken	Avoid breathing dust/	fume/gas/mist/vapours/spray.				
	in Hand	ling:	Avoid prolonged or re	peated exposure.				
7.2	Precaut	ions To Be Taken	Keep container tightly	v closed.				
	in Storii	ng:	Store in accordance v	with information listed on the p	roduct insert.			
		Sec	tion 8. Exposu	re Controls/Persona	al Protection			
8.1	Exposur	e Parameters:	•					
CAS	#	Partial Chemical	l Name	Britain EH40	France VL	Europe		
	NA	SIRT3 Direct Dev	veloper	No data.	No data.	No data.		
CAS	#	Partial Chemical	Name	OSHA TWA	ACGIH TWA	Other Limits		
	NA	SIRT3 Direct Dev	veloper	No data.	No data.	No data.		
8.2	Exposur	e Controls:			ł	ł		
8.2.1	Enginee	ering Controls	Use process enclosu	res, local exhaust ventilation, c	or other engineering controls	to control airborne		
	(Ventila	tion etc.):	levels below recomme	ended exposure limits.				
8.2.2	Persona	al protection equi	pment:					
	Eye Pro	tection:	Safety glasses	Safety glasses				
	Protecti	ve Gloves:	Compatible chemical-	resistant gloves				
	Other P	rotective Clothing	g:Lab coat					
	-	tory Equipment	NIOSH approved resp	pirator, as conditions warrant.				
	(Specify							
	-	-	n Do not take internally					
	ce Pract	tices:	Facilities storing or ut shower.	ilizing this material should be e	equipped with an eyewash ta	acility and a safety		
			Wash thoroughly afte	r handling				
			No data available.	r Harlaning.				



							Su	persedes Revis	ion: 03/15/2010
		Se	ectio	n 9. Physical and	Chem	nical Pr	operties		
ə.1	Informat			d Chemical Properties					
	Physica	l States:		[]Gas []Liquid	[X] Solic	I			
	Appeara	ince and Odor:		A powder					
	Melting	Point:		No data.					
	Boiling	Point:		No data.					
	Flash Pt	:		No data.					
	Evapora	tion Rate:		No data.					
	Explosiv	/e Limits:		LEL: No data.		UEL: No	data.		
	Vapor P	ressure (vs. Air o	r mm	No data.					
	Hg):								
	Vapor D	ensity (vs. Air = 1):	No data.					
	Specific	Gravity (Water =	1):	No data.					
	Solubilit	y in Water:		No data.					
	Autoign	ition Pt:		No data.					
.2	Other Inf	ormation							
	Percent	Volatile:		No data.					
				action 10 Stabilit		Deestin	<i>.</i> :		
				ection 10. Stabilit	y and	Reactiv	vity		
0.1	Reactivi	-		a available.					
0.2	Stability			ole [] Stable [X]					
0.3	-	Note(s):		if stored in accordance with		ion listed c	on the product	insert.	
	Polymer			cur [] Will not occur [[X]				
0.4		ons To Avoid:	-	t from light and moisture					
0.5	-	atibility - Materials	s strong	oxidizing agents					
	To Avoi								
0.6	Hazardo		No dat	a available.					
	=	osition Or							
	Byprodu	icts:							
			Se	ction 11. Toxicolo	ogical I	nforma	ation		
1.1	Informat	tion on	The to	xicological effects of this pr	oduct hav	e not been	thoroughly st	udied.	
	Toxicolo	ogical Effects:							
CAS	#	Hazardous Com	ponent	s (Chemical Name)		NTP	IARC	ACGIH	OSHA
	NA	SIRT3 Direct Dev	eloper			n.a.	n.a.	n.a.	n.a.
		ļ	5	Section 12. Ecolog	nical In	formati	ion	!	!
2.1	Toxicity			release into the environmer					
2.1	TOXICITY	•		from fire control or dilution		v cause po	ollution.		
2.2	Persiste	nce and		a available.) on a co p (
2.2	Degrada		NO Udi	น นขนแนมเธ.					
~	-	mulative	No def	a available.					
2.3	Potentia		IND UAI	a avaliadie.					
. .			N = -1-4	a ovelleble					
2.4	Mobility			a available.					
2.5		of PBT and vPvB	No dat	ta available.					
	assessn								
2.6	Other ac	verse effects:	No dat	ta available.					
								Ν	Iulti-region for



