

Revision: 04/23/2018 Supersedes Revision: 04/11/2017

		(50) No. (50) No. (50)	
		ording to Regulation (EC) No. 1907/2006 as amended by (
		dentification of the Substance/Mixture and of th	le Company/Undertaking
1.1	Product Code: Product Name:	22005 Girard's Reagent P-d5	
	Synonyms:	GP-d5;	
1.2		the substance or mixture and uses advised aga	hinst.
1.2	Relevant identified uses of	Ū	
		•	lary use.
1.3	Details of the Supplier of the Company Name:	he Safety Data Sheet: 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 num	iber:	
	Emergency Contact:	CHEMTREC Within USA and Canada:	+1 (800)424-9300
		CHEMTREC Outside USA and Canada:	+1 (703)527-3887
		Section 2. Hazards Identifica	ation
2.1 2.2	Skin Corrosion/Irritation, Serious Eye Damage/Eye Label Elements:		
	Skin Corrosion/Irritation, Serious Eye Damage/Eye	, Category 2	
	Skin Corrosion/Irritation, Serious Eye Damage/Eye	, Category 2	
	Skin Corrosion/Irritation, Serious Eye Damage/Eye Label Elements:	, Category 2 e Irritation, Category 2	
	Skin Corrosion/Irritation, Serious Eye Damage/Eye Label Elements: GHS Signal Word:	, Category 2 e Irritation, Category 2 Warning	
	Skin Corrosion/Irritation, Serious Eye Damage/Eye Label Elements: GHS Signal Word: GHS Hazard Phrases:	, Category 2 e Irritation, Category 2 Warning	
	Skin Corrosion/Irritation, Serious Eye Damage/Eye Label Elements: GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritatio H319: Causes serious eye GHS Precaution Phrases	, Category 2 e Irritation, Category 2 Warning n. e irritation.	
	Skin Corrosion/Irritation, Serious Eye Damage/Eye Label Elements: GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritatio H319: Causes serious eye GHS Precaution Phrases P264: Wash {hands} thoro	, Category 2 e Irritation, Category 2 Warning n. e irritation.	
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	Skin Corrosion/Irritation, Serious Eye Damage/Eye Label Elements: GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritatio H319: Causes serious eye GHS Precaution Phrases P264: Wash {hands} thoro P280: Wear {protective glo GHS Response Phrases:	, Category 2 e Irritation, Category 2 Warning n. e irritation. :: ughly after handling. oves/protective clothing/eye protection/face protection	on}.
	Skin Corrosion/Irritation, Serious Eye Damage/Eye Label Elements: GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritatio H319: Causes serious eye GHS Precaution Phrases P264: Wash {hands} thoro P280: Wear {protective glo GHS Response Phrases: P302+352: IF ON SKIN: W	, Category 2 e Irritation, Category 2 Warning n. e irritation. e: ughly after handling. oves/protective clothing/eye protection/face protection /ash with plenty of soap and water.	
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	Skin Corrosion/Irritation, Serious Eye Damage/Eye Label Elements: GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritatio H319: Causes serious eye GHS Precaution Phrases P264: Wash {hands} thoro P280: Wear {protective glo GHS Response Phrases: P302+352: IF ON SKIN: W P305+351+338: IF IN EYE to do. Continue rinsing. P332+313: If skin irritation	, Category 2 e Irritation, Category 2 Warning n. e irritation. e: ughly after handling. oves/protective clothing/eye protection/face protection /ash with plenty of soap and water.	
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2.3	Advers	e Human Health	Causes serious eye irritation.					
	Effects and Symptoms:		Causes skin irritation. 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	m irritation				
			To the best of our knowledge	e, the toxicological p	roperties have no	t been thoroughly investigated.		
		Sec	tion 3. Composition	/Information	on Ingredie	nts		
CAS RTE		Hazardous Com REACH Registra	oonents (Chemical Name)/ tion No.	Concentration	EC No./ EC Index No.	GHS Classification		
15055	505-87-2	Girard's Reagent P-	d5	100.0 %	NA	Skin Corr. 2: H315		
NA					NA	Eye Damage 2: H319		
			Section 4. Fi	rst Aid Meas	ures			
4.1	Descrip	otion of First Aid						
	Measur	es:						
	In Case	of Inhalation:			al respiration or gi	ve oxygen by trained personnel.		
			Get immediate medical atten					
	In Case	of Skin Contact:	-			5 minutes. Remove contaminated		
	In Case	of Eye Contact:	clothing. Get medical attention if symptoms occur. Wash clothing before reuse. Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined					
	in Case	of Eye Contact.	and tested by medical persor			5 minutes. Have eyes examined		
	In Case	of Ingestion:	Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by					
	in cucc	, et myeenem						
			medical personnel.			<u>j</u>		
			Section 5. Fire	Fighting Me	asures			
5.1	Suitabl	e Extinguishing	Use alcohol-resistant foam, o	carbon dioxide, wate	er, or dry chemica	l spray.		
	Media:		Use water spray to cool fire-	exposed containers.				
	Unsuita	able Extinguishing	a A solid water stream may be inefficient.					
	Media:							
5.2	Flamma	able Properties an	dNo data available.					
	Hazard	s:						
			No data available.					
	Flash P	't:	No data.					
	Explos	ive Limits:	LEL: No data.	UEL: No d	ata.			
	Autoig	nition Pt:	No data.					
5.3	Fire Fig	hting Instructions	s: As in any fire, wear self-cont	ained breathing app	aratus pressure-c	lemand (NIOSH approved or		
			equivalent), and full protectiv	e gear to prevent co	ontact with skin ar	nd eyes.		
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	5	Section 6. Accidental Release Measures				
6.1	Protective Precautions,	Avoid raising and breathing dust, and provide adequate ventilation.				
		As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator,				
	Emergency Procedures:	and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).				
6.2		Take steps to avoid release into the environment, if safe to do so.				
	Precautions:					
6.3		Contain spill and collect, as appropriate.				
		Transfer to a chemical waste container for disposal in accordance with local regulations.				
	Up:					
	•	Continue 7. Llou alline and Otomore				
L		Section 7. Handling and Storage				
7.1		Avoid breathing dust/fume/gas/mist/vapours/spray.				
	5	Avoid prolonged or repeated exposure.				
7.2		Keep container tightly closed.				
	in Storing:	Store in accordance with information listed on the product insert.				
	Section	on 8. Exposure Controls/Personal Protection				
8.1	Exposure Parameters:					
8.2	Exposure Controls:					
8.2.1	Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne				
	(Ventilation etc.):	evels below recommended exposure limits.				
8.2.2	Personal protection equipr	nent:				
	Eye Protection:	Safety glasses				
	Protective Gloves:	Compatible chemical-resistant gloves				
	Other Protective Clothing:	_ab coat				
	Respiratory Equipment	NIOSH approved respirator, as conditions warrant.				
	(Specify Type):					
	Work/Hygienic/Maintenan	Do not take internally.				
	ce Practices:	Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.				
	l l	Wash thoroughly after handling.				
	I	No data available.				
	Se	ction 9. Physical and Chemical Properties				
9.1	Information on Basic Physic	cal and Chemical Properties				
	Physical States:	[]Gas []Liquid [X]Solid				
	Appearance and Odor:	A solid				
	pH:	No data.				
	Melting Point:	No data.				
	Boiling Point:	No data.				
	Flash Pt:	No data.				
	Evaporation Rate:	No data.				
	Flammability (solid, gas):	No data available.				
	Explosive Limits:	LEL: No data. UEL: No data.				
	Vapor Pressure (vs. Air or	mm No data.				
	Hg):					
	Vapor Density (vs. Air = 1):	No data.				
		Multi-region format				
I		5				



