

Revision: 04/15/2019 Supersedes Revision: 03/06/2014

Pr 2 Re F 3 De	Section 1. roduct Code: roduct Name:	ng to Regulation (EC) No. 1907/2006 as amended by (EC) No. 2015/830 and US OSHA HCS 2015 Identification of the Substance/Mixture and of the Company/Undertaking 400085 A-23187 (25 mM) Assay Reagent		
Pr 2 Re F 3 De	roduct Code: roduct Name:	400085		
Pr 2 Re F 3 De	roduct Name:			
2 Re F 3 De		A-23187 (25 mM) Assay Reagent		
F .3 De	elevant identified uses o			
.3 De		f the substance or mixture and uses advised against:		
	Relevant identified uses	: For research use only, not for human or veterinary use.		
(etails of the Supplier of t	he Safety Data Sheet:		
	Company Name:	Cayman Chemical Company		
		1180 E. Ellsworth Rd.		
,	Web site address:	Ann Arbor, MI 48108		
	Information:	www.caymanchem.com Cayman Chemical Company +1 (734)971-3335		
	mergency telephone nur Emergency Contact:	CHEMTREC Within USA and Canada: +1 (800)424-9300		
	Emergency Contact.	CHEMTREC Outside USA and Canada: +1 (300)424-9300 CHEMTREC Outside USA and Canada: +1 (703)527-3887		
		Section 2. Hazards Identification		
1 Cl	lassification of the Subs	tance or Mixture:		
	Flammable Liquids, Cat			
Skin Corrosion/Irritation, Category 3 .2 Label Elements:				
(GHS Signal Word:	Warning		
	GHS Hazard Phrases:			
	H227: Combustible liquid.			
	H316: Causes mild skin ir			
	GHS Precaution Phrase			
		eat/sparks/open flames/hot surfaces} No smoking. oves/protective clothing/eye protection/face protection}.		
	GHS Response Phrases			
	-	n occurs, get medical advice/attention.		
	GHS Storage and Dispo			
	• •	for Storage and Section 13 for Disposal information.		
.3 A	dverse Human Health	Causes skin and serious eye irritation.		
Ef	ffects and Symptoms:	DMSO has the potential to carry toxic materials or materials of unknown toxicity into the body.		
		DMSO is readily absorbed through skin.		
		To the best of our knowledge, the toxicological properties have not been thoroughly investigated		
		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.		



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		Sec	tion 3. Composition	/Information	on Ingredie	nts		
CAS RTE	#/ CS #	Hazardous Com REACH Registra	ponents (Chemical Name)/ tion No.	Concentration	EC No./ EC Index No.	GHS Classification		
52665-69-7 A23187 DM4676000				1.309 %	258-084-1 NA	Skin Corr. 2: H315 Eye Damage 2: H319 STOT (SE) 3: H335		
	7-68-5 10000	Dimethyl sulfoxide, 01-2119431362-50	anhydrous	98.691 %	200-664-3 NA	Flam. Liq. 4: H227		
			Section 4. Fi	rst Aid Measu	ures			
4.1	Descri	ption of First Aid						
	Measu In Case	res: e of Inhalation:	Remove to fresh air. If not bre	0.0	I respiration or giv	ve oxygen by trained personnel.		
	In Case	e 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 Ingestion:			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 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:		d:	dizziness, and drowsiness. Eye contact may cause blurry vision, burning sensation, redness, tearing, and vasodilation.					
						earing, and vasodilation.		
			Section 5. Fire	Fighting Mea	asures			
5.1	Suitabl Media:	e Extinguishing		Jse alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. Jse water spray to cool fire-exposed containers.				
	Unsuita Media:	•	g A solid water stream may be	inefficient.				
5.2 Flammable Properties ar Hazards:			ndCan release vapors that form Container explosion may occ Emits toxic fumes under fire	cur under fire conditi	-	at or above the flashpoint.		
			Sensitive to static discharge.					
			Vapors can travel to a source	e of ignition and flasl	h back.			
			No data available.					
	Flash F	Pt:	89.00 C Method Used: Cl	-				
	-	ive Limits:	LEL: 3.5% at 25.0 C	UEL: 42.0%	at 25.0 C			
	-	nition Pt:	215.00 C					
5.3	Fire Fig	ghting Instruction	s: As in any fire, wear self-conta equivalent), and full protectiv Note: Combustible as diluted	e gear to prevent co	ontact with skin an			



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		Section 6. Accidental Release Measures
6.1	Protective Precautions,	Avoid breathing vapors and provide adequate ventilation.
	Protective Equipment and	As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator,
	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 Cleanin	${f g}$ 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.
		Keep away from sources of ignition.
		Take precautionary measures against static discharge.
7.2	Precautions To Be Taken	Keep away from heat, sparks, and flame.
	in Storing:	Keep container tightly closed.
		Store in accordance with information listed on the product insert.
	Other Precautions:	Hygroscopic
	Sect	ion 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.):	levels below recommended exposure limits.
8.2.2	Personal protection equip	oment:
	Eye Protection:	Safety glasses
	Protective Gloves:	Compatible chemical-resistant gloves
	Other Protective Clothing	:Lab coat
	Respiratory Equipment	NIOSH approved respirator, as conditions warrant.
	(Specify Type):	
	Work/Hygienic/Maintenan	Do not take internally.
	ce Practices:	Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.
		Wash thoroughly after handling.
		No data available.



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	CHEMICAL	Supersedes Revision: 03/06/2014					
	Sec	ction 9. Physical and Chemical Properties					
9.1	Information on Basic Physic	al and Chemical Properties					
	Physical States:	[]Gas [X]Liquid []Solid					
	Appearance and Odor:	A solution in DMSO					
	pH:	No data.					
	Melting Point:	No data.					
	Boiling Point:	No data.					
	Flash Pt:	89.00 C Method Used: Closed Cup					
	Evaporation Rate:	No data.					
	Flammability (solid, gas):	No data available.					
	Explosive Limits:	LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C					
	Vapor Pressure (vs. Air or m	nm 0.37 MM_HG at 20.0 C					
	Hg):						
	Vapor Density (vs. Air = 1):	No data.					
	Specific Gravity (Water = 1):	No data.					
	Solubility in Water:	No data.					
	Octanol/Water Partition	No data.					
	Coefficient:						
	Autoignition Pt:	215.00 C					
	Decomposition Temperature						
	Viscosity:	No data.					
9.2	Other Information						
0.2	Percent Volatile:	No data.					
		Section 10. Stability and Reactivity					
10.1	,	lo data available.					
10.2	-	Instable [] Stable [X]					
10.3	• • • • •	table if stored in accordance with information listed on the product insert.					
		/ill occur [] Will not occur [X]					
10.4	Conditions To Avoid: he	eat, flames, and sparks					
10.5	Incompatibility - Materials a						
	· · · ·	hosphorus halides					
		trong acids					
		Ikali metals					
		trong oxidizing agents					
		trong reducing agents					
10.6		arbon monoxide					
		arbon dioxide					
	Byproducts: SI	ulfur oxides					



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			Section 11. To	xicological	Informa	ation		
11.1	Informat Toxicolo	ion on ogical Effects:	DMSO - Toxicity Data: O (mouse): 7,920 mg/kg; S	The toxicological effects of this product have not been thoroughly studied. DMSO - Toxicity Data: Oral LD50 (rat): 14,500 mg/kg; Skin LD50 (rat): 40,000 mg/kg; Oral LD50 (mouse): 7,920 mg/kg; Skin LD50 (mouse): 50,000 mg/kg; Skin TDLO (woman): 1,800 mg/kg; Inhalation LC50 (rat): >1,600 mg/m3 (4h);				
	DMSO - Irritation Data: A-23187 - Toxicity Data mg/kg; Subcutaneous L			Intraperitoneal LD	050 (rat): 92			
	Chronic ToxicologicalA-23187 - Investigated as a drug and natural product.Effects:DMSO - Investigated as a mutagen, reproductive effector, and tumorigen.Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented he See actual entry in RTECS for complete information.DMSO RTECS Number: PV6210000					sented here.		
	A-23187 RTECS Number: DM4676000							
Carci	Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No							
CAS	#	Hazardous Com	ponents (Chemical Nam	e)	NTP	IARC	ACGIH	OSHA
526	65-69-7	A23187			n.a.	n.a.	n.a.	n.a.
67	7-68-5	Dimethyl sulfoxic	le, anhydrous		n.a.	n.a.	n.a.	n.a.
Section 12. Ecological Information								
12.1 12.2	Runoff from fire control or dilution water may cause pollution.							
12.3	Degradability:							
12.4	Mobility	in Soil:	No data available.					
12.5	Results assessn		No data available.					
12.6	2.6 Other adverse effects: No data available.							
			Section 13. Di	sposal Con	siderati	ions		
13.1	Waste D	isposal Method:	Dispose in accordance w	/ith local, state, ar	nd federal re	egulations.		
			Section 14.	Transport Ir	nformat	ion		
14.1	LAND T	RANSPORT (US	DOT):					
	DOT Proper Shipping Name: Combustible liquid, n.o.s. (Dimethyl sulfoxide) DOT Hazard Class:							
U	IN/NA Nun	nber:	NA1993	Pac	king Grou	p:		
14.1	LAND T	RANSPORT (Eur	opean ADR/RID):					
A	DR/RID S	hipping Name:	Not dangerous good	s.				
-	IN Numbe lazard Cla		1993	Pac	king Grou:	p:	III	



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14.3 AIR TRANSPORT (ICAO/IATA):

ICAO/IATA Shipping Name:Not dangerous goods.Additional TransportTransport in accordance with local, state, and federal regulations.Information:When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of
E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10.Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.

Section 15. Regulatory Information

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)		
A23187	No	No	No		
Dimethyl sulfoxide, anhydrous	No	No	No		
Hazardous Components (Chemical Name)	Other US EPA or	Other US EPA or State Lists			
665-69-7 A23187 CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; PROP.65: No			No; TSCA: No; CA		
Dimethyl sulfoxide, anhydrous	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No				
Regulatory Information This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) Statement: No.1272/2008.					
	A23187 Dimethyl sulfoxide, anhydrous Hazardous Components (Chemical Name) A23187 Dimethyl sulfoxide, anhydrous ormation This SDS was prepared in ac	A23187 No Dimethyl sulfoxide, anhydrous No Hazardous Components (Chemical Name) Other US EPA or A23187 CAA HAP,ODC: PROP.65: No Dimethyl sulfoxide, anhydrous Dimethyl sulfoxide, anhydrous CAA HAP,ODC: Inventory; CA Ploor Inventory; CA Ploor Ormation This SDS was prepared in accordance with 29 CFF	A23187 No No Dimethyl sulfoxide, anhydrous No No Hazardous Components (Chemical Name) Other US EPA or State Lists A23187 CAA HAP,ODC: No; CWA NPDES: PROP.65: No Dimethyl sulfoxide, anhydrous CAA HAP,ODC: No; CWA NPDES: Inventory; CA PROP.65: No ormation This SDS was prepared in accordance with 29 CFR 1910.1200 and Re		

Section 16. Other Information

Revision Date:04/15/2019Additional Information AboutNo 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.



Product Code:

Product Name:

1.1

1.2

1

SAFETY DATA SHEET Calcium Chloride (1 M) A

	Calcium Chloride (1 M) Assay Reagent	
		Revision: 04/15/2019
	S	upersedes Revision: 03/02/2015
accord	ing to Regulation (EC) No. 1907/2006 as amended by (EC) No. 2015/830 and US OSHA HCS 2	2015
Section 1.	Identification of the Substance/Mixture and of the Company/Un	dertaking
e:	400087	
e:	Calcium Chloride (1 M) Assay Reagent	
tified upon	of the substance or mixture and uses advised against:	

Relevant identified uses of the substance or mixture and uses advised against: Relevant identified uses: For research use only, not for human or veterinary use.