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CHIMICAI	L			•	ersedes Revision: 03/15/2010
		Section 13. Dispos	sal Considera	tions	
13.1 Waste	Disposal Method:	Dispose in accordance with loca	al, state, and federal	regulations.	
		Section 14. Tran	sport Informa	tion	
14.1 LAND	TRANSPORT (US	DOT):			
DOT Prop	per Shipping Name	Not dangerous goods.			
	ard Class:				
UN/NA N					
	TRANSPORT (Eur				
ADR/RID UN Numb	Shipping Name:	Not dangerous goods.			
Hazard C					
	RANSPORT (ICAO)	/ΙΔΤΔ):			
	A Shipping Name:	•			
Additional Tr		Transport in accordance with lo	cal, state, and federa	al regulations.	
Information:			, ,		
		Section 15. Regu	latory Informa	tion	
EPA SARA (S	Superfund Amendr	nents and Reauthorization Act	of 1986) Lists		
CAS #	Hazardous Com	nponents (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
NA	SIRT3 Direct De	veloper	No	No	No
CAS #	Hazardous Com	nponents (Chemical Name)	Other US EPA or	State Lists	
NA	SIRT3 Direct De	veloper	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No		
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	9:	04/01/2015			
Additional Inf	ormation About	No data available.			
This Product:	:				
Company Pol	licy 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 to such information,	anty of merchanta and we assume r	bility or any other warrant to liability resulting from its
					Multi-region for



Cay	man	SIRT3 Direct Fluorophore	Revision: 04/01/2015 Supersedes Revision: 03/15/2010
	accord	ling to Regulation (EC) No. 1907/2006 as amended by (EC) No.	o. 1272/2008
	Section 1. Ide	entification of the Substance/Mixture and of the Cor	mpany/Undertaking
1.1	Product Code: Product Name:	10012546 SIRT3 Direct Fluorophore	
1.2	Relevant identified uses of t	he substance or mixture and uses advised against:	
	Relevant identified uses:	For research use only, not for human or veterinary us	se.
1.3	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
1.4	Emergency telephone numb	er:	
	Emergency Contact:	CHEMTREC Within USA and Canada:	+1 (800)424-9300
		CHEMTREC Outside USA and Canada:	+1 (703)527-3887
		Section 2. Hazards Identification	 ו
2.2 2.2.1	Serious Eye Damage/Eye I Label Elements: Labeling according to Regu	lation (EC) No 1272/2008 [CLP]:	
	GHS Signal Word:	Warning	
	GHS Hazard Phrases:	C C	
	H227: Combustible liquid. H315: Causes skin irritation.		
	H319: Causes serious eye in	ritation.	
	GHS Precaution Phrases:		
	P264: Wash {hands} thoroug		
		es/protective clothing/eye protection/face protection}.	
		sh with plenty of soap and water. : Rinse cautiously with water for several minutes. Remo	ove contact lenses, if present and easy
	to do. Continue rinsing.		
		ccurs, get medical advice/attention.	
		ersists, get medical advice/attention.	
		d clothing and wash before re-use.	
	GHS Storage and Disposa	Storage and Section 13 for Disposal information.	
		Storage and Section 13 for Disposal Information.	



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2.3 Adverse Human Health Causes skin and serious eye irritation.
 Effects and Symptoms: DMSO has the potential to carry toxic materials or materials of unknown toxicity into the body. DMSO is readily absorbed through skin.
 Material may be irritating to the mucous membranes and upper respiratory tract.
 May be harmful by inhalation, ingestion, or skin absorption.
 May cause respiratory system irritation.
 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
26093-31-2 NA	7-Amino-4-methylcoumarin	0.18 %	247-454-8 NA	Skin Corr. 2: H315 Eye Damage 2: H319 STOT (SE) 3: H335 H336
67-68-5 PV6210000	Dimethyl sulfoxide, anhydrous	99.82 %	200-664-3 NA	Flam. Liq. 4: H227 Eye Damage 2A: H319 Skin Corr. 2: H315