	CHEMICAL						0	uperseues rievis	001. 04/11/2017
	-	Gravity (Water =	1):	No data.					
		y in Water:		No data.					
		Water Partition		No data.					
	Coefficie								
	Autoigni			No data.					
	=	osition Temperat	ure:	No data.					
	Viscosit	-		No data.					
9.2	Other Inf	ormation							
	Percent			No data.					
	Molecula	ar Formula & Weig	ght:	C7H5D5N3O	• Cl 192.7				
			S	ection 10.	Stability and	Reacti	vity		
10.1	Reactivi	ty:	No dat	a available.					
10.2	Stability	:	Unstab	ole [] Stab	ole [X]				
10.3	Stability	Note(s):	Stable	if stored in acc	ordance with informa	ation listed	on the product	insert.	
	Polymer	ization:	Will oc	cur[] Wil	I not occur [X]				
10.4	Conditio	ons To Avoid:	No dat	a available.					
10.5	Incompa	tibility - Materials	s strong	oxidizing agent	ts				
	To Avoid	d:							
10.6	Hazardo	us	carbon	dioxide					
	Decomp	osition or	carbon monoxide						
	Byprodu	icts:	nitrogen oxides						
			phosgene						
			Se	ction 11.	Toxicological	Informa	ation		
11.1	Informat	ion on	The to:	kicological effect	cts of this product ha	ve not bee	n thoroughly st	udied.	
	Toxicolo	gical Effects:							
CAS	#	Hazardous Com	ponent	s (Chemical Na	ame)	NTP	IARC	ACGIH	OSHA
1505	505-87-2	Girard's Reagent	P-d5			n.a.	n.a.	n.a.	n.a.
		·	S	ection 12	. Ecological Ir	nformat	ion		
12.1	Toxicity		Avoid ı	elease into the	environment.				
	-		Runoff from fire control or dilution water may cause pollution.						
12.2	Persiste	nce and	No dat	a available.					
	Degrada	bility:							
12.3	Bioaccu	mulative	No dat	a available.					
	Potentia	l:							
12.4	Mobility	in Soil:	No data available.						
12.5	Results	of PBT and vPvB	No data available.						
	assessm	nent:							
12.6	Other ad	lverse effects:	No dat	a available.					



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Multi-region format

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CHIMICAL				Supersec	des Revision: 04/11/201		
		Section 13. Dispos	sal Considerat	ions			
13.1 Waste D	isposal Method:	Dispose in accordance with loca	al, state, and federal r	egulations.			
		Section 14. Tran	sport Informat	tion			
14.1 LAND T	RANSPORT (US	DOT):					
DOT Prope	r Shipping Name	: Not dangerous goods.					
DOT Hazar	d Class:						
UN/NA Nur	nber:						
14.1 LAND T	RANSPORT (Eur	opean ADR/RID):					
	hipping Name:	Not dangerous goods.					
UN Numbe Hazard Cla							
	SS: ANSPORT (ICAO/	1474).					
	Shipping Name:	Not dangerous goods.					
Additional Tra		Transport in accordance with lo	ocal, state, and federa	l regulations.			
Information:	1 · · ·		.,,				
		Section 15. Regu	latory Informa	tion			
FPA SARA (Su	perfund Amendr	nents and Reauthorization Act	, ,				
CAS #	- -	ponents (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)		
1505505-87-2	Girard's Reagent	· · · ·	No	No	No		
CAS #	Hazardous Com	ponents (Chemical Name) Other US EPA or State Lists					
1505505-87-2	Girard's Reagent			o; CWA NPDES: No	; TSCA: No; CA		
Regulatory Info	rmation	This SDS was prepared in acco	ordance with 29 CFR	1910.1200 and Regu	lation (EC)		
Statement:		No.1272/2008.					
		Section 16. Oth	ner Informatio	n			
Revision Date:		04/23/2018					
Additional Info	mation About	No data available.					
This Product:							
Company Polic	y or Disclaimer:	DISCLAIMER: This information		-			
		currently available to us. Howev		-			
		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.			ity of the information i		