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 nur	nber:	
	Emergency Contact:	CHEMTREC Within USA and Canada:	+1 (800)424-9300
		CHEMTREC Outside USA and Canada:	+1 (703)527-3887

Section 2. Hazards Identification

Classification of the Substance or Mixture: 2.1

Serious Eye Damage/Eye Irritation, Category 2

2.2 Label Elements:



Warning

GHS Hazard Phrases:

GHS Signal Word:

H319: Causes serious eye irritation.

GHS Precaution Phrases:

P264: Wash {hands} thoroughly after handling.

P280: Wear {protective gloves/protective clothing/eye protection/face protection}.

GHS Response Phrases:

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+313: If eye irritation persists, get medical advice/attention.

GHS Storage and Disposal Phrases:

Please refer to Section 7 for Storage and Section 13 for Disposal information.

2.3 Causes serious eye irritation. Adverse Human Health

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 skin or respiratory system irritation.

To the best of our knowledge, the toxicological properties have not been thoroughly investigated.



SAFETY DATA SHEET Calcium Chloride (1 M) Assay Reagent

Multi-region format

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REACH Registra Calcium chloride 01-2119494219-28 Water na ion of First Aid s: of Inhalation: of Skin Contact: of Eye Contact: of Ingestion: Extinguishing	Section 4. Fi Remove to fresh air. If not br Get immediate medical atten Immediately wash skin with s clothing. Get medical attention Hold eyelids apart and flush and tested by medical person Wash out mouth with water p unconscious person. Get me medical personnel. Section 5. Fire	eathing, give artifici- tion. soap and plenty of w on if symptoms occu eyes with plenty of w nnel. orovided person is c dical attention. Do N Fighting Me carbon dioxide, wate	al respiration or giv vater for at least 15 r. Wash clothing b water for at least 19 onscious. Never gi NOT induce vomitir ASUICES er, or dry chemical	5 minutes. Have eyes examin ive anything by mouth to an ng unless directed to do so by		
01-2119494219-28 Water na ion of First Aid s: of Inhalation: of Skin Contact: of Eye Contact: of Ingestion: Extinguishing	Remove to fresh air. If not br Get immediate medical atten Immediately wash skin with s clothing. Get medical attention Hold eyelids apart and flush of and tested by medical person Wash out mouth with water p unconscious person. Get me medical personnel. Section 5. Fire	85.3 % rst Aid Meas eathing, give artificiation. soap and plenty of work of the symptoms occur eyes with plenty of the symptoms occur eyes with plenty of the symptoms occur eyes and plenty of the symptoms occur eyes with plenty occur eyes with pl	NA 231-791-2 NA UIES al respiration or give vater for at least 15 ir. Wash clothing b water for at least 11 onscious. Never give NOT induce vomiting asures er, or dry chemical	No GHS classifications appl ve oxygen by trained personne 5 minutes. Remove contamina efore reuse. 5 minutes. Have eyes examin tive anything by mouth to an ng unless directed to do so by		
ion of First Aid s: of Inhalation: of Skin Contact: of Eye Contact: of Ingestion: Extinguishing	Remove to fresh air. If not br Get immediate medical atten Immediately wash skin with s clothing. Get medical attention Hold eyelids apart and flush of and tested by medical person Wash out mouth with water p unconscious person. Get me medical personnel. Section 5. Fire	rst Aid Meas rst Aid Meas eathing, give artificia tion. soap and plenty of w on if symptoms occu eyes with plenty of w onel. provided person is c dical attention. Do N Fighting Me carbon dioxide, wate	NA URES al respiration or giv vater for at least 15 r. Wash clothing b water for at least 1 onscious. Never gi NOT induce vomitir ASURES er, or dry chemical	ve oxygen by trained personne 5 minutes. Remove contamina efore reuse. 5 minutes. Have eyes examin ive anything by mouth to an ng unless directed to do so by		
s: of Inhalation: of Skin Contact: of Eye Contact: of Ingestion: Extinguishing	Remove to fresh air. If not br Get immediate medical atten Immediately wash skin with s clothing. Get medical attention Hold eyelids apart and flush of and tested by medical person Wash out mouth with water p unconscious person. Get me medical personnel. Section 5. Fire	eathing, give artifici- tion. soap and plenty of w on if symptoms occu eyes with plenty of w nnel. orovided person is c dical attention. Do N Fighting Me carbon dioxide, wate	al respiration or giv vater for at least 15 r. Wash clothing b water for at least 19 onscious. Never gi NOT induce vomitir ASUICES er, or dry chemical	5 minutes. Remove contamina efore reuse. 5 minutes. Have eyes examin ive anything by mouth to an ng unless directed to do so by		
s: of Inhalation: of Skin Contact: of Eye Contact: of Ingestion: Extinguishing	Remove to fresh air. If not br Get immediate medical atten Immediately wash skin with s clothing. Get medical attention Hold eyelids apart and flush of and tested by medical person Wash out mouth with water p unconscious person. Get me medical personnel. Section 5. Fire	eathing, give artifici- tion. soap and plenty of w on if symptoms occu eyes with plenty of w nnel. orovided person is c dical attention. Do N Fighting Me carbon dioxide, wate	al respiration or giv vater for at least 15 r. Wash clothing b water for at least 19 onscious. Never gi NOT induce vomitir ASUICES er, or dry chemical	5 minutes. Remove contamina efore reuse. 5 minutes. Have eyes examin ive anything by mouth to an ng unless directed to do so by		
s: of Inhalation: of Skin Contact: of Eye Contact: of Ingestion: Extinguishing	Get immediate medical atten Immediately wash skin with s clothing. Get medical attention Hold eyelids apart and flush of and tested by medical person Wash out mouth with water p unconscious person. Get me medical personnel. Section 5. Fire	tion. soap and plenty of woon if symptoms occur eyes with plenty of woonel. provided person is c dical attention. Do N Fighting Me carbon dioxide, wate	vater for at least 15 r. Wash clothing b water for at least 1 onscious. Never gi NOT induce vomitir ASUICES er, or dry chemical	5 minutes. Remove contamina efore reuse. 5 minutes. Have eyes examin ive anything by mouth to an ng unless directed to do so by		
of Skin Contact: of Eye Contact: of Ingestion: Extinguishing	Get immediate medical atten Immediately wash skin with s clothing. Get medical attention Hold eyelids apart and flush of and tested by medical person Wash out mouth with water p unconscious person. Get me medical personnel. Section 5. Fire	tion. soap and plenty of woon if symptoms occur eyes with plenty of woonel. provided person is c dical attention. Do N Fighting Me carbon dioxide, wate	vater for at least 15 r. Wash clothing b water for at least 1 onscious. Never gi NOT induce vomitir ASUICES er, or dry chemical	5 minutes. Remove contamina efore reuse. 5 minutes. Have eyes examin ive anything by mouth to an ng unless directed to do so by		
of Eye Contact: of Ingestion: Extinguishing	clothing. Get medical attention Hold eyelids apart and flush of and tested by medical person Wash out mouth with water p unconscious person. Get me medical personnel. Section 5. Fire Use alcohol-resistant foam, of	on if symptoms occu eyes with plenty of v nnel. provided person is c dical attention. Do N Fighting Me carbon dioxide, wate	r. Wash clothing b water for at least 1 onscious. Never gi NOT induce vomitir ASUIES er, or dry chemical	efore reuse. 5 minutes. Have eyes examin ive anything by mouth to an ng unless directed to do so by		
of Ingestion: Extinguishing	and tested by medical person Wash out mouth with water p unconscious person. Get me medical personnel. Section 5. Fire Use alcohol-resistant foam, o	nnel. provided person is c dical attention. Do N Fighting Me carbon dioxide, wate	onscious. Never gi NOT induce vomitir ASUIES er, or dry chemical	ive anything by mouth to an ng unless directed to do so by		
Extinguishing	unconscious person. Get me medical personnel. Section 5. Fire Use alcohol-resistant foam, o	dical attention. Do N Fighting Me carbon dioxide, wate	NOT induce vomitir ASURES er, or dry chemical	ng unless directed to do so by		
	Use alcohol-resistant foam, o	carbon dioxide, wate	er, or dry chemical	spray.		
			-	spray.		
lo Extinguistics	Use water spray to cool fire-	exposed containers				
lo Extinguistic	Use water spray to cool fire-exposed containers.					
ne ⊏xunguisnin(a solid water stream may be	inefficient.				
ble Properties ar	dNo data available.					
:						
	No data available.					
:	No data.					
e Limits:	LEL: No data.	UEL: No c	lata.			
tion Pt:	No data.					
nting Instructions	s:As in any fire, wear self-cont equivalent), and full protectiv	• • • •	•	· · ·		
	Section 6. Accider	ntal Release	Measures			
/e Precautions, /e Equipment an	Avoid breathing vapors and d As conditions warrant, wear			eathing apparatus, or respirate		
ncy Procedures:						
mental	Take steps to avoid release	into the environme	nt, if safe to do so.			
ons:	A A A A A A A A A A	• .				
			osal in accordance	with local regulations.		
nc ne or	y Procedures: ental ns: nd Material Fo	y Procedures: and appropriate personal pr ental Take steps to avoid release ns: and Material For Contain spill and collect, as	y Procedures:and appropriate personal protection (rubber booentalTake steps to avoid release into the environments:and Material ForContain spill and collect, as appropriate.	Take steps to avoid release into the environment, if safe to do so.		



SAFETY DATA SHEET Calcium Chloride (1 M) Assay Reagent

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7.1		Section 7. Handling and Storage	ge				
7.1							
	Precautions To Be Taken Av	oid breathing dust/fume/gas/mist/vapours/spray.					
	in Handling: Av	oid prolonged or repeated exposure.					
7.2	Precautions To Be Taken Ke	ep container tightly closed.					
	in Storing: St	ore in accordance with information listed on the proc	duct insert.				
	Sectio	n 8. Exposure Controls/Personal	Protection				
8.1	Exposure Parameters:						
8.2	Exposure Controls:						
8.2.1	Engineering Controls	e process enclosures, local exhaust ventilation, or o	other engineering controls to control airborne				
	(Ventilation etc.):	els below recommended exposure limits.					
8.2.2	Personal protection equipme	ent:					
	Eye Protection: Sa	fety glasses					
1	Protective Gloves: Co	mpatible chemical-resistant gloves					
1	Other Protective Clothing:La	b coat					
	Respiratory Equipment NI	OSH approved respirator, as conditions warrant.					
	(Specify Type):						
	Work/Hygienic/Maintenan Do not take internally.						
		cilities storing or utilizing this material should be equ	uipped with an eyewash and a safety shower				
	W	ash thoroughly after handling.					
	No	o data available.					
	Sec	tion 9. Physical and Chemical Pr	operties				
9.1	Information on Basic Physica	l and Chemical Properties					
	Physical States:	[]Gas [X]Liquid []Solid					
	Appearance and Odor:	Solution					
	pH:	No data.					
	Melting Point:	No data.					
	Boiling Point:	No data.					
	Flash Pt:	No data.					
	Evaporation Rate:	No data.					
	Flammability (solid, gas):	No data available.					
	Explosive Limits:	LEL: No data. UEL: No	data.				
	Vapor Pressure (vs. Air or m	m No data.					
	Hg):						
	Vapor Density (vs. Air = 1):	No data.					
	Specific Gravity (Water = 1):	No data.					
	Solubility in Water:	No data.					
1	Octanol/Water Partition	No data.					
	Coefficient:						