		Section 4. First Aid Measures					
4.1	Description of First Aid	No data available.					
	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 contaminate					
		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.					
4.2	Important Symptoms and	Exposure may cause: hematuria or shortness of breath (dyspnea).					
	Effects, Both Acute and	Exposure may cause: gastrointestinal irritation with nausea, vomiting, diarrhea, headache,					
	Delayed:	dizziness, and drowsiness.					
		Eye contact may cause blurry vision, burning sensation, redness, tearing, and vasodilation.					
		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 keep fire-exposed containers cool.					
	Unsuitable Extinguishing	A solid water stream may be inefficient.					
	Media:						
5.2	Flammable Properties an	dCan release vapors that form explosive mixtures at temperatures at or above the flashpoint.					
	Hazards:	Container explosion may occur under fire conditions.					
		Emits toxic fumes under fire conditions.					
		Sensitive to static discharge.					
	Flash Pt:	89.00 C Method Used: Closed Cup					
	Explosive Limits:	LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C					
	Autoignition Pt:	215.00 C					



	HEMICAL		oquivalant_cad full -	viotoptivo aporto provente	·	evision: 03/15/2010	
				protective gear to prevent conta s diluted in dimethyl sulfoxide	acı with skin and eyes.		
			Section 6. Ac	cidental Release M	easures		
.1 .2 .3	Protective Precautions,Avoid breathing vapors and providProtective Equipment andAs conditions warrant, wear a NICEmergency Procedures:and appropriate personal protectionEnvironmentalTake steps to avoid release into thePrecautions:Contain spill and collect, as approxMethods and Material ForContain spill and collect, as approxContainment and CleaningTransfer to a chemical waste control			nt, wear a NIOSH approved se conal protection (rubber boots, release into the environment, i lect, as appropriate.	f-contained breathing appar safety goggles, and heavy r f safe to do so.	ubber gloves).	
	Up:						
			Section 7.	Handling and Stor	age		
.1 .2	in Hand Precaut in Storii	ling: ions To Be Taken	Avoid prolonged or re Keep away from sour Take precautionary m Keep away from heat Keep container tightly	rces of ignition. neasures against static dischar t, sparks and flame.	-		
				re Controls/Person	al Protection		
5.1	Exposur	e Parameters:					
CAS	#	Partial Chemical	Name	Britain EH40	France VL	Europe	
2609	93-31-2	7-Amino-4-methyl	coumarin	No data.	No data.	No data.	
67	-68-5	Dimethyl sulfoxide	e, anhydrous	No data.	No data.	No data.	
CAS	#	Partial Chemical	Name	OSHA TWA	ACGIH TWA	Other Limits	
2609	93-31-2	7-Amino-4-methyl	coumarin	No data.	No data.	No data.	
67	-68-5	Dimethyl sulfoxide	e, anhydrous	No data.	No data.	No data.	
3.2	Exposu	e Controls:		•	•	•	
8.2.1	Enginee	ering Controls	Use process enclosu	res, local exhaust ventilation, o	or other engineering controls	to control airborn	
	(Ventila	tion etc.):	levels below recomm	ended exposure limits.			
.2.2	Persona	Personal protection equipment:					
	Eye Pro	tection:	Safety glasses				
	Protecti	otective Gloves: Compatible chemcial-resistant gloves					
	Other P	rotective Clothing					
	-	spiratory Equipment NIOSH approved respirator, as conditions warrant.					
		ify Type):					
	Work/H	Hygienic/Maintenan Do not take internally ctices: Facilities storing or u shower. Wash thoroughly after		ilizing this material should be	equipped with an eyewash fa	acility and a safet	
			No data available.				
						Multi-region forr	