	Section 1. Ide	entification of the Substance/Mixture and of the	he Company/Undertaking
1	Product Code:	601541	
	Product Name:	Girard's Reagent P	
2	Relevant identified uses of t	he substance or mixture and uses advised ag	ainst:
	Relevant identified uses:	For research use only, not for human or veteri	
3	Details of the Supplier of the	- -	,
J	Company Name:	Cayman Chemical Company	
	· · · · · · · · · · · · · · · · · ·	1180 E. Ellsworth Rd.	
		Ann Arbor, MI 48108	
	Web site address:	www.caymanchem.com	
	Information:	Cayman Chemical Company	+1 (734)971-3335
4	Emergency telephone numb	per:	
	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
1	Classification of the Substa	nce or Mixture:	
	Skin Corrosion/Irritation, (Category 2	
	Serious Eye Damage/Eye	Irritation, Category 2	
2	Serious Eye Damage/Eye I Label Elements:	Irritation, Category 2	
2			
.2	Label Elements:	Irritation, Category 2 Warning	
2	Label Elements:	Warning	
2	Label Elements: GHS Signal Word: GHS Hazard Phrases:	Warning	
2	Label Elements: GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritation.	Warning	
2	Label Elements: GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritation. H319: Causes serious eye in	Warning rritation.	
2	Label Elements: GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritation. H319: Causes serious eye in GHS Precaution Phrases: P264: Wash {hands} thorough	Warning rritation.	ion}.
2	Label Elements: GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritation. H319: Causes serious eye in GHS Precaution Phrases: P264: Wash {hands} thorough	Warning rritation. ghly after handling.	ion}.
2	Label Elements: GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritation. H319: Causes serious eye in GHS Precaution Phrases: P264: Wash {hands} thoroug P280: Wear {protective glov GHS Response Phrases: P302+352: IF ON SKIN: Wa	Warning rritation. ghly after handling. res/protective clothing/eye protection/face protection	
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2	Label Elements: GHS Signal Word: GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritation. H319: Causes serious eye in GHS Precaution Phrases: P264: Wash {hands} thoroug P280: Wear {protective glov GHS Response Phrases: P302+352: IF ON SKIN: Wa P305+351+338: IF IN EYES to do. Continue rinsing. P332+313: If skin irritation of P337+313: If eye irritation p	Warning	
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2	Label Elements: GHS Signal Word: GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritation. H319: Causes serious eye in GHS Precaution Phrases: P264: Wash {hands} thoroug P280: Wear {protective glov GHS Response Phrases: P302+352: IF ON SKIN: Wa P305+351+338: IF IN EYES to do. Continue rinsing. P332+313: If skin irritation of P337+313: If eye irritation por P362+364: Take off contam GHS Storage and Disposa	Warning	. Remove contact lenses, if present and easy
2	Label Elements: GHS Signal Word: GHS Signal Word: GHS Hazard Phrases: H315: Causes skin irritation. H319: Causes serious eye in GHS Precaution Phrases: P264: Wash {hands} thoroug P280: Wear {protective glov GHS Response Phrases: P302+352: IF ON SKIN: Wa P305+351+338: IF IN EYES to do. Continue rinsing. P332+313: If skin irritation of P337+313: If eye irritation por P362+364: Take off contam GHS Storage and Disposa	Warning	. Remove contact lenses, if present and eas
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2.3		e Human Health and Symptoms:	Causes serious eye irritation. Causes skin irritation. 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.					
		Sect	ion 3. Composition	/Information of	on Ingredie	nts		
CAS RTEC		Hazardous Com REACH Registra	oonents (Chemical Name)/ tion No.		EC No./ EC Index No.	GHS Classification		
112 NA	6-58-5	Pyridinium, 1-(2-hyd	razino-2-oxoethyl)-, chloride	100.0 %	214-421-4 NA	Skin Corr. 2: H315 Eye Damage 2: H319		
			Section 4. Fi	rst Aid Measu	res			
4.1	Measur	otion of First Aid res: e of Inhalation:	Remove to fresh air. If not bre	eathing, give artificial	respiration or giv	ve oxygen by trained personnel.		
	In Case	of Skin Contact:	Get immediate medical attent Immediately wash skin with s	ion. oap and plenty of wa	ter for at least 15	5 minutes. Remove contaminated		
	In Case	of Eye Contact:	clothing. Get medical attention Hold eyelids apart and flush each and tested by medical person	eyes with plenty of wa	C C	efore reuse. 5 minutes. Have eyes examined		
	In Case	e 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 Mea	sures			
5.1	Suitabl	e Extinguishing	Use alcohol-resistant foam, o	arbon dioxide, water	, or dry chemical	spray.		
	Media:		Use water spray to cool fire-e	exposed containers.				
	Media:		A solid water stream may be	inefficient.				
5.2	Flamma Hazard	-	d No data available.					
	- , · -		No data available.					
	Flash F		No data. LEL: No data.	UEL: No da	ta			
	-	ive Limits: nition Pt:	No data.	OLL. NO UA	ι α .			
5.3	-		: As in any fire, wear self-conta equivalent), and full protectiv	÷ · ·	-			
						Multi-region form		



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		Section 6. Accidental Release Measures		
6.1	Protective Precautions,	Avoid raising and breathing dust, and provide adequate ventilation.		
	Protective Equipment and	As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator,		
	Emergency Procedures:	and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).		
6.2	Environmental	Take steps to avoid release into the environment, if safe to do so.		
	Precautions:			
6.3	Methods and Material For	Contain spill and collect, as appropriate.		
	Containment and Cleaning	Transfer to a chemical waste container for disposal in accordance with local regulations.		
	Up:			
		Section 7. Handling and Storage		
7.1	Precautions To Be Taken	Avoid breathing dust/fume/gas/mist/vapours/spray.		
	in Handling:	Avoid prolonged or repeated exposure.		
7.2	Precautions To Be Taken	Keep container tightly closed.		
	in Storing:	Store in accordance with information listed on the product insert.		
	Secti	on 8. Exposure Controls/Personal Protection		
8.1	Exposure Parameters:			
8.2	Exposure Controls:			
8.2.1		Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne		
		levels below recommended exposure limits.		
8.2.2	Personal protection equip			
		Safety glasses		
	-	Compatible chemical-resistant gloves		
	Other Protective Clothing:			
	-	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 and a safety shower.		
		Wash thoroughly after handling.		
		No data available.		
	Se	ection 9. Physical and Chemical Properties		
9.1		ical and Chemical Properties		
9.1	Physical States:	[]Gas []Liquid [X]Solid		
	Appearance and Odor:	A crystalline solid		
	pH:	No data.		
	Melting Point:	No data.		
	Boiling Point:	No data.		
	Flash Pt:	No data.		
	Evaporation Rate:	No data.		
	Flammability (solid, gas):	No data available.		
	Explosive Limits:	LEL: No data. UEL: No data.		
	Vapor Pressure (vs. Air or			
	Hg):			
	Vapor Density (vs. Air = 1)	: No data.		
		Multi-region formation		