SAFETY DATA SHEET Calcium Chloride (1 M) Assay Reagent

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							S	upersedes Revis	ion: 03/02/2015
	Autoigniti	on Pt:	No d	ata.					
	Decompo	sition Temperate	ure: No d	lata.					
	Viscosity:	:	No d	lata.					
9.2	Other Info	rmation							
	Percent V	olatile:	No d	ata.					
			Secti	on 10. Stab	ility and	Reactiv	⁄ity		
10.1	Reactivity	' :	No data ava	ilable.					
10.2	Stability:		Unstable [] Stable [X]					
10.3	Stability N	lote(s):	Stable if stor	red in accordance	with informa	tion listed o	n the product	insert.	
	Polymeriz	ation:	Will occur [] Will not occ	ur [X]				
10.4	Condition	s To Avoid:	No data ava	ilable.					
10.5	5 Incompatibility - Materials No data available.								
	To Avoid:								
10.6	0.6 Hazardous hydrogen chloride gas								
Decomposition or									
	Byproduc	ts:							
			Sectio	n 11. Toxico	ological	Informa	tion		
11.1	1.1 Information on T			The toxicological effects of this product have not been thoroughly studied.					
	Toxicolog	ical Effects:	Calcium Chloride - Toxicity Data: Intraperitoneal LD50 (mouse): 20500 mg/kg; Oral TDLO (rat): 243						
			gm/kg/35W	(continuous);					
	Chronic T	oxicological	oride - Investigate	-					
Effects: Only select Registry of Toxic Effects of Chemical Substa					stances (RTE	CS) data is pre	sented here.		
			See actual entry in RTECS for complete information.						
. .			Calcium Chloride RTECS Number: EV9810000						
	nogenicity:		NTP? No	IARC Monograp	pns? No	1	gulated? No		-
CAS		Hazardous Com	ponents (Ch	emical Name)		NTP	IARC	ACGIH	OSHA
		Calcium chloride				n.a.	n.a.	n.a.	n.a.
773	2-18-5	Water				n.a.	n.a.	n.a.	n.a.
			Secti	ion 12. Ecol	ogical Ir	formati	on		
12.1	Toxicity:		Avoid release into the environment.						
			Runoff from fire control or dilution water may cause pollution.						
12.2	Persisten	ce and	No data ava	ilable.					
	Degradab	ility:							
12.3	Bioaccum	ulative	No data ava	ilable.					
	Potential:								
12.4	.4 Mobility in Soil: No data available.								
12.5	Results of assessme	f PBT and vPvB ent:	No data ava	ilable.					
12.6	Other adv	erse effects:	No data ava	ilable.					



13.1

14.1

14.1

14.3

CAS #

CAS #

Information:

10035-04-8

7732-18-5

10035-04-8

7732-18-5

Statement:

Page: 5 of 5

Revision: 04/15/2019

S. 313 (TRI)

SAFETY DATA SHEET Calcium Chloride (1 M) Assay Reagent Supersedes Revision: 03/02/2015 Section 13. Disposal Considerations Waste Disposal Method: Dispose in accordance with local, state, and federal regulations. Section 14. Transport Information 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: AIR TRANSPORT (ICAO/IATA): ICAO/IATA Shipping Name: Not dangerous goods. Additional Transport Transport in accordance with local, state, and federal regulations. Section 15. Regulatory Information EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists Hazardous Components (Chemical Name) S. 302 (EHS) S. 304 RQ Calcium chloride No No No Water No No No Hazardous Components (Chemical Name) Other US EPA or State Lists Calcium chloride CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No Water CAA HAP, ODC: No; CWA NPDES: No; TSCA: Yes -Inventory; CA PROP.65: No This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) **Regulatory Information** No.1272/2008. Section 16. Other Information

04/15/2019 **Revision Date:** 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.



PV6210000

SAFETY DATA SHEET Cell-Based PMA (1 mM)

	Revision:	07/19/2018
Supersedes	Revision:	01/22/2015

	CHEMICAL				Supersedes Revision: 01/22/2015			
		ording to Regulation (EC) No. 190	-					
	Section 1.	dentification of the Substar	ice/Mixture and of t	he Company/Ur	ndertaking			
.1	Product Code:	400145						
	Product Name:	Cell-Based PMA (1 mM)						
.2	Relevant identified uses of	the substance or mixture a	ind uses advised ag	jainst:				
	Relevant identified uses:	For research use only, no	ot for human or veter	inary use.				
.3	Details of the Supplier of the	he Safety Data Sheet:						
	Company Name:	Cayman Chemical Comp	any					
		1180 E. Ellsworth Rd.						
	Web site address:	Ann Arbor, MI 48108 www.caymanchem.com						
	Information:	Cayman Chemical Comp	anv	+1 (734	4)971-3335			
.4	Emergency telephone num							
	Emergency Contact:	CHEMTREC Within USA	and Canada.	+1 (80)	0)424-9300			
		CHEMTREC Outside US		•	3)527-3887			
		Section 2 Her	zarda Idantifia		,			
		Section 2. Haz		alion				
2.1	Classification of the Subst							
2.2	Label Elements:	Flammable Liquids, Category 4						
	GHS Signal Word: GHS Hazard Phrases:	Warning						
	H227: Combustible liquid.							
	GHS Precaution Phrases							
		•• eat/sparks/open flames/hot su	rfaces} No smoking	a.				
		oves/protective clothing/eye p		-				
	GHS Response Phrases:			-				
	No phrases apply.							
	GHS Storage and Dispos	al Phrases:						
	Please refer to Section 7 fe	or Storage and Section 13 for	Disposal information	1.				
2.3	Adverse Human Health	DMSO has the potential to ca		r materials of unk	nown toxicity into the body.			
	Effects and Symptoms:	DMSO is readily absorbed th	•					
		Material may be irritating to the			piratory tract.			
		May be harmful by inhalation May cause eye, skin, or resp	-	-				
					been thoroughly investigated			
	Secti	on 3. Composition		-				
CAS	I	onents (Chemical Name)/	Concentration	EC No./	GHS Classification			
RTE	CS # REACH Registrati	on No.		EC Index No.				
	61-29-8 Phorbol 12-myristate	13-acetate	0.063 %	605-413-5 NA	Skin Corr. 2: H315			
	7-68-5 Dimethyl sulfoxide, ar	hydrous	99.937 %	200-664-3	Flam. Liq. 4: H227			

Multi-region format

NA



SAFETY DATA SHEET Cell-Based PMA (1 mM)

Revision: 07/19/2018 Supersedes Revision: 01/22/2015

		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.
4.2		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 cool fire-exposed containers.
	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.
		Vapors can travel to a source of ignition and flash back.
		No data available.
	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
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. Note: Combustible as diluted in dimethyl sulfoxide
		Section 6. Accidental Release Measures
6.1	Protective Precautions,	Avoid breathing vapors and provide adequate ventilation.
	Protective Equipment an	d As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator,
	Emergency Procedures:	and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
6.2	Environmental	Take steps to avoid release into the environment, if safe to do so.
	Precautions:	
6.3		r Contain spill and collect, as appropriate.
		ngTransfer to a chemical waste container for disposal in accordance with local regulations.
	Up:	



SAFETY DATA SHEET Cell-Based PMA (1 mM)

Revision: 07/19/2018 Supersedes Revision: 01/22/2015

	enemical.	Supersedes Revision: 01/22/2015			
		Section 7. Handling and Storage			
7.1	Precautions To Be Taken A	void breathing dust/fume/gas/mist/vapours/spray.			
		void prolonged or repeated exposure.			
	-	Ceep away from sources of ignition.			
	Т	ake precautionary measures against static discharge.			
.2	Precautions To Be Taken	Ceep away from heat, sparks, and flame.			
	in Storing:	ceep container tightly closed.			
	S	store in accordance with information listed on the product insert.			
	Other Precautions:	łygroscopic			
	Sectio	on 8. Exposure Controls/Personal Protection			
8.1	Exposure Parameters:				
3.2	Exposure Controls:				
3.2.1	Engineering Controls	Jse process enclosures, local exhaust ventilation, or other engineering controls to control airborn			
	(Ventilation etc.):	evels below recommended exposure limits.			
3.2.2	Personal protection equipn	nent:			
	Eye Protection:	Safety glasses			
	Protective Gloves:	Compatible chemical-resistant gloves			
	Other Protective Clothing:L	ab coat			
	Respiratory Equipment NIOSH approved respirator, as conditions warrant.				
	(Specify Type):				
	Do not take internally.				
Work/Hygienic/Maintenan Do not take internally. ce Practices: Facilities storing or utilizing this material should be equipped with an eyewash a					
	Wash thoroughly after handling.				
	Ν	lo data available.			
	Se	ation O. Dhyraigal and Chamical Dranartica			
		ction 9. Physical and Chemical Properties			
).1		ction 9. Physical and Chemical Properties			
).1	Information on Basic Physic	al and Chemical Properties			
).1	Information on Basic Physic Physical States:	al and Chemical Properties []Gas [X]Liquid []Solid			
).1	Information on Basic Physic Physical States: Appearance and Odor:	al and Chemical Properties []Gas [X] Liquid [] Solid 50 μl of phorbol-12-myristate-13-acetate (PMA) at a concentration of 1mM in DMSO			
0.1	Information on Basic Physic Physical States: Appearance and Odor: pH:	al and Chemical Properties []Gas [X]Liquid []Solid 50 μl of phorbol-12-myristate-13-acetate (PMA) at a concentration of 1mM in DMSO No data.			
0.1	Information on Basic Physic Physical States: Appearance and Odor: pH: Melting Point:	cal and Chemical Properties []Gas [X]Liquid []Solid 50 μl of phorbol-12-myristate-13-acetate (PMA) at a concentration of 1mM in DMSO No data. No data.			
).1	Information on Basic Physic Physical States: Appearance and Odor: pH: Melting Point: Boiling Point:	al and Chemical Properties []Gas [X]Liquid []Solid 50 μl of phorbol-12-myristate-13-acetate (PMA) at a concentration of 1mM in DMSO No data. No data. No data.			
).1	Information on Basic Physic Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt:	cal and Chemical Properties []Gas [X] Liquid [] Solid 50 μl of phorbol-12-myristate-13-acetate (PMA) at a concentration of 1mM in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup			
0.1	Information on Basic Physic Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate:	 al and Chemical Properties []Gas [X] Liquid [] Solid 50 μl of phorbol-12-myristate-13-acetate (PMA) at a concentration of 1mM in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup No data. 			
0.1	Information on Basic Physic Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas):	 al and Chemical Properties []Gas [X] Liquid [] Solid 50 μl of phorbol-12-myristate-13-acetate (PMA) at a concentration of 1mM in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup No data. No data. No data. No data. 			
0.1	Information on Basic Physic Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas): Explosive Limits:	 al and Chemical Properties []Gas [X] Liquid []Solid 50 µl of phorbol-12-myristate-13-acetate (PMA) at a concentration of 1mM in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup No data. No data. No data. LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C 			
0.1	Information on Basic Physic Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas): Explosive Limits: Vapor Pressure (vs. Air or r	 al and Chemical Properties []Gas [X] Liquid []Solid 50 µl of phorbol-12-myristate-13-acetate (PMA) at a concentration of 1mM in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup No data. No data. No data. LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C 			
.1	Information on Basic Physical Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas): Explosive Limits: Vapor Pressure (vs. Air or r Hg):	 al and Chemical Properties []Gas [X] Liquid [] Solid 50 μl of phorbol-12-myristate-13-acetate (PMA) at a concentration of 1mM in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup No data. No data. No data. LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C nm 0.37 MM_HG at 20.0 C 			
0.1	Information on Basic Physical Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas): Explosive Limits: Vapor Pressure (vs. Air or r Hg): Vapor Density (vs. Air = 1):	 Fal and Chemical Properties []Gas [X] Liquid [] Solid 50 μl of phorbol-12-myristate-13-acetate (PMA) at a concentration of 1mM in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup No data. No data. No data. No data. No data available. LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C nm 0.37 MM_HG at 20.0 C 			
0.1	Information on Basic Physical Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas): Explosive Limits: Vapor Pressure (vs. Air or r Hg): Vapor Density (vs. Air = 1): Specific Gravity (Water = 1)	 Fal and Chemical Properties []Gas [X]Liquid []Solid 50 µl of phorbol-12-myristate-13-acetate (PMA) at a concentration of 1mM in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup No data. No data available. LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C nm 0.37 MM_HG at 20.0 C No data. No data. No data. 			
9.1	Information on Basic Physical Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas): Explosive Limits: Vapor Pressure (vs. Air or r Hg): Vapor Density (vs. Air = 1): Specific Gravity (Water = 1) Solubility in Water:	 al and Chemical Properties []Gas [X] Liquid [] Solid 50 µl of phorbol-12-myristate-13-acetate (PMA) at a concentration of 1mM in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup No data. No data available. LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C nm 0.37 MM_HG at 20.0 C No data. No data. No data. 			
9.1	Information on Basic Physical Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas): Explosive Limits: Vapor Pressure (vs. Air or r Hg): Vapor Density (vs. Air = 1): Specific Gravity (Water = 1)	 Fal and Chemical Properties []Gas [X]Liquid []Solid 50 µl of phorbol-12-myristate-13-acetate (PMA) at a concentration of 1mM in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup No data. No data available. LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C nm 0.37 MM_HG at 20.0 C No data. No data. No data. 			