	THE MICAL	Supersedes Revision: 03/15/2010			
	S	Section 9. Physical and Chemical Properties			
9.1	Information on Basic Physical and Chemical Properties				
	Physical States:	[]Gas [X]Liquid []Solid			
	Appearance and Odor:	Solution			
	Melting Point:	No data.			
	Boiling Point:	No data.			
	Flash Pt:	89.00 C Method Used: Closed Cup			
	Evaporation Rate:	No data.			
	Explosive Limits:	LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C			
	Vapor Pressure (vs. Air	or mm 0.37 MM_HG at 20.0 C			
	Hg):				
	Vapor Density (vs. Air =				
	Specific Gravity (Water =	= 1): No data.			
	Solubility in Water:	No data.			
	Autoignition Pt:	215.00 C			
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):				
		Decomposition Or			
		Byproducts:			
		Polymerization: Will occur [] Will not occur [X]			
		Stability Note(s):			
	Polymerization:	Will occur [] Will not occur [X]			
10.4	Conditions To Avoid:	heat, flames and sparks			
10.5	Incompatibility - Materia	Is acid chlorides			
	To Avoid:	phosphorus halides			
		strong acids			
		alkali metals			
		strong oxidizing agents			
		strong reducing agents			
10.6	Hazardous	carbon monoxide			
	Decomposition Or	carbon dioxide			
	Byproducts:	sulfur oxides			



Multi-region format

11.1								
11.1			Section 11. Toxicologica	I Inform	ation			
Carciı	Information on Toxicological Effects: Chronic Toxicological Effects:		The toxicological effects of this product h DMSO - Toxicity Data: Oral LD50 (rat): 1. (mouse): 7,920 mg/kg; Skin LD50 (mouse) Inhalation LC50 (rat): >1,600 mg/m3 (4h) DMSO - Irritation Data: Eyes (rabbit): 100 DMSO - Investigated as a mutagen, represent DMSO - Investigated as a mutagen, represent Only select Registry of Toxic Effects of C See actual entry in RTECS for complete DMSO RTECS Number: PV6210000 NTP? No IARC Monographs? No	4,500 mg/kg e): 50,000 m); 0 mg mild; S oductive effe oductive effe chemical Sub information.	; Skin LD50 (rat ng/kg; Skin TDL0 kin (rabbit): 500 ector, and tumor ector, and tumor ostances (RTEC	t): 40,000 mg/ O (woman): 1, mg (24h) mile igen. igen.	800 mg/kg; d;	
		Hazardous Com	ponents (Chemical Name)	NTP	IARC	ACGIH	OSHA	
2609	26093-31-2 7-Amino-4-methy		Icoumarin	n.a.	n.a.	n.a.	n.a.	
67	-68-5	Dimethyl sulfoxide		n.a.	n.a.	n.a.	n.a.	
		Į	Section 12. Ecological	Informat	 ion	- I	ł	
12.1	Toxicity		Avoid release into the environment.					
. 2. 1	IUXICITY		Runoff from fire control or dilution water r	may cause p	ollution.			
12.2	Persiste Degrada		No data available.					
12.3	Bioaccu Potentia	mulative I:	No data available.					
12.4	Mobility	in Soil:	No data available.					
12.5	5 Results of PBT and vPvE assessment:		3 No data available.					
12.6	Other ac	lverse effects:	No data available.					
			Section 13. Disposal Considerations					
13.1	3.1 Waste Disposal Method:		Dispose in accordance with local, state, and federal regulations.					
			Section 14. Transport	Informat	tion			
14.1	LAND T	RANSPORT (US I						
D	OT Prope OT Hazar N/NA Nun		Not dangerous goods.					
	LAND T	RANSPORT (Euro	opean ADR/RID):					
14.1		hipping Name:	Not dangerous goods.					
A U	N Numbe							
A U H	N Numbe azard Cla	ss:						
U H 14.3	N Numbe azard Cla AIR TR/							



ELA SAKA (S	uporfund Amonda		ulatory Inform		
CAS #		nents and Reauthorization Act	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
26093-31-2	7-Amino-4-methy	· · · · ·	No	No	No
67-68-5	Dimethyl sulfoxide, anhydrous		No	No	No
CAS #	Hazardous Components (Chemical Name)		Other US EPA o	r State Lists	
26093-31-2	7-Amino-4-methylcoumarin		CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No		
67-68-5	Dimethyl sulfoxic	le, anhydrous	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes Inventory; CA PROP.65: No		
		Section 16. Ot	her Information	on	
Revision Date:		04/01/2015			
Additional Information About This Product:		No data available.			
		use. Users should make their their particular purposes.	own investigations to	o determine the suit	ability of the information fo