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	Specific	Gravity (Water =	1): No data.					
	Solubility	/ in Water:	No data.	No data.				
	Solubility		Soluble in: water; EtOH;	Soluble in: water; EtOH; MeOH; acetic acid; glycerol; ethylene glycol; DMSO;				
	-	Nater Partition		No data.				
	Coefficie							
	Autoigni		No data.					
	-							
	-	osition Temperat						
	Viscosity		No data.					
9.2	Other Info	ormation						
	Percent V	/olatile:	No data.					
	Molecula	r Formula & Weig	ght: C7H10N3O • Cl 18	7.6				
			Section 10. Stabil	ity and	Reactivi	ty		
10.1	Reactivit	y:	No data available.					
10.2	Stability:		Unstable [] Stable [X]					
10.3	Stability	Note(s):	Stable if stored in accordance w	vith information	ion listed on	the product	insert.	
	Polymeri		Will occur [] Will not occu	r [X]				
10.4	-	ns To Avoid:	No data available.					
10.5			strong oxidizing agents					
	To Avoid	-	strong oxidizing agents					
10.6	Hazardou		carbon dioxide					
10.0			carbon monoxide					
	Decompo		nitrogen oxides					
	Byprodu	CIS:	phosgene					
			Section 11. Toxico					
11.1	Informati	on on	The toxicological effects of this	product hav	e not been th	noroughly st	udied.	
	Toxicolo	gical Effects:						
CAS	¥	Hazardous Com	ponents (Chemical Name)		NTP	IARC	ACGIH	OSHA
112	6-58-5	Pyridinium, 1-(2-h	ydrazino-2-oxoethyl)-, chloride		n.a.	n.a.	n.a.	n.a.
			Section 12. Ecolo	ogical In	formatio	<u> </u>	ł	-
12.1	Toxicity:		Avoid release into the environm	<u> </u>				
	· · · · · · · · · · · · · · · · · · ·		Runoff from fire control or dilution		v cause pollu	ution.		
12.2	Persister	ice and	No data available.		, ,			
	Degradal							
12.2	Bioaccur		No data available.					
12.3			NU Udla avaliable.					
	Potential		NI 1.7 111					
12.4	Mobility			data available.				
12.5	Results o	of PBT and vPvB	No data available.					
	assessm	ent:						
12.6	Other ad	verse effects:	No data available.					
1								



Revision: 04/23/2018

		Section 13. Dispos	al Considerat	ions			
13.1 Waste D	Disposal Method:	Dispose in accordance with loca	l, state, and federal r	egulations.			
		Section 14. Trans	sport Informat	ion			
14.1 LAND 1	RANSPORT (US	DOT):					
DOT Hazar		: Not dangerous goods.					
UN/NA Nui							
	RANSPORT (Eur						
ADR/RID S UN Numbe	hipping Name:	Not dangerous goods.					
Hazard Cla							
	ANSPORT (ICAO/	ΙΔΤΔ)·					
	Shipping Name:	Not dangerous goods.					
Additional Tra		Transport in accordance with lo	cal. state. and federa	l regulations.			
Information:			,,				
		Section 15. Regul	atory Information	tion			
EPA SARA (Sı	perfund Amendn	nents and Reauthorization Act of	,				
CAS #	Hazardous Com	ponents (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)		
1126-58-5	Pyridinium, 1-(2-I	hydrazino-2-oxoethyl)-, chloride	No	No	No		
CAS #	Hazardous Com	ponents (Chemical Name)	nemical Name) Other US EPA or State Lists				
1126-58-5	Pyridinium, 1-(2-I	hydrazino-2-oxoethyl)-, chloride	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No				
Regulatory Info Statement:	ormation	This SDS was prepared in accorn No.1272/2008.	rdance with 29 CFR 2	1910.1200 and Regul	ation (EC)		
		Section 16. Oth	er Information	า			
Revision Date:		04/23/2018					
Additional Info This Product:	rmation About	No data available.					
Company Polic	cy or Disclaimer:	DISCLAIMER: This information is currently available to us. However express or implied, with respect use. Users should make their or their particular purposes.	er, we make no warra to such information, a	anty of merchantabilit and we assume no lia	y or any other warrant bility resulting from its		



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Safety Data Sheet

acc. to OSHA HCS

Printing date 09/17/2020

Revision date 09/17/2020

1 Identification

Product identifier

- Trade name: Oxysterol Derivatization MaxSpec™ System Suitability Mixture
- · Article number: 601542. 021174
- Application of the substance / the mixture For research use only not for human or veterinary use.
- · Details of the supplier of the safety data sheet
- Manufacturer/Supplier: Cayman Chemical Co. 1180 E. Ellsworth Rd. Ann Arbor, MI 48108 USA
- · Information department: Product safety department
- Emergency telephone number: During normal opening times: +1 (734) 971-3335 US/CANADA: 800-424-9300 Outside US/CANADA: 703-741-5970

2 Hazard(s) identification

· Classification of the substance or mixture



Flam. Liq. 2 H225 Highly flammable liquid and vapor.

- · Label elements
- · GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS). · Hazard pictograms



· Signal word Danger · Hazard statements Highly flammable liquid and vapor. · Precautionary statements Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/protective clothing/eye protection/face protection. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. In case of fire: Use for extinction: CO2, powder or water spray. Store in a well-ventilated place. Keep cool.

(Contd. on page 2)

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Trade name: Oxysterol Derivatization MaxSpec™ System Suitability Mixture

(Contd. from page 1) Dispose of contents/container in accordance with local/regional/national/international regulations. • Classification system: • NFPA ratings (scale 0 - 4)

Healt Fire =

Health = 0 Fire = 3 Reactivity = 0

· HMIS-ratings (scale 0 - 4)

HEALTH 0	Health = 0
	Fire = 3
REACTIVITY 0	Reactivity = 0

· Other hazards

· Results of PBT and vPvB assessment

• **PBT:** Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients

· Chemical characterization: Mixtures

• **Description:** Mixture of the substances listed below with nonhazardous additions.