12.6

Other adverse effects:

No data available.

Cav		SAFETY DAT Cell-Based PMA	-)		Page: 4 of sion: 07/19/2018			
				S	upersedes Revis	sion: 01/22/2015			
	Autoignition Pt:	215.00 C							
	Decomposition Tempera								
	Viscosity:	No data.							
9.2	Other Information								
	Percent Volatile:	No data.							
		Section 10. Stability and	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	ation listed of	on the product	insert.				
	Polymerization:	Will occur [] Will not occur [X]							
10.4	Conditions To Avoid:	heat, flames, and sparks							
10.5	Incompatibility - Materia	I s acid chlorides							
	To Avoid:	phosphorus halides							
		strong acids							
		alkali metals							
		strong oxidizing agents	strong oxidizing agents						
		strong reducing agents							
10.6	Hazardous	carbon monoxide carbon dioxide							
	Decomposition or								
	Byproducts:	sulfur oxides							
		Section 11. Toxicological	Informa	ation					
11.1	Information on	The toxicological effects of this product have not been thoroughly studied.							
	Toxicological Effects:	DMSO - Toxicity Data: Oral LD50 (rat): 14,500 mg/kg; Skin LD50 (rat): 40,000 mg/kg; Oral LD50							
		(mouse): 7,920 mg/kg; Skin LD50 (mouse	-	g/kg; Skin TD	LO (woman): 1	,800 mg/kg;			
		Inhalation LC50 (rat): >1,600 mg/m3 (4h)							
		DMSO - Irritation Data: Eyes (rabbit): 100) mg mild; Sł	kin (rabbit): 50	0 mg (24h) mil	d;			
	Chronic Toxicological		DMSO - Investigated as a drug, mutagen, primary irritant, reproductive effector, and tumorigen.						
	Effects:	Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here.							
		See actual entry in RTECS for complete i	nformation.						
		DMSO RTECS Number: PV6210000							
Carci	nogenicity:	NTP? No IARC Monographs? No	OSHA Re	egulated? No					
CAS		mponents (Chemical Name)	NTP	IARC	ACGIH	OSHA			
		istate 13-acetate	n.a.	n.a.	n.a.	n.a.			
67	7-68-5 Dimethyl sulfox	de, anhydrous n.a. n.a. n.a. n.a.				n.a.			
		Section 12. Ecological I	nformat	ion					
12.1	Toxicity:	Avoid release into the environment.							
		Runoff from fire control or dilution water may cause pollution.							
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 vPv	B No data available.							
	assessment:								

Multi-region format



SAFETY DATA SHEET Cell-Based PMA (1 mM)

Revision: 07/19/2018 Supersedes Revision: 01/22/2015

				•	
		Section 13. Dispos	al Considerat	ions	
13.1 Waste I	Disposal Method:	Dispose in accordance with loca	l, state, and federal r	egulations.	
		Section 14. Trans	sport Informat	tion	
14.1 LAND	RANSPORT (US	DOT):			
DOT Prope	er Shipping Name	: Combustible liquid, n.o.s.			
DOT Hazaı					
UN/NA Nu		NA1993	Packing Grou	ıp:	III
	RANSPORT (Eur				
	Shipping Name:	Not dangerous goods.			
UN Numbe		1993	Packing Grou	ıb:	III
Hazard Cla					
	ANSPORT (ICAO/	-			
	Shipping Name:	Not dangerous goods.			
Additional Tra	nsport	Transport in accordance with lo	cal, state, and federa	l regulations.	
information.					
		Section 15. Regul	atory Informa	tion	
EPA SARA (Si	uperfund Amendm	nents and Reauthorization Act of	of 1986) Lists		
CAS #	Hazardous Com	ponents (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
16561-29-8	Phorbol 12-myris		No	No	No
67-68-5	Dimethyl sulfoxid	le, anhydrous	No	No	No
CAS #	Hazardous Com	ponents (Chemical Name)	Other US EPA or S	State Lists	
16561-29-8	Phorbol 12-myris	tate 13-acetate	CAA HAP,ODC: N PROP.65: No	o; CWA NPDES: No	o; TSCA: No; CA
67-68-5	Dimethyl sulfoxid	le, anhydrous	CAA HAP,ODC: N Inventory; CA PR	o; CWA NPDES: No OP.65: No	o; TSCA: Yes -
Regulatory Inf	ormation	This SDS was prepared in acco	rdance with 29 CFR	1910.1200 and Regu	ulation (EC)
Statement:		No.1272/2008.			
		Section 16. Oth	ner Information	n	
Revision Date:		07/19/2018			
Additional Info	rmation About	No data available.			
This Product:					
Company Polic	cy or Disclaimer:	DISCLAIMER: This information currently available to us. Howev express or implied, with respect use. Users should make their o their particular purposes.	er, we make no warra to such information,	anty of merchantabili and we assume no li	ity or any other warranty, iability resulting from its



1 Product Code: 600198 Product Name: NETosis Imaging Buffer (5X) 2 Relevant identified uses of the substance or mixture and uses advised against: Relevant identified uses: For research use only, not for human or veterinary use. 3 Details of the Supplier of the Safety Data Sheet: Company Name: Cayman Chemical Company 1180 E. Elisworth Rd. Ann Arbor, MI 49108 Web site address: www.caymanchem.com Information: Cayman Chemical Company +1 (734)971-3335 4 Emergency telephone number: Emergency telephone number: Emergency telephone number: Emergency telephone number: Section 2. Hazards Identification .1 Classification of the Substance or Mixture: Skin Corrosion/Irritation, Category 3 .2 Label Elements: GHS Signal Word: Warning GHS Signal Word: Warning GHS Signal Word: VGHS Precaution Phrases: No phrases apply. GHS Storage and Disposal Phrases: Pasare of to Saction 7 for Storage and Saction 13 for Disposal information. .3 Adverse Human Healt Causes mild skin iritation Effects and Symptoms: Material may be irintating to the mucous membranes and upper respiratory t			ng to Regulation (EC) No. 1907/2006 as amended by (EC) No Identification of the Substance/Mixture at	nd of the Company/L	Indertaking
Product Name: NETosis Imaging Buffer (5X) 2. Relevant identified uses of the substance or mixture and uses advised against: Relevant identified uses: For research use only, not for human or veterinary use. 3. Details of the Supplier of the Safety Data Sheet: Company Name: Cayman Chemical Company 1180 E. Elisworth Rd. Ann Arbor, Mit 48108 Web site address: www.caymanchem.com Information: Cayman Chemical Company +1 (734)971-3335 4. Emergency telephone number: Emergency Contact: CHEMTREC Outside USA and Canada: +1 (704)971-3335 7. Classification of the Substance or Mixture: Skin Corrosion/Irritation, Category 3 2. Label Elements: Section 2. Hazards Identification 1. Classification of the Substance or Mixture: Skin Corrosion/Irritation, Category 3 2 2. Label Elements: Haring GHS Nazard Phrases: H316: Causes mild skin irritation. GHS Nazard Phrases: Passe relet to Section 7 for Storage and Section 13 for Disposal Information. GHS Signal Word: Warning GHS Nazard Phrases: Pesse relet to Section 7 for Storage and Section 13 for Disposal Information. GHS Storage and Spoposal Phrases: Pesse relet to Section 7 for Storage and Section 13 for Disposal Information. GHS Storage and Section 14 bor bukatian, i	4				indentaking
Relevant Identified uses: For research use only, not for human or veterinary use. 3 Details of the Supplier of the Safety Data Sheet: Company Name: Cayman Chemical Company 1180 E. Elsworth Rd. Ann Arbor, MI 48108 Web site address: Cayman Chemical Company +1 (73/971-3335 4 Emergency telephone number: Emergency Contact: C. CHEMTREC Within USA and Canada: +1 (800)424-9300 CHEMTREC Outside USA and Canada: +1 (703)627-3887 Section 2. Hazards Identification Section 2. Hazards Identification CHEMTREC Within USA and Canada: +1 (703)627-3887 Section 2. Hazards Identification Section 2. Hazards Identification GHS Signal Word: Warning GHS Neares: Pages Phrases: Pages Phrases: Pages Phrases: Pages Phrases: Pages refer to Section 7 for Storage and Section 13 for Disposal information. GHS Storage and Disposal Phrases: Pages refer to Section 7 for Storage and Section 13 for Disposal information. Adverse Human Healt <	. 1				
3 Details of the Supplier of the Safety Data Sheet: Company Name: Cayman Chemical Company 1180 E. Elisworth Rd. Ann Arbor, MI 48108 Web site address: www.caymanchem.com Information: Cayman Chemical Company +1 (734)971-3335 4 Emergency Elephone number: Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300 CHEMTREC Outside USA and Canada: +1 (800)424-9300 CHEMTREC Outside USA and Canada: +1 (703)527-3887 3 Section 2. Hazards Identification 1 Classification of the Substance or Mixture: Skin Corrosion/Irritation, Category 3 2 Label Elements: GHS Signal Word: Warning GHS Hazard Phrases: H316: Causes mild skin irritation. GHS Precaution Phrases: No phrases apply. GHS Response Phrases: Pasa-r31: If skin irritation cours, get medical advice/attention. GHS Storage and Disposal Phrases: Please refer to Section 7 for Storage and Section 13 for Disposal information. 3 Adverse Human Health: Causes mild skin irritation Effects and Symptoms: Material may be irritating to the mucous membranes and upper respiratory tract. May cause end sharing to the toxicological properties have not been thoroughly investigated Section 3. Composition/Information. To the best of our knowledge, the toxicological properties have not been thoroughly investigated Section 3. Composition/Information on Ingredients Tetes ad Symptoms: Material may be irritating to the mucous membranes and upper respiratory tract. May cause end or respiratory system irritation. To the best of our knowledge, the toxicological properties have not been thoroughly investigated Section 3. Composition/Information on Ingredients Stab # / REACH Registration No. Potassium chlonide 8050000 01-2119339418-38 0.2 % 231-519-3 No GHS classifications appl 907-14-5 Sodium chlonide 80.0 % 231-598-3 No GHS classifications appl 907-14-5 Sodium chlonide 80.0 % 231-598-3 No GHS classifications appl	.2	Relevant identified uses of	of the substance or mixture and uses advis	sed against:	
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1180 E. Elisworth Rd. Ann Arbor, MI 48108 Web site address: www.caymanchem.com Information: Cayman Chemical Company +1 (734)971-3335 4. Emergency telephone number: Emergency Contact: CHEMTREC Within USA and Canada: +1 (703)527-3887 5.4 Emergency Contact: CHEMTREC Outside USA and Canada: +1 (703)527-3887 Section 2. Hazards Identification 1 Classification of the Substance or Mixture: Skin Corrosion/Irritation, Category 3 2. Label Elements: OHS Signal Word: Warning GHS Signal Word: Warning GHS Response Phrases: H316: Causes mild skin irritation. GHS Signal Word: Warning GHS Response Phrases: P324-313: If skin irritation occurs, get medical advice/attention. GHS Storage and Disposal Phrases: Please refer to Section 7 for Storage and Section 13 for Disposal information. Adverse Human Health Causes mild skin irritation Effects and Symptoms: Mate he antrul by inheliation, ingestion, or skin absorption. May be harritating to the mucous membra	.3	Details of the Supplier of	the Safety Data Sheet:		
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S8050000 01-2119539416-36 NA 7778-77-0 Potassium phosphate, Monobasic 0.2 % 231-913-4 No GHS classifications appl 7647-14-5 Sodium chloride 8.0 % 231-598-3 No GHS classifications appl	2.3	GHS Hazard Phrases: H316: Causes mild skin in GHS Precaution Phrase No phrases apply. GHS Response Phrases P332+313: If skin irritation GHS Storage and Dispo Please refer to Section 7 Adverse Human Health Effects and Symptoms:	rritation. s: n occurs, get medical advice/attention. sal Phrases: for Storage and Section 13 for Disposal infor Causes mild skin irritation Material may be irritating to the mucous me May be harmful by inhalation, ingestion, or May cause eye or respiratory system irritati To the best of our knowledge, the toxicolog	mbranes and upper res skin absorption. on. ical properties have no	t been thoroughly investigated
C6615500 01-2119490224-41 NA 7647-14-5 Sodium chloride 8.0 % 231-598-3 No GHS classifications appl	CAS	GHS Hazard Phrases: H316: Causes mild skin ir GHS Precaution Phrase No phrases apply. GHS Response Phrases P332+313: If skin irritation GHS Storage and Dispo Please refer to Section 7 Adverse Human Health Effects and Symptoms: Sect	rritation. s: n occurs, get medical advice/attention. sal Phrases: for Storage and Section 13 for Disposal infor Causes mild skin irritation Material may be irritating to the mucous me May be harmful by inhalation, ingestion, or May cause eye or respiratory system irritati To the best of our knowledge, the toxicolog ion 3. Composition/Informati ponents (Chemical Name)/	mbranes and upper re- skin absorption. on. ical properties have no ion on Ingredie on EC No./	t been thoroughly investigated
7647-14-5 Sodium chloride 8.0 % 231-598-3 No GHS classifications appl	CAS RTE	GHS Hazard Phrases: H316: Causes mild skin ir GHS Precaution Phrases No phrases apply. GHS Response Phrases P332+313: If skin irritation GHS Storage and Dispo Please refer to Section 7 Adverse Human Health Effects and Symptoms: Sect #/ Hazardous Comp REACH Registrat 47-40-7	rritation. s: n occurs, get medical advice/attention. sal Phrases: for Storage and Section 13 for Disposal infor Causes mild skin irritation Material may be irritating to the mucous me May be harmful by inhalation, ingestion, or May cause eye or respiratory system irritati To the best of our knowledge, the toxicolog ion 3. Composition/Informatic ponents (Chemical Name)/ tion No.	mbranes and upper re- skin absorption. on. ical properties have no ion on Ingredie on EC No./ EC Index No. 231-211-8	t been thoroughly investigated
NA	CAS RTE 744 TS80 777	GHS Hazard Phrases: H316: Causes mild skin ir GHS Precaution Phrases No phrases apply. GHS Response Phrases P332+313: If skin irritation GHS Storage and Dispo Please refer to Section 7 Adverse Human Health Effects and Symptoms: Sect # Hazardous Comp GS # HAZARDUS Comp REACH Registrat 47-40-7 Potassium chloride 01-2119539416-36 78-77-0 Potassium phosphat	rritation. s: n occurs, get medical advice/attention. sal Phrases: for Storage and Section 13 for Disposal infor Causes mild skin irritation Material may be irritating to the mucous me May be harmful by inhalation, ingestion, or May cause eye or respiratory system irritati To the best of our knowledge, the toxicolog ion 3. Composition/Informati bonents (Chemical Name)/ Lion No. 0.2 %	mbranes and upper re- skin absorption. on. ical properties have no ion on Ingredie on EC No./ EC Index No. 231-211-8 NA 231-913-4	ot been thoroughly investigated Ints GHS Classification
	CAS RTE 744 FS80 777 FC66 764	GHS Hazard Phrases: H316: Causes mild skin in GHS Precaution Phrases No phrases apply. GHS Response Phrases P332+313: If skin irritation GHS Storage and Dispo Please refer to Section 7 Adverse Human Health Effects and Symptoms: Sect #/ Hazardous Comp CS # REACH Registrat 47-40-7 Potassium chloride 950000 01-2119539416-36 78-77-0 Potassium phosphat 315500 01-2119490224-41 47-14-5 Sodium chloride	rritation. s: n occurs, get medical advice/attention. sal Phrases: for Storage and Section 13 for Disposal infor Causes mild skin irritation Material may be irritating to the mucous me May be harmful by inhalation, ingestion, or May cause eye or respiratory system irritati To the best of our knowledge, the toxicolog ion 3. Composition/Informati ponents (Chemical Name)/ tion No. 0.2 % re, Monobasic 0.2 %	mbranes and upper resiskin absorption. on. ical properties have no ical proper	ot been thoroughly investigated ents GHS Classification No GHS classifications apply