· Dangerous components:			
CAS: 64-17-5 RTECS: KQ6300000	Ethyl alcohol	99.9997%	
· Other ingredients			
CAS: 566-28-9 RTECS: FZ8708000	7-keto Cholesterol	0.0001%	
CAS: 2140-46-7 RTECS: FZ6890000	25-hydroxy Cholesterol	0.0001%	
CAS: 64907-22-8	7α, 25-dihydroxy cholesterol	0.0001%	

4 First-aid measures

· Description of first aid measures

· General information: Immediately remove any clothing soiled by the product.

• After inhalation: Supply fresh air; consult doctor in case of complaints.

After skin contact: Immediately rinse with water.

- After eye contact: Rinse opened eye for several minutes under running water.
- · After swallowing: If symptoms persist consult doctor.
- Information for doctor:
- **Most important symptoms and effects, both acute and delayed** May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects.
- Indication of any immediate medical attention and special treatment needed
- No further relevant information available.

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(Contd. from page 2)

5 Fire-fighting measures

- · Extinguishing media
- Suitable extinguishing agents:
- CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Special hazards arising from the substance or mixture
- Can release vapors that form explosive mixtures at temperatures at or above the flashpoint.
- Container explosion may occur under fire conditions.
- Emits toxic fumes under fire conditions.
- Sensitive to static discharge.
- Vapors can travel to a source of ignition and flash back.
- · Advice for firefighters
- · Protective equipment: No special measures required.

6 Accidental release measures

See Section 13 for disposal information. • Protective Action Criteria for Chemicals • PAC-1: 64-17-5 Ethyl alcohol • PAC-2: 64-17-5 Ethyl alcohol • PAC-3: 64-17-5 Ethyl alcohol • 15000* ppm	 Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away. Environmental precautions: Dilute with plenty of water. Do not allow to enter sewers/ surface or ground water. Methods and material for containment and cleaning up: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Dispose contaminated material as waste according to item 13. Ensure adequate ventilation. Reference to other sections See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. 	
64-17-5 Ethyl alcohol 1,800 ppm • PAC-2:	See Section 13 for disposal information. • Protective Action Criteria for Chemicals	
• PAC-2: 64-17-5 Ethyl alcohol 3300* ppm • PAC-3: - - -	· PAC-1:	
64-17-5 Ethyl alcohol 3300* ppm • PAC-3:	64-17-5 Ethyl alcohol 1,800	ppm
PAC-3:	· PAC-2:	
	64-17-5 Ethyl alcohol 3300*	ppm
64-17-5 Ethyl alcohol 15000* ppm	· PAC-3:	
	64-17-5 Ethyl alcohol 15000*	ppm

7 Handling and storage

- · Handling:
- · Precautions for safe handling
- No special precautions are necessary if used correctly. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure. Keep away from sources of ignition. Take precautionary measures against static discharge.re.
- Information about protection against explosions and fires:
- Keep ignition sources away Do not smoke.
- Protect against electrostatic charges.

(Contd. on page 4)

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Trade name: Oxysterol Derivatization MaxSpec™ System Suitability Mixture

(Contd. from page 3)

- Conditions for safe storage, including any incompatibilities
 Keep away from heat, sparks and flame.
 Keep container tightly closed.
 Store in accordance with information listed on the product insert.
- · Storage:
- Requirements to be met by storerooms and receptacles: Store in a cool location.
- · Information about storage in one common storage facility: Not required.
- Further information about storage conditions:
- Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

· Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.

Control parameters

• Components with limit values that require monitoring at the workplace:

- 64-17-5 Ethyl alcohol
- PEL Long-term value: 1900 mg/m³, 1000 ppm
- REL Long-term value: 1900 mg/m³, 1000 ppm
- TLV Short-term value: 1880 mg/m³, 1000 ppm

• Additional information: The lists that were valid during the creation were used as basis.

- Exposure controls
- Personal protective equipment:
- General protective and hygienic measures: Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work.
- · Breathing equipment: Not required.
- Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

(Contd. on page 5)

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· Eye protection:

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Trade name: Oxysterol Derivatization MaxSpec™ System Suitability Mixture

(Contd. from page 4)



Tightly sealed goggles

9 Physical and chemical properties Information on basic physical and chemical properties General Information · Appearance: Form: Fluid Color: According to product specification · Odor: Alcohol-like · Structural Formula C H3 - C H2 - O H · Molecular Weight 114.1 g/mol · Odor threshold: Not determined. · Formulation A solution in ethanol · pH-value: Not determined. · Change in condition Melting point/Melting range: -114.5 °C (-174.1 °F) **Boiling point/Boiling range:** 78 °C (172.4 °F) · Flash point: 13 °C (55.4 °F) · Flammability (solid, gaseous): Not applicable. 425 °C (797 °F) · Ignition temperature: Decomposition temperature: Not determined. · Auto igniting: Product is not selfigniting. Danger of explosion: Product is not explosive. However, formation of explosive air/ vapor mixtures are possible. · Explosion limits: Lower: 3.5 Vol % 15 Vol % Upper: · Vapor pressure at 20 °C (68 °F): 59 hPa (44.3 mm Hg) Density at 20 °C (68 °F): 0.79 g/cm3 (6.59255 lbs/gal) Relative density Not determined. · Vapor density Not determined. · Evaporation rate Not determined. · Solubility in / Miscibility with Water at 20 °C (68 °F): 1,000 g/l · Partition coefficient (n-octanol/water): Not determined. · Viscositv: Dynamic at 20 °C (68 °F): 1.2 mPas **Kinematic:** Not determined. (Contd. on page 6)

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		(Contd. from page
 Solvent content: Organic solvents: VOC content: 	100.0 % 100.00 % 1,000.0 g/l / 8.35 lb/gal	
Solids content: • Other information	0.0 % No further relevant information available.	

10 Stability and reactivity

· Reactivity No further relevant information available.

- · Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · **Incompatible materials:** No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

·	Information	on	toxicolog	gical	effects	
---	-------------	----	-----------	-------	---------	--

• Acute toxicity:

64-17-5 Ethyl alcohol				
Oral	TDLO	1.14 ml/kg (man)		
	LD50	7,060 mg/kg (rat)		
	TDLO	650 (man)		
Dermal	LD50	40,000 mg/kg (rat)		
Inhalative	LC50/4 h	5,900 mg/m³ (rat)		
	LC50	20,000 mg/m³/10h (rat)		
	TCLO	1,800 mg/m³/30m (hmn)		
	LCLO	29,300 mg/m³/7h (mouse)		
	TCLO	1,800 (hmn)		
	LC50	10 h - 20,000 mg/m³ (rat)		
	LD50 Inhalation TCLO	1,800 mg/m³/30m (hmn)		
	LC50/4 h	20,000 mg/l (rat)		
Irritation of skin	Irritation	20 mg/24h (rabbit)		
	TDLO	1,800 mg/kg (wmn)		
Irritation of eyes	Irritation	500 mg/24h (rabbit)		
-	Intraperitoneal LD50	280 mg/kg (rat)		
	Data	500 mg/24h (rabbit)		

· on the skin: No irritant effect.

· on the eye: No irritating effect.

• Sensitization: No sensitizing effects known.

(Contd. on page 7)

⁻⁻ US

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1

- · Additional toxicological information:
- · Carcinogenic categories
- · IARC (International Agency for Research on Cancer)
- 64-17-5 Ethyl alcohol

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · **Bioaccumulative potential** No further relevant information available.
- Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- Results of PBT and vPvB assessment
- **PBT:** Not applicable.
- · vPvB: Not applicable.
- Other adverse effects No further relevant information available.

13 Disposal considerations

- · Waste treatment methods
- · Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- · Uncleaned packagings:
- Recommendation: Disposal must be made according to official regulations.
- · Recommended cleansing agent: Water, if necessary with cleansing agents.

· UN-Number	
· DOT, IMDG, IATA	UN1170
· UN proper shipping name	
DOT	Ethanol solutions
IMDG	ETHANOL SOLUTION (ETHYL ALCOHO
	SOLUTION)
· IATA	Ethanol solution

Printing date 09/17/2020

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nting date 09/17/2020	Revision date 09/17/2
ade name: Oxysterol Derivatization MaxSpec	c™ System Suitability Mixture
	(Contd. from pag
 Transport hazard class(es) 	
· Class	3 Elammable liquide
· Label	3 Flammable liquids 3
· Class	3 Flammable liquids
Label	3
· Packing group · DOT, IMDG, IATA	II
· Environmental hazards:	Not applicable.
 Special precautions for user Hazard identification number (Kemler code EMS Number: Stowage Category 	Warning: Flammable liquids e): 33 F-E,S-D A
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
DOT Quantity limitations	On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L
 IMDG Limited quantities (LQ) Excepted quantities (EQ) 	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· IATA	
· Remarks:	When sold in quantities of less than or equal to 1 n or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minin Quantities exemption, per IATA 2.6.10. Therefore packaging does not have to be labeled Dangerous Goods/Excepted Quantity.
· UN "Model Regulation":	UN 1170 ETHANOL SOLUTION (ETHYL ALCOH SOLUTION), 3, II

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Trade name: Oxysterol Derivatization MaxSpec™ System Suitability Mixture

(Contd. from page 8)

(Contd. on page 10)

US

5 Regulatory information	
$^{\rm \cdot}$ Safety, health and environmental regulations/legislation specific for the su $^{\rm \cdot}$ Sara	bstance or mixture
· Section 355 (extremely hazardous substances):	
None of the ingredients is listed.	
· Section 313 (Specific toxic chemical listings):	
None of the ingredients is listed.	
· TSCA (Toxic Substances Control Act):	
64-17-5 Ethyl alcohol	ACTIVE
Hazardous Air Pollutants	·
None of the ingredients is listed.	
· Proposition 65	
· Chemicals known to cause cancer:	
None of the ingredients is listed.	
• Chemicals known to cause reproductive toxicity for females:	
None of the ingredients is listed.	
• Chemicals known to cause reproductive toxicity for males:	
None of the ingredients is listed.	
· Chemicals known to cause developmental toxicity:	
64-17-5 Ethyl alcohol	
· Carcinogenic categories	
· EPA (Environmental Protection Agency)	
None of the ingredients is listed.	
 TLV (Threshold Limit Value established by ACGIH) 	
64-17-5 Ethyl alcohol	A3
NIOSH-Ca (National Institute for Occupational Safety and Health)	·
None of the ingredients is listed.	
 GHS label elements The product is classified and labeled according to the Globally Harmonized Syste Hazard pictograms 	em (GHS).
GHS02	
 Signal word Danger Hazard statements Highly flammable liquid and vapor. Precautionary statements Keep away from heat/sparks/open flames/hot surfaces No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge. 	

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Wear protective gloves/protective clothing/eye protection/face protection. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. In case of fire: Use for extinction: CO2, powder or water spray.

Store in a well-ventilated place. Keep cool.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- · Department issuing SDS: Environment protection department.
- · Contact: -
- · Date of preparation / last revision 09/17/2020 / -

· Abbreviations and acronyms: IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation IATA: International Air Transport Association ACGIH: American Conference of Governmental Industrial Hygienists EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA) VOC: Volatile Organic Compounds (USA, EU) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety OSHA: Occupational Safety & Health TLV: Threshold Limit Value PEL: Permissible Exposure Limit REL: Recommended Exposure Limit Flam. Lig. 2: Flammable liquids - Category 2 * * Data compared to the previous version altered.