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			Dihaala					
-	2-85-6 Sodium	phosphate,	Dibasic, heptahydrat	te 2.2 %	616-512-8 NA	Skin Corr. 2: H315 Eve Damage 2A: H319		
		Serum Albur	min (BSA)	0 5 0/		Eye Damage 2A: H319		
	96000		IIII (DOA)	2.5 %	232-936-2 NA	Acute Tox.(O) 4: H302		
	2-62-6 D-Gluco 00000	ose		0.5 %	207-757-8 NA	No data available.		
-	2-18-5 Water			86.4 %	231-791-2	No GHS classifications apply		
2001	10000 na				NA			
			Section	on 4. First Aid I	Measures			
l.1	Description of	First Aid						
	Measures:							
	In Case of Inha	alation:			e artificial respiration c	or give oxygen by trained personne		
		-	Get immediate m					
	In Case of Skir	Contact:	-		•	st 15 minutes. Remove contamina		
		Contract	-	dical attention if sympto		-		
	In Case of Eye	Contact:	Hold eyelids apa and tested by me		enty of water for at lea	ist 15 minutes. Have eyes examin		
	In Coop of Ing		-	•	non in conceinus. Nou			
	In Case of Inge	estion:				er give anything by mouth to an		
			medical personn	inconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by				
			-	5. Fire Fightin				
					•	• •		
.1	Suitable Exting	guishing	Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.					
	Media:		Use water spray to cool fire-exposed containers. A solid water stream may be inefficient.					
		inguishing	g A solid water stre	eam may be inefficient.				
	Media:		N I I (111					
.2	Hazards:	operties ar	ndNo data available	е.				
	nazarus:		Ne dete eveilebl					
			No data available	e.				
	Flash Pt:		No data.					
	Explosive Limi		LEL: No data. UEL: No data.					
	Autoignition P		No data.					
5.3	Fire Fighting Ir	nstructions	s : As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved equivalent), and full protective gear to prevent contact with skin and eyes.					
			Section 6.	Accidental Rele	ease Measures	S		
5.1	Protective Pred	cautions,	Avoid breathing	vapors and provide ade	equate ventilation.			
Protective Equipment an		d As conditions wa	arrant, wear a NIOSH a	pproved self-contained	d breathing apparatus, or respirate			
Emergency Procedures:			and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).					
.2 Environmental			Take steps to avoid release into the environment, if safe to do so.					
Precautions:								
5.3	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 regulation							
	Up:							
	op:							



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	Section 7. Handling and Storage		
g: Avoid	breathing dust/fume/gas/mist/vapours/spray.		
-	I prolonged or repeated exposure.		
	container tightly closed.		
: Store	in accordance with information listed on the product insert.		
Section 8	8. Exposure Controls/Personal Protection		
Parameters:			
Controls:			
ng Controls Use p	process enclosures, local exhaust ventilation, or other engineering controls to control airborne		
n etc.): levels	s below recommended exposure limits.		
protection equipment:	:		
ction: Safety	y glasses		
Gloves: Comp	patible chemical-resistant gloves		
ective Clothing:Lab c	oat		
y Equipment NIOS	H approved respirator, as conditions warrant.		
ype):			
Work/Hygienic/Maintenan Do not take internally.			
ce Practices: Facilities storing or utilizing this material should be equipped with an eyewash and a safety sho			
Wash thoroughly after handling. No data available.			
	nd Chemical Properties		
states:	[]Gas [X]Liquid []Solid		
ce and Odor:	A liquid		
	No data.		
oint:	No data.		
int:	No data.		
	No data.		
on Rate:	No data.		
ity (solid, gas):	No data available.		
Limits:	LEL: No data. UEL: No data.		
ssure (vs. Air or mm	No data.		
·			
sity (vs. Air = 1):	No data.		
• • •	No data.		
ravity (Water = 1):	No data.		
ravity (Water = 1): in Water:	No data.		
ravity (Water = 1): in Water: /ater Partition			
sity	y (Water = 1): ater:		



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	Autoigniti	on Pt:	No data.					
	Decompo	sition Tempera	ture: No data.					
	Viscosity:	:	No data.					
.2	Other Info	rmation						
	Percent V	olatile:	No data.					
			Section 10. Stabilit	ty and Reacti	vity			
0.1	Reactivity	:	No data available.					
0.2	Stability:		Unstable [] Stable [X]					
0.3	Stability N	lote(s):	Stable if stored in accordance with	th information listed of	on the product	insert.		
	Polymeriz	ation:	Will occur [] Will not occur	[X]				
0.4	Condition	s To Avoid:	No data available.					
0.5	Incompati	ibility - Material	s No data available.					
	To Avoid:							
0.6	Hazardou	S	No data available.					
	Decompo							
	Byproduc	ts:						
			Section 11. Toxicolo	ogical Informa	ation			
1.1	Informatio	on on	The toxicological effects of this p	roduct have not beer	n thoroughly st	udied.		
	Toxicolog	ical Effects:	Sodium phosphate, Dibasic - Toxicity Data: Oral LD50 (rat): 12930 mg/kg;					
	Chronic T	oxicological	Only select Registry of Toxic Effe		stances (RTE	CS) data is pre	esented here.	
	Effects:		See actual entry in RTECS for complete information.					
_	_		Sodium phosphate, Dibasic RTE					
	nogenicity:		NTP? No IARC Monographs		egulated? No			
CAS #			nponents (Chemical Name)	NTP	IARC	ACGIH	OSHA	
		Potassium chlori		n.a.	n.a.	n.a.	n.a.	
			bhate, Monobasic	n.a.	n.a.	n.a.	n.a.	
-		Sodium chloride		n.a.	n.a.	n.a.	n.a.	
			ate, Dibasic, heptahydrate	n.a.	n.a.	n.a.	n.a.	
		Bovine Serum A	lbumin (BSA)	n.a.	n.a.	n.a.	n.a.	
-		D-Glucose		n.a.	n.a.	n.a.	n.a.	
773	2-18-5	Water		n.a.	n.a.	n.a.	n.a.	
			Section 12. Ecolog	gical Informat	ion			
2.1	Toxicity:		Avoid release into the environme	nt.				
			Runoff from fire control or dilution	n water may cause p	ollution.			
2.2	Persisten	ce and	No data available.					
	Degradab	ility:						
2.3	Bioaccum		No data available.					
Potential:								
12.4 Mobility in Soil: No data available.								
2.4	5 Results of PBT and vPv		3 No data available.					
2.4 2.5	Results of							
	Results of assessme	ent:						



	Section 13. Dispo	sal Considera	ations	
13.1 Waste	Disposal Method: Dispose in accordance with loc	al, state, and federa	l regulations.	
	Section 14. Trar	nsport Informa	ation	
14.1 LAND	TRANSPORT (US DOT):			
DOT Prop	er Shipping Name: Not dangerous goods.			
DOT Haza	rd Class:			
UN/NA Nu	mber:			
	TRANSPORT (European ADR/RID):			
	Shipping Name: Not dangerous goods.			
UN Numb				
Hazard Cl				
	ANSPORT (ICAO/IATA): A Shipping Name: Not dangerous goods.			
Additional Tra		ocal state and fode	ral regulations	
Additional Tra		ज्जित, अवार, वागि स्थि	121 159012110115.	
	Santian 15 Dag	laton Inform	ation	
	Section 15. Regu	•	auun	
EPA SARA (S CAS #	uperfund Amendments and Reauthorization Act Hazardous Components (Chemical Name)	Of 1986) Lists S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
7447-40-7	Potassium chloride	No	No	No
7778-77-0	Potassium phosphate, Monobasic	No	No	No
7647-14-5	Sodium chloride	No	No	No
7782-85-6	Sodium phosphate, Dibasic, heptahydrate	No	No	No
9048-46-8	Bovine Serum Albumin (BSA)	No	No	No
492-62-6	D-Glucose	No	No	No
7732-18-5	Water	No	No	No
CAS #	Hazardous Components (Chemical Name)	Other US EPA o	r State Lists	ł
7447-40-7	Potassium chloride		No; CWA NPDES:	: No; TSCA: Yes -
		Inventory; CA P	ROP.65: No	
7778-77-0	Potassium phosphate, Monobasic	CAA HAP,ODC: Inventory; CA P	No; CWA NPDES: ROP.65: No	: No; TSCA: Yes -
7647-14-5	Sodium chloride	CAA HAP,ODC: Inventory; CA P	No; CWA NPDES: ROP.65: No	: No; TSCA: Yes -
7782-85-6	Sodium phosphate, Dibasic, heptahydrate	CAA HAP,ODC: PROP.65: No	No; CWA NPDES:	: No; TSCA: No; CA
9048-46-8	Bovine Serum Albumin (BSA)		No; CWA NPDES: ; CA PROP.65: No	
492-62-6	D-Glucose	CAA HAP,ODC: PROP.65: No	No; CWA NPDES:	: No; TSCA: No; CA
7732-18-5	Water	CAA HAP,ODC: Inventory; CA P	No; CWA NPDES: ROP.65: No	: No; TSCA: Yes -



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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:	11/01/2018
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.



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	Section 1. I	dentification of the Substance	e/Mixture and of th	ne Company/Ur	ndertaking
.1	Product Code:	600199			laontaning
.'	Product Name:	Extracellular Nuclear Greer	n™ Reagent (5 mM)	
.2		the substance or mixture and			
.2	Relevant identified uses of	For research use only, not f	-		
1.2		-		nary use.	
1.3	Details of the Supplier of the Company Name:	Cayman Chemical Compan	οv		
		1180 E. Ellsworth Rd.	,		
		Ann Arbor, MI 48108			
	Web site address:	www.caymanchem.com			
	Information:	Cayman Chemical Compan	ny	+1 (734	4)971-3335
1.4	Emergency telephone num				
	Emergency Contact:	CHEMTREC Within USA ar		-	0)424-9300
		CHEMTREC Outside USA			3)527-3887
		Section 2. Haza	ards Identific	ation	
2.1	Classification of the Subst	ance or Mixture:			
	Flammable Liquids, Cate	gory 4			
2.2	Label Elements:				
	GHS Signal Word: GHS Hazard Phrases:	Warning			
	GHS Signal Word: GHS Hazard Phrases: H227: Combustible liquid.	-			
	GHS Signal Word: GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases	:			
	GHS Signal Word: GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he	: at/sparks/open flames/hot surfa			
	GHS Signal Word: GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective glo	: at/sparks/open flames/hot surfa			
	GHS Signal Word: GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective glo GHS Response Phrases:	: at/sparks/open flames/hot surfa			
	GHS Signal Word: GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective glo GHS Response Phrases: No phrases apply.	: at/sparks/open flames/hot surfa ves/protective clothing/eye prot			
	GHS Signal Word: GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective glo GHS Response Phrases: No phrases apply. GHS Storage and Dispos	: eat/sparks/open flames/hot surfa wes/protective clothing/eye prot eal Phrases:	tection/face protecti	on}.	
2.3	GHS Signal Word: GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective glo GHS Response Phrases: No phrases apply. GHS Storage and Dispos Please refer to Section 7 fo	: at/sparks/open flames/hot surfa ves/protective clothing/eye prot	tection/face protecti	on}.	nown toxicity into the body.
	GHS Signal Word: GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective glo GHS Response Phrases: No phrases apply. GHS Storage and Dispos Please refer to Section 7 fo Adverse Human Health	: bat/sparks/open flames/hot surfa oves/protective clothing/eye prot bal Phrases: or Storage and Section 13 for Di	tection/face protecti Disposal information ry toxic materials or	on}.	nown toxicity into the body.
	GHS Signal Word: GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective glo GHS Response Phrases: No phrases apply. GHS Storage and Dispos Please refer to Section 7 fo Adverse Human Health Effects and Symptoms:	: aat/sparks/open flames/hot surfa wes/protective clothing/eye prot al Phrases: or Storage and Section 13 for Di DMSO has the potential to carr DMSO is readily absorbed throu Material may be irritating to the	bisposal information ry toxic materials or ough skin.	on}. materials of unki es and upper res	
	GHS Signal Word: GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective glo GHS Response Phrases: No phrases apply. GHS Storage and Dispos Please refer to Section 7 fo Adverse Human Health Effects and Symptoms:	: at/sparks/open flames/hot surfa wes/protective clothing/eye prot al Phrases: or Storage and Section 13 for Di DMSO has the potential to carr DMSO is readily absorbed throu Material may be irritating to the May be harmful by inhalation, ir	Disposal information ry toxic materials or ough skin. e mucous membrane ngestion, or skin ab	on}. materials of unki es and upper res sorption.	
	GHS Signal Word: GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective glo GHS Response Phrases: No phrases apply. GHS Storage and Dispos Please refer to Section 7 fo Adverse Human Health Effects and Symptoms:	: bat/sparks/open flames/hot surfa ives/protective clothing/eye prot bal Phrases: for Storage and Section 13 for Di DMSO has the potential to carry DMSO is readily absorbed throu Material may be irritating to the May be harmful by inhalation, ir May cause eye, skin, or respira	Disposal information ry toxic materials or bugh skin. a mucous membran ngestion, or skin ab atory system irritatio	on}. materials of unki es and upper res sorption. n.	piratory tract.
	GHS Signal Word: GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective glo GHS Response Phrases: No phrases apply. GHS Storage and Dispos Please refer to Section 7 fo Adverse Human Health Effects and Symptoms:	: bat/sparks/open flames/hot surfatives/protective clothing/eye protective clothing/eye protective clothing/eye protection 13 for Distribution 13	Disposal information ry toxic materials or ough skin. a mucous membran- ngestion, or skin ab atory system irritation the toxicological pro-	on}. materials of unki es and upper res sorption. n. uperties have not	piratory tract. been thoroughly investigated
	GHS Signal Word: GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective glo GHS Response Phrases: No phrases apply. GHS Storage and Dispos Please refer to Section 7 fo Adverse Human Health Effects and Symptoms:	: bat/sparks/open flames/hot surfa ives/protective clothing/eye prot bal Phrases: for Storage and Section 13 for Di DMSO has the potential to carry DMSO is readily absorbed throu Material may be irritating to the May be harmful by inhalation, ir May cause eye, skin, or respira	Disposal information ry toxic materials or ough skin. a mucous membran- ngestion, or skin ab atory system irritation the toxicological pro-	on}. materials of unki es and upper res sorption. n. uperties have not	piratory tract. been thoroughly investigated
2.3	GHS Signal Word: GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective glo GHS Response Phrases: No phrases apply. GHS Storage and Dispos Please refer to Section 7 fo Adverse Human Health Effects and Symptoms: Secti	at/sparks/open flames/hot surfatives/protective clothing/eye protective clothi	Disposal information ry toxic materials or ough skin. a mucous membran- ngestion, or skin ab atory system irritation the toxicological pro-	on}. materials of unki es and upper res sorption. n. uperties have not	piratory tract. been thoroughly investigated



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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.
4.2	Important Symptoms and	Exposure may cause: hematuria or shortness of breath (dyspnea).
	Effects, Both Acute and Delayed:	Exposure may cause: gastrointestinal irritation with nausea, vomiting, diarrhea, headache, 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 cool fire-exposed containers.
	Unsuitable Extinguishing Media:	A solid water stream may be inefficient.
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.
		Vapors can travel to a source of ignition and flash back.
		No data available.
	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
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. Note: Combustible as diluted in dimethyl sulfoxide
		Section 6. Accidental Release Measures
6.1	Protective Precautions, Protective Equipment and Emergency Procedures:	Avoid breathing vapors 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		r Contain spill and collect, as appropriate.
		\mathbf{g} Transfer to a chemical waste container for disposal in accordance with local regulations.



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		Section 7. Handling and Storage
7.1	Precautions To Be Taken A	Avoid breathing dust/fume/gas/mist/vapours/spray.
	in Handling: A	Avoid prolonged or repeated exposure.
	k	Keep away from sources of ignition.
	Т	ake precautionary measures against static discharge.
7.2	Precautions To Be Taken	Keep away from heat, sparks, and flame.
	J	Keep container tightly closed.
	S	Store in accordance with information listed on the product insert.
	Other Precautions:	łygroscopic
	Section	on 8. Exposure Controls/Personal Protection
8.1	Exposure Parameters:	
8.2	Exposure Controls:	
8.2.1	Engineering Controls	Jse process enclosures, local exhaust ventilation, or other engineering controls to control airborne
	(Ventilation etc.):	evels below recommended exposure limits.
8.2.2	Personal protection equipn	nent:
	Eye Protection:	Safety glasses
	Protective Gloves:	Compatible chemical-resistant gloves
	Other Protective Clothing:L	ab coat
	Respiratory Equipment	IIOSH approved respirator, as conditions warrant.
	(Specify Type):	
	Work/Hygienic/Maintenan	Do not take internally.
	ce Practices: F	acilities storing or utilizing this material should be equipped with an eyewash and a safety shower.
	V	Vash thoroughly after handling.
	Ν	No data available.
9.1		to data available. Ction 9. Physical and Chemical Properties
9.1	Se	to data available. Ction 9. Physical and Chemical Properties
9.1	See Information on Basic Physic	No data available. Ction 9. Physical and Chemical Properties cal and Chemical Properties
9.1	Sec Information on Basic Physic Physical States:	No data available. Ction 9. Physical and Chemical Properties Cal and Chemical Properties []Gas [X]Liquid []Solid
9.1	Sec Information on Basic Physic Physical States: Appearance and Odor:	No data available. ction 9. Physical and Chemical Properties cal and Chemical Properties []Gas [X] Liquid []Solid A solution in DMSO
9.1	Sec Information on Basic Physic Physical States: Appearance and Odor: pH:	No data available. Ction 9. Physical and Chemical Properties cal and Chemical Properties []Gas [X] Liquid []Solid A solution in DMSO No data.
9.1	Sec Information on Basic Physic Physical States: Appearance and Odor: pH: Melting Point:	No data available. ction 9. Physical and Chemical Properties cal and Chemical Properties []Gas [X] Liquid []Gas [X] Liquid []Solid A solution in DMSO No data. No data.
9.1	Sec Information on Basic Physic Physical States: Appearance and Odor: pH: Melting Point: Boiling Point:	Ao data available. Ction 9. Physical and Chemical Properties cal and Chemical Properties []Gas [X] Liquid []Solid A solution in DMSO No data. No data. No data.
9.1	Sec Information on Basic Physic Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt:	Ao data available. Ction 9. Physical and Chemical Properties cal and Chemical Properties []Gas [X] Liquid []Solid A solution in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup
9.1	Sec Information on Basic Physic Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate:	Ao data available. Ction 9. Physical and Chemical Properties cal and Chemical Properties []Gas [X] Liquid []Solid A solution in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup No data.
9.1	Sec Information on Basic Physic Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas):	Ao data available. Ction 9. Physical and Chemical Properties cal and Chemical Properties []Gas [X]Liquid []Solid A solution in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup No data. No data. No data available. LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C
9.1	Sec Information on Basic Physic Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas): Explosive Limits: Vapor Pressure (vs. Air or r Hg):	All data available. ction 9. Physical and Chemical Properties cal and Chemical Properties []Gas [X]Liquid []Solid A solution in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup No data. No data.
9.1	Sec Information on Basic Physic Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas): Explosive Limits: Vapor Pressure (vs. Air or r	All data available. ction 9. Physical and Chemical Properties cal and Chemical Properties []Gas [X]Liquid []Solid A solution in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup No data. No data.
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9.1	Sec Information on Basic Physic Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas): Explosive Limits: Vapor Pressure (vs. Air or r Hg): Vapor Density (vs. Air = 1):	All data available. ction 9. Physical and Chemical Properties cal and Chemical Properties []Gas [X]Liquid []Solid A solution in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup No data. No data available. LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C mm No data. No data.
9.1	Sec Information on Basic Physic Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas): Explosive Limits: Vapor Pressure (vs. Air or r Hg): Vapor Density (vs. Air = 1): Specific Gravity (Water = 1)	Alo data available. ction 9. Physical and Chemical Properties cal and Chemical Properties []Gas [X] Liquid []Solid A solution in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup No data. No data. No data available. LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C mm No data. No data.



	Autoigni	tion Pt:	215.00 C				
	•	osition Temperat					
	Viscosit	-	No data.				
9.2	Other Inf						
-	Percent	Volatile:	No data.				
			Section 10. Stability	and Reactiv	vitv		
0.1	Reactivit	v.	No data available.		vity		
10.1	Stability	-	Unstable [] Stable [X]				
10.3	Stability		Stable if stored in accordance with in	formation listed (on the product	insert	
10.0	Polymer		Will occur [] Will not occur [X			insert.	
10.4	-	ns To Avoid:	heat, flames, and sparks	I			
10.4		tibility - Materials					
0.5	To Avoid	-	alkali metals				
	TO AVOID	1.	phosphorus halides				
			strong acids				
			strong oxidizing agents				
			strong reducing agents				
10.6	Hazardo	us	carbon monoxide				
	Decomp	osition or	carbon dioxide				
	Byprodu		sulfur oxides				
			Section 11. Toxicolog	ical Informa	ation		
1.1	Informat	ion on	The toxicological effects of this prod			udied.	
		gical Effects:	DMSO - Toxicity Data: Oral LD50 (ra				/kg: Oral LD50
		g	(mouse): 7,920 mg/kg; Skin LD50 (n		-		-
			Inhalation LC50 (rat): >1,600 mg/m3		J. J, -	- ()	, J. J,
			DMSO - Irritation Data: Eyes (rabbit)		kin (rabbit): 50	0 mg (24h) mil	d;
	Chronic	Toxicological	DMSO - Investigated as a drug, mut	agen, primary irrit	ant, reproduc	tive effector, ar	nd tumorigen.
	Effects:		Only select Registry of Toxic Effects	of Chemical Sub	stances (RTE	CS) data is pre	esented here.
			See actual entry in RTECS for comp	lete information.			
			DMSO RTECS Number: PV6210000)			
Carci	nogenicity	:	NTP? No IARC Monographs?	Io OSHA Re	egulated? No		
CAS	#	Hazardous Com	ponents (Chemical Name)	NTP	IARC	ACGIH	OSHA
	NA	Extracellular Nucl	ear Green™ Reagent (5 mM)	n.a.	n.a.	n.a.	n.a.
			Section 12. Ecologic	al Informat	ion		
2.1	Toxicity		Avoid release into the environment.				
			Runoff from fire control or dilution wa	ater may cause po	ollution.		
12.2	Persiste	nce and	No data available.				
	Degrada	bility:					
12.3	Bioaccu	mulative	No data available.				
	Potentia	l:					
12.4	Mobility	in Soil:	No data available.				
12.5	Results	of PBT and vPvB	No data available.				
	assessm	ient:					
12.6	Other ad	verse effects:	No data available.				
12.6	Other ad	verse effects:	No data available.				



		Section 13. Dispos	al Considerat	ions	
13.1 Waste I	Disposal Method:	Dispose in accordance with loca	I, state, and federal r	egulations.	
		Section 14. Trans	sport Informat	ion	
14.1 LAND	TRANSPORT (US	DOT):			
DOT Prop	er Shipping Name	: Combustible liquid, n.o.s. (E	Dimethyl sulfoxide)		
DOT Haza					
UN/NA Nu		NA1993	Packing Grou	ıp:	III
	TRANSPORT (Eur	. ,			
	Shipping Name:	Not dangerous goods.			
UN Numbe Hazard Cla		1993	Packing Grou	ib:	111
		1.4.7.4.			
	ANSPORT (ICAO/ A Shipping Name:	Not dangerous goods.			
			and state and foders	Iroquiationa	
Additional Tra Information:		Transport in accordance with lo When sold in quantities of less t		•	pted Quantity Code of
information.		E1, E2, E4, or E5, this item mee	-	-	-
		Therefore packaging does not h		1 1	
		Section 15. Regul	atory Informa	tion	
EPA SARA (S	uperfund Amendn	nents and Reauthorization Act of	of 1986) Lists		
CAS #	Hazardous Com	ponents (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
NA	Extracellular Nuc	clear Green™ Reagent (5 mM)	No	No	No
CAS #	Hazardous Com	ponents (Chemical Name)	Other US EPA or S	State Lists	
NA	Extracellular Nuc	lear Green™ Reagent (5 mM)	CAA HAP,ODC: N PROP.65: No	o; CWA NPDES: No	; TSCA: No; CA
Regulatory Inf	ormation	This SDS was prepared in acco	rdance with 29 CFR ²	1910.1200 and Regul	lation (EC)
Statement:		No.1272/2008.			
		Section 16. Oth	ner Information	า	
Revision Date:	:	11/01/2018			
Additional Info	ormation About	No data available.			
This Product:					
Company Poli	cy or Disclaimer:	DISCLAIMER: This information	is believed to be accu	arate and represents	the best information
		currently available to us. Howev		-	
		express or implied, with respect			
		use. Users should make their o	wn investigations to c	letermine the suitabili	ity of the information for
		their particular purposes.			



	Section 1. I	dentification of the Substance/Mixt	ure and of t	he Company/Ur	ndertaking
.1	Product Code:	600239			
	Product Name:	Permeable Nuclear Red™ Reage	ent (5 mM)		
.2		-		alact.	
.2	Relevant identified uses of	the substance or mixture and uses	-		
		· · · · · · · · · · · · · · · · · · ·	nan or veteri	inary use.	
1.3	Details of the Supplier of the	•			
	Company Name:	Cayman Chemical Company 1180 E. Ellsworth Rd.			
		Ann Arbor, MI 48108			
	Web site address:	www.caymanchem.com			
	Information:	Cayman Chemical Company		+1 (734	4)971-3335
1.4	Emergency telephone num	iber:			
	Emergency Contact:	CHEMTREC Within USA and Ca	nada:	+1 (80	0)424-9300
		CHEMTREC Outside USA and C	anada:	+1 (703	3)527-3887
		Section 2. Hazards	Identific	ation	
2.1	Classification of the Subst	ance or Mixture:			
	Flammable Liquids, Cate				
2.2	Label Elements:	gory 4			
	GHS Signal Word: GHS Hazard Phrases:	Warning			
	GHS Hazard Phrases:	Warning			
	-	-			
	GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases	-	- No smoking	Э.	
	GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he			-	
	GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he	eat/sparks/open flames/hot surfaces}.		-	
	GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective glo	eat/sparks/open flames/hot surfaces}.		-	
	GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective glo GHS Response Phrases	eat/sparks/open flames/hot surfaces}.		-	
	GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective glo GHS Response Phrases No phrases apply. GHS Storage and Dispos	eat/sparks/open flames/hot surfaces}.	/face protect	ion}.	
2.3	GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective glo GHS Response Phrases No phrases apply. GHS Storage and Dispos	eat/sparks/open flames/hot surfaces}. oves/protective clothing/eye protection cal Phrases: or Storage and Section 13 for Disposa DMSO has the potential to carry toxic	/face protect al information c materials or	ion}.	nown toxicity into the body.
2.3	 GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective gld GHS Response Phrases No phrases apply. GHS Storage and Dispose Please refer to Section 7 for 	at/sparks/open flames/hot surfaces}. oves/protective clothing/eye protection and Phrases: or Storage and Section 13 for Disposa DMSO has the potential to carry toxic DMSO is readily absorbed through sl	/face protect al information c materials or kin.	ion}. i. materials of unk	
2.3	GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective glo GHS Response Phrases: No phrases apply. GHS Storage and Dispos Please refer to Section 7 fe Adverse Human Health	at/sparks/open flames/hot surfaces}. oves/protective clothing/eye protection and Phrases: or Storage and Section 13 for Disposa DMSO has the potential to carry toxic DMSO is readily absorbed through sl Material may be irritating to the mucc	/face protect al information c materials or kin. us membran	ion}. [.] materials of unk es and upper res	
2.3	GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective glo GHS Response Phrases: No phrases apply. GHS Storage and Dispos Please refer to Section 7 fe Adverse Human Health	at/sparks/open flames/hot surfaces}. oves/protective clothing/eye protection cal Phrases: or Storage and Section 13 for Disposa DMSO has the potential to carry toxic DMSO is readily absorbed through sl Material may be irritating to the mucc May be harmful by inhalation, ingesti	/face protect al information c materials or kin. us membran on, or skin ab	ion}. . materials of unk es and upper res psorption.	
2.3	GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective glo GHS Response Phrases: No phrases apply. GHS Storage and Dispos Please refer to Section 7 fe Adverse Human Health	at/sparks/open flames/hot surfaces}. oves/protective clothing/eye protection and Phrases: or Storage and Section 13 for Disposa DMSO has the potential to carry toxic DMSO is readily absorbed through sl Material may be irritating to the mucc May be harmful by inhalation, ingestic May cause eye, skin, or respiratory s	/face protect al information c materials or kin. us membran on, or skin ab ystem irritatio	ion}. . materials of unk es and upper res osorption. on.	spiratory tract.
2.3	GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective glo GHS Response Phrases: No phrases apply. GHS Storage and Dispos Please refer to Section 7 fr Adverse Human Health Effects and Symptoms:	at/sparks/open flames/hot surfaces}. by est/sparks/open flames/hot surfaces}. by est/protective clothing/eye protection and Phrases: or Storage and Section 13 for Disposa DMSO has the potential to carry toxic DMSO is readily absorbed through sl Material may be irritating to the mucc May be harmful by inhalation, ingestin May cause eye, skin, or respiratory s To the best of our knowledge, the tox	/face protect al information c materials or cin. us membran on, or skin ab ystem irritatic icological pro	ion}. • materials of unk • s and upper res psorption. pperties have not	piratory tract. been thoroughly investigated
	GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective gld GHS Response Phrases No phrases apply. GHS Storage and Dispos Please refer to Section 7 fe Adverse Human Health Effects and Symptoms:	at/sparks/open flames/hot surfaces}. by es/protective clothing/eye protection sal Phrases: or Storage and Section 13 for Dispose DMSO has the potential to carry toxic DMSO is readily absorbed through sl Material may be irritating to the mucc May be harmful by inhalation, ingestic May cause eye, skin, or respiratory s To the best of our knowledge, the tox on 3. Composition/Infor	/face protect al information c materials or kin. on, or skin ab ystem irritatic icological pro mation c	ion}. • materials of unk • s and upper res psorption. • pperties have not	piratory tract. been thoroughly investigated
CAS	GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective gld GHS Response Phrases: No phrases apply. GHS Storage and Dispos Please refer to Section 7 f Adverse Human Health Effects and Symptoms: Section Section	at/sparks/open flames/hot surfaces}. by es/protective clothing/eye protection al Phrases: or Storage and Section 13 for Dispose DMSO has the potential to carry toxic DMSO is readily absorbed through sl Material may be irritating to the mucc May be harmful by inhalation, ingestic May cause eye, skin, or respiratory s To the best of our knowledge, the tox on 3. Composition/Infor onents (Chemical Name)/ Conce	/face protect al information c materials or cin. us membran on, or skin ab ystem irritatic icological pro	ion}. materials of unk es and upper res poorption. on. operties have not on Ingrediei EC No./	piratory tract. been thoroughly investigated
CAS	GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective gld GHS Response Phrases No phrases apply. GHS Storage and Dispos Please refer to Section 7 fr Adverse Human Health Effects and Symptoms: Section S# / Hazardous Comp REACH Registration	at/sparks/open flames/hot surfaces}. by es/protective clothing/eye protection al Phrases: or Storage and Section 13 for Disposa DMSO has the potential to carry toxic DMSO is readily absorbed through sk Material may be irritating to the mucc May be harmful by inhalation, ingestic May cause eye, skin, or respiratory s To the best of our knowledge, the tox On 3. Composition/Infor onents (Chemical Name)/ on No.	/face protect al information c materials or kin. ous membran on, or skin ab ystem irritatic icological pro mation c ntration	ion}. materials of unk es and upper res poorption. perties have not on Ingrediel EC No./ EC Index No.	piratory tract. been thoroughly investigated nts GHS Classification
CAS	GHS Hazard Phrases: H227: Combustible liquid. GHS Precaution Phrases P210: Keep away from {he P280: Wear {protective gld GHS Response Phrases No phrases apply. GHS Storage and Dispos Please refer to Section 7 fr Adverse Human Health Effects and Symptoms: Section S# / Hazardous Comp REACH Registration	at/sparks/open flames/hot surfaces}. by es/protective clothing/eye protection al Phrases: or Storage and Section 13 for Dispose DMSO has the potential to carry toxic DMSO is readily absorbed through sl Material may be irritating to the mucc May be harmful by inhalation, ingestic May cause eye, skin, or respiratory s To the best of our knowledge, the tox on 3. Composition/Infor onents (Chemical Name)/ Conce	/face protect al information c materials or kin. ous membran on, or skin ab ystem irritatic icological pro mation c ntration	ion}. materials of unk es and upper res poorption. on. operties have not on Ingrediei EC No./	piratory tract. been thoroughly investigated



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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 personne Get immediate medical attention.
	In Case of Skin Contact:	Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminat 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 examine 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.
.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
.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:	
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.
		Vapors can travel to a source of ignition and flash back.
		No data available.
	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
.3	-	: 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. Note: Combustible as diluted in dimethyl sulfoxide
		Section 6. Accidental Release Measures
5.1	Protective Precautions, Protective Equipment and Emergency Procedures:	Avoid breathing vapors and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirato and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
.2	Environmental Precautions:	Take steps to avoid release into the environment, if safe to do so.
.3	Methods and Material For	Contain spill and collect, as appropriate.
	Containment and Cleanin	gTransfer to a chemical waste container for disposal in accordance with local regulations.
	Up:	
	Up.	



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		Section 7. Handling and Storage
7.1	Precautions To Be Taken	Avoid breathing dust/fume/gas/mist/vapours/spray.
	in Handling:	Avoid prolonged or repeated exposure.
		Keep away from sources of ignition.
		Take precautionary measures against static discharge.
7.2		Keep away from heat, sparks, and flame.
	in Storing:	Keep container tightly closed.
		Store in accordance with information listed on the product insert.
	Other Precautions:	Hygroscopic
		ion 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.):	levels below recommended exposure limits.
8.2.2	· · · · · · · · · · · · · · · ·	
	Eye Protection:	Safety glasses
	Protective Gloves:	Compatible chemical-resistant gloves
	Other Protective Clothing	
	Respiratory Equipment	NIOSH approved respirator, as conditions warrant.
	(Specify Type):	
	Work/Hygienic/Maintenan	
	ce Practices:	Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.
		Wash thoroughly after handling. No data available.
		ection 9. Physical and Chemical Properties
9.1	Information on Basic Phys	sical and Chemical Properties
9.1	Information on Basic Phys Physical States:	sical and Chemical Properties []Gas [X]Liquid []Solid
9.1	Information on Basic Phys Physical States: Appearance and Odor:	sical and Chemical Properties []Gas [X] Liquid [] Solid A solution in DMSO
9.1	Information on Basic Phys Physical States: Appearance and Odor: pH:	sical and Chemical Properties [] Gas [X] Liquid [] Solid A solution in DMSO No data.
9.1	Information on Basic Physical States: Appearance and Odor: pH: Melting Point:	sical and Chemical Properties [] Gas [X] Liquid [] Solid A solution in DMSO No data. No data.
9.1	Information on Basic Physical States: Appearance and Odor: pH: Melting Point: Boiling Point:	sical and Chemical Properties [] Gas [X] Liquid [] Solid A solution in DMSO No data. No data. No data.
9.1	Information on Basic Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt:	sical and Chemical Properties []Gas [X] Liquid []Solid A solution in DMSO No data. No data. No data. No data. No data. 89.00 C Method Used:
9.1	Information on Basic Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate:	sical and Chemical Properties [] Gas [X] Liquid [] Solid A solution in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup No data.
9.1	Information on Basic Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas):	sical and Chemical Properties []Gas [X]Liquid []Solid A solution in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup No data. No data. No data.
9.1	Information on Basic Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas): Explosive Limits:	sical and Chemical Properties []Gas [X]Liquid []Solid A solution in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup No data. No data. No data available. LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C
9.1	Information on Basic Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas): Explosive Limits: Vapor Pressure (vs. Air or	sical and Chemical Properties []Gas [X]Liquid []Solid A solution in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup No data. No data. No data available. LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C
9.1	Information on Basic Physical States: Appearance and Odor: pH: Melting Point: Flash Pt: Evaporation Rate: Flammability (solid, gas): Explosive Limits: Vapor Pressure (vs. Air on Hg):	sical and Chemical Properties []Gas [X]Liquid []Solid A solution in DMSO No data. No data. 89.00 C Method Used: Closed Cup No data. No data available. LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C r mm No data.
9.1	Information on Basic Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas): Explosive Limits: Vapor Pressure (vs. Air of Hg): Vapor Density (vs. Air = 1	sical and Chemical Properties []Gas [X]Liquid []Solid A solution in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup No data. No data available. LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C r mm No data.): No data.
9.1	Information on Basic Physical States: Appearance and Odor: pH: Melting Point: Flash Pt: Evaporation Rate: Flammability (solid, gas): Explosive Limits: Vapor Pressure (vs. Air or Hg): Vapor Density (vs. Air = 1) Specific Gravity (Water =	sical and Chemical Properties []Gas [X]Liquid []Solid A solution in DMSO No data. No data. No data. 89.00 C Method Used: Closed Cup No data. No data available. LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C r mm No data.): No data.
9.1	Information on Basic Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas): Explosive Limits: Vapor Pressure (vs. Air of Hg): Vapor Density (vs. Air = 1	sical and Chemical Properties []Gas [X] Liquid []Solid A solution in DMSO No data. No data. No data. No data. 89.00 C Mo data. 89.00 C Mo data. No data. No data. No data. No data. No data. No data available. LEL: LEL: 3.5% at 25.0 C VEL: 42.0% at 25.0 C rmm No data.): No data. 1): No data.



ent (5 mM)	Revision: 11/01/2018
tivity	

	Autoignition Pt:	215.0	00 C				
	Decomposition Temperat						
	Viscosity:	No da					
2	Other Information						
.2	Percent Volatile:	No da	ata				
				d Poacti	vitv		
	Depativity		on 10. Stability a		vity		
D.1	Reactivity:	No data avai					
).2	Stability:	Unstable [<i>с</i>			
0.3	Stability Note(s):		red in accordance with info	mation listed (on the product	insert.	
	Polymerization:	Will occur [
).4	Conditions To Avoid:	heat, flames,	-				
.5	Incompatibility - Materials						
	To Avoid:	alkali metals					
		phosphorus					
		strong acids					
		strong oxidiz					
		strong reduc					
0.6	Hazardous	carbon mono					
	Decomposition or	carbon dioxid					
	Byproducts:	sulfur oxides	3				
		Sectio	n 11. Toxicologic	al Informa	ation		
.1	Information on	The toxicolog	gical effects of this product	have not beer	n thoroughly st	udied.	
	Toxicological Effects:	DMSO - Tox	kicity Data: Oral LD50 (rat):	14,500 mg/kg	; Skin LD50 (ra	at): 40,000 mg/	kg; Oral LD50
		(mouse): 7,9	920 mg/kg; Skin LD50 (moi	(sa). 50 000 m	a/ka [.] Skin TDI	O (woman): 1	900 ma/ka
		(, , ,	,, _,	13e). 30,000 m	g/ng, enin 121		,ooo mg/kg,
			C50 (rat): >1,600 mg/m3 (4	-	g/ng, enii 121		,800 Mg/kg,
		Inhalation LC		h);			
	Chronic Toxicological	Inhalation LC DMSO - Irrita	C50 (rat): >1,600 mg/m3 (4	h); 00 mg mild; Sl	kin (rabbit): 50	0 mg (24h) mile	d;
	Chronic Toxicological Effects:	Inhalation LC DMSO - Irrita DMSO - Inve	C50 (rat): >1,600 mg/m3 (4 ation Data: Eyes (rabbit): 1	h); 00 mg mild; SI en, primary irri	kin (rabbit): 50 tant, reproduct	0 mg (24h) mile ive effector, ar	d; id tumorigen.
	-	Inhalation LC DMSO - Irrita DMSO - Inve Only select F	C50 (rat): >1,600 mg/m3 (4 ation Data: Eyes (rabbit): 1 estigated as a drug, mutag	h); 00 mg mild; Sl en, primary irri Chemical Sub	kin (rabbit): 50 tant, reproduct	0 mg (24h) mile ive effector, ar	d; id tumorigen.
	-	Inhalation LC DMSO - Irrita DMSO - Inve Only select F See actual e	C50 (rat): >1,600 mg/m3 (4 ation Data: Eyes (rabbit): 1 estigated as a drug, mutag Registry of Toxic Effects of	h); 00 mg mild; Sl en, primary irri Chemical Sub	kin (rabbit): 50 tant, reproduct	0 mg (24h) mile ive effector, ar	d; id tumorigen.
arcir	-	Inhalation LC DMSO - Irrita DMSO - Inve Only select F See actual e	C50 (rat): >1,600 mg/m3 (4 ation Data: Eyes (rabbit): 1 estigated as a drug, mutag Registry of Toxic Effects of entry in RTECS for complet	h); 00 mg mild; Sl en, primary irri Chemical Sub e information.	kin (rabbit): 50 tant, reproduct	0 mg (24h) mile ive effector, ar	d; id tumorigen.
	Effects:	Inhalation LC DMSO - Irrita DMSO - Inve Only select F See actual e DMSO RTEC NTP? No	C50 (rat): >1,600 mg/m3 (4 ation Data: Eyes (rabbit): 1 estigated as a drug, mutag Registry of Toxic Effects of entry in RTECS for complet CS Number: PV6210000 IARC Monographs? No	h); 00 mg mild; Sl en, primary irri Chemical Sub e information.	kin (rabbit): 50 tant, reproduct ostances (RTE)	0 mg (24h) mile ive effector, ar	d; id tumorigen.
AS #	Effects:	Inhalation LC DMSO - Irrita DMSO - Inve Only select F See actual e DMSO RTEC NTP? No ponents (Che	C50 (rat): >1,600 mg/m3 (4 ation Data: Eyes (rabbit): 1 estigated as a drug, mutag Registry of Toxic Effects of entry in RTECS for complet CS Number: PV6210000 IARC Monographs? No emical Name)