Oxidase

Revision: 06/04/2018

_		$\overline{1007/0}$			
	a	ccording to Regulation (EC) No. 1907/2	2006 as amended by	(EC) No. 1272/200	10
	Section 1.	Identification of the Substance	e/Mixture and of t	he Company/Ur	ndertaking
.1	Product Code:	601543			
	Product Name:	Oxysterol Derivatization Ma	xSpec™ Choleste	erol Oxidase	
.2	Relevant identified uses	of the substance or mixture and	l uses advised ag	gainst:	
	Relevant identified use	s: For research use only, not f	or human or veteri	inary use.	
.3	Details of the Supplier o	f the Safety Data Sheet:			
	Company Name:	Cayman Chemical Compan	у		
		1180 E. Ellsworth Rd.			
	Web site address.	Ann Arbor, MI 48108			
	Web site address: Information:	www.caymanchem.com Cayman Chemical Compan		1 (72)	4)971-3335
.4	Emergency telephone n		'y	+1 (75-	+)97 1-3333
1.4	Emergency Contact:	CHEMTREC Within USA ar	nd Canada.	+1 (80	0)424-9300
	Emergency contact.	CHEMTREC Outside USA a			3)527-3887
		Section 2 Hoza	vrda Idantifia		,
		Section 2. Haza		alion	
2.1	Classification of the Sub				
	Respiratory Sensitizat	ion, Category 1			
2.2	Label Elements:				
	GHS Signal Word:	Danger			
	GHS Hazard Phrases:	-	a difficultion if inho	lod	
	GHS Hazard Phrases: H334: May cause allerg	y or asthma symptoms or breathing	g difficulties if inha	led.	
	GHS Hazard Phrases: H334: May cause allerg GHS Precaution Phras	y or asthma symptoms or breathing es:	g difficulties if inha	led.	
	GHS Hazard Phrases: H334: May cause allerg GHS Precaution Phras P261: Avoid breathing {	y or asthma symptoms or breathing es: dust/fume/gas/mist/vapors/spray}.	-	ıled.	
	GHS Hazard Phrases: H334: May cause allerg GHS Precaution Phras P261: Avoid breathing {	y or asthma symptoms or breathing t es: dust/fume/gas/mist/vapors/spray}. uate ventilation wear respiratory pr	-	ıled.	
	GHS Hazard Phrases: H334: May cause allerg GHS Precaution Phras P261: Avoid breathing { P285: In case of inadeq GHS Response Phrase	y or asthma symptoms or breathing t es: dust/fume/gas/mist/vapors/spray}. uate ventilation wear respiratory pr	rotection.		e for breathing.
	GHS Hazard Phrases: H334: May cause allerg GHS Precaution Phras P261: Avoid breathing { P285: In case of inadeq GHS Response Phrase P304+340: IF INHALED	y or asthma symptoms or breathing es: dust/fume/gas/mist/vapors/spray}. uate ventilation wear respiratory pr	rotection. eep at rest in a pos	sition comfortable	-
	GHS Hazard Phrases: H334: May cause allerg GHS Precaution Phras P261: Avoid breathing { P285: In case of inadeq GHS Response Phrase P304+340: IF INHALED	y or asthma symptoms or breathing dust/fume/gas/mist/vapors/spray}. uate ventilation wear respiratory pr es: Remove victim to fresh air and ke ng respiratory symptoms call a PO	rotection. eep at rest in a pos	sition comfortable	-
	GHS Hazard Phrases: H334: May cause allerg GHS Precaution Phras P261: Avoid breathing { P285: In case of inadeq GHS Response Phrase P304+340: IF INHALED P342+311: If experienci GHS Storage and Disp	y or asthma symptoms or breathing dust/fume/gas/mist/vapors/spray}. uate ventilation wear respiratory pr es: Remove victim to fresh air and ke ng respiratory symptoms call a PO	rotection. eep at rest in a pos NSON CENTER or	sition comfortable ^r doctor/physician	-
2.3	GHS Hazard Phrases: H334: May cause allerg GHS Precaution Phras P261: Avoid breathing { P285: In case of inadeq GHS Response Phrase P304+340: IF INHALED P342+311: If experienci GHS Storage and Disp	y or asthma symptoms or breathing es: dust/fume/gas/mist/vapors/spray}. uate ventilation wear respiratory pr es: Remove victim to fresh air and ke ng respiratory symptoms call a PO tosal Phrases:	rotection. eep at rest in a pos VISON CENTER or isposal information	sition comfortable r doctor/physician n.	
2.3	GHS Hazard Phrases: H334: May cause allerg GHS Precaution Phras P261: Avoid breathing { P285: In case of inadeq GHS Response Phrase P304+340: IF INHALED P342+311: If experienci GHS Storage and Disp Please refer to Section	y or asthma symptoms or breathing dust/fume/gas/mist/vapors/spray}. uate ventilation wear respiratory pr es: Remove victim to fresh air and ke ng respiratory symptoms call a PO rosal Phrases: 7 for Storage and Section 13 for Di Material may be irritating to the May be harmful by inhalation, ir	rotection. eep at rest in a pos NSON CENTER or isposal information mucous membran ngestion, or skin ab	sition comfortable r doctor/physician n. nes and upper res psorption.	n. spiratory tract.
2.3	GHS Hazard Phrases: H334: May cause allerg GHS Precaution Phras P261: Avoid breathing { P285: In case of inadeq GHS Response Phrase P304+340: IF INHALED P342+311: If experienci GHS Storage and Disp Please refer to Section	y or asthma symptoms or breathing dust/fume/gas/mist/vapors/spray}. uate ventilation wear respiratory pr es: Remove victim to fresh air and ke ng respiratory symptoms call a PO rosal Phrases: 7 for Storage and Section 13 for Di Material may be irritating to the May be harmful by inhalation, in May cause allergy or asthma sy	rotection. eep at rest in a pos DISON CENTER or isposal information mucous membran ngestion, or skin at /mptoms or breath	sition comfortable r doctor/physician n. nes and upper res psorption. ing difficulties if ir	n. spiratory tract.
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2.3	GHS Hazard Phrases: H334: May cause allerg GHS Precaution Phras P261: Avoid breathing { P285: In case of inadeq GHS Response Phrase P304+340: IF INHALED P342+311: If experienci GHS Storage and Disp Please refer to Section Adverse Human Health Effects and Symptoms:	y or asthma symptoms or breathing dust/fume/gas/mist/vapors/spray}. uate ventilation wear respiratory pr es: Remove victim to fresh air and ke ng respiratory symptoms call a PO rosal Phrases: 7 for Storage and Section 13 for Di Material may be irritating to the May be harmful by inhalation, ir May cause allergy or asthma sy May cause eye, skin, or respiration To the best of our knowledge, th	rotection. eep at rest in a pos NSON CENTER or mucous membran ngestion, or skin at mptoms or breath tory system irritation he toxicological pro-	sition comfortable r doctor/physician n. nes and upper res bsorption. ing difficulties if ir on. operties have not	n. spiratory tract. nhaled. s been thoroughly investigate
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CAS	GHS Hazard Phrases: H334: May cause allerg GHS Precaution Phras P261: Avoid breathing { P285: In case of inadeq GHS Response Phrase P304+340: IF INHALED P342+311: If experienci GHS Storage and Disp Please refer to Section Adverse Human Health Effects and Symptoms: Sec	y or asthma symptoms or breathing dust/fume/gas/mist/vapors/spray}. uate ventilation wear respiratory pr es: Remove victim to fresh air and ke ng respiratory symptoms call a PO rosal Phrases: 7 for Storage and Section 13 for Di Material may be irritating to the May be harmful by inhalation, ir May cause allergy or asthma sy May cause eye, skin, or respirat To the best of our knowledge, the ction 3. Composition/In ponents (Chemical Name)/	rotection. eep at rest in a pos NSON CENTER or mucous membran ngestion, or skin at mptoms or breath tory system irritation he toxicological pro-	sition comfortable r doctor/physician n. hes and upper res osorption. ing difficulties if ir on. operties have not on Ingrediel EC No./	n. spiratory tract. nhaled. s been thoroughly investigate
	GHS Hazard Phrases: H334: May cause allerg GHS Precaution Phras P261: Avoid breathing { P285: In case of inadeq GHS Response Phrase P304+340: IF INHALED P342+311: If experienci GHS Storage and Disp Please refer to Section Adverse Human Health Effects and Symptoms: Sec	y or asthma symptoms or breathing dust/fume/gas/mist/vapors/spray}. uate ventilation wear respiratory pro- es: Remove victim to fresh air and keing respiratory symptoms call a PO rosal Phrases: 7 for Storage and Section 13 for Di Material may be irritating to the May be harmful by inhalation, ir May cause allergy or asthma sy May cause eye, skin, or respiration To the best of our knowledge, the ction 3. Composition/It ation No.	rotection. eep at rest in a pos DISON CENTER or mucous membran mucous membran mucous membran mucous membran tory system irritation tory system irritation tory system irritation tory formation con	sition comfortable r doctor/physician n. hes and upper res osorption. ing difficulties if ir on. operties have not	n. spiratory tract. nhaled. been thoroughly investigate nts



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



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8.2	Exposure Controls:	
8.2.1		Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
8.2.2	Personal protection equip	ment:
	Eye Protection:	Safety glasses
	Protective Gloves:	Compatible chemical-resistant gloves
	Other Protective Clothing:	Lab coat
		NIOSH approved respirator, as conditions warrant.
	Work/Hygienic/Maintenan	Do not take internally.
	ce Practices:	Facilities storing or utilizing this material should be equipped with an eyewash and a safety showe Wash thoroughly after handling.
		No data available.
	Se	ection 9. Physical and Chemical Properties
9.1		ical and Chemical Properties
	Physical States:	[]Gas []Liquid [X]Solid
	Appearance and Odor:	A lyophilized powder
	pH:	No data.
	Melting Point:	No data.
	Boiling Point:	No data.
	Flash Pt:	No data.
	Evaporation Rate:	No data.
	Flammability (solid, gas):	No data available.
	Explosive Limits:	LEL: No data. UEL: No data.
	Vapor Pressure (vs. Air or Hg):	mm No data.
	Vapor Density (vs. Air = 1)	: No data.
	Specific Gravity (Water = 1	
	Solubility in Water:	No data.
	Solubility Notes:	~ 50 mM potassium phosphate buffer (pH 7.5) (cold);
	Octanol/Water Partition	No data.
	Coefficient:	
	Autoignition Pt:	No data.
	Decomposition Temperatu	
	Viscosity:	No data.
9.2	Other Information	
	Percent Volatile:	No data.

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			Section 10. Stability	and Reactiv	vity			
10.1	Reactivi	ty:	No data available.					
10.2	Stability		Unstable [] Stable [X]					
10.3 Stability Note(s):			Stable if stored in accordance with in	formation listed of	on the product	insert.		
	Polymerization:		Will occur [] Will not occur [X]					
10.4	Conditio	ons To Avoid:	No data available.					
10.5	Incompa To Avoi	-	s strong oxidizing agents					
10.6	Hazardo	ous	No data available.					
	Decomp	osition or						
	Byprodu	ucts:						
			Section 11. Toxicolog	cal Informa	ation			
11.1	Informa		The toxicological effects of this produ	ict have not beer	n thoroughly st	udied.		
CAS	Toxicological Effects:		ponents (Chemical Name)	NTP	IARC	ACGIH	OSHA	
	" 8-76-6	Cholesterol oxida	· · · ·					
902	0-70-0	Cholesterol Oxida		n.a.	n.a.	n.a.	n.a.	
			Section 12. Ecologic	al Informat	ion			
12.1	Toxicity	:	Avoid release into the environment.					
			Runoff from fire control or dilution wa	ter may cause p	ollution.			
12.2	Persiste	nce and	No data available.					
	Degrada	ability:						
12.3	3 Bioaccumulative No data available. Potential:							
12.4	Mobility	in Soil:	No data available.					
12.5								
12.6	Other ad	verse effects:	No data available.					
			Section 13. Disposal	Considerat	ions			
13.1	Waste D	isposal Method:	Dispose in accordance with local, sta	te, and federal re	egulations.			
			Section 14. Transpo	ort Informat	ion			
		RANSPORT (US	DOT):					
14.1	LAND T							
		r Shipping Name						
D		r Shipping Name						
D D	OT Prope	er Shipping Name d Class:						
D D	OT Prope OT Hazar N/NA Nur	er Shipping Name d Class:	Not dangerous goods.					
D D U 14.1	OT Prope OT Hazar N/NA Nur LAND T	r Shipping Name d Class: nber:	Not dangerous goods.					
D D U 14.1 A	OT Prope OT Hazar N/NA Nur LAND T	er Shipping Name d Class: nber: RANSPORT (Euro hipping Name:	Not dangerous goods.					

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CULTURE

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14.3 AIR TRANSPORT (ICAO/IATA):

ICAO/IATA Shipping Name: Not dangerous goods.

Transport in accordance with local, state, and federal regulations.

Information:

Additional Transport

Section 15. Regulatory Information

CAS #	Hazardous Com	ponents (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)		
9028-76-6	Cholesterol oxida	ase	No	No	No		
CAS # Hazardous Comp		ponents (Chemical Name)	Other US EPA or State Lists				
9028-76-6	Cholesterol oxidase		CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No				
Regulatory Inf Statement:	ormation	This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.					
		Section 16. Ot	her Informatio	on			
Revision Date:		06/04/2018					
Additional Information About		No data available.					
This Product:							
Company Policy or Disclaimer:		DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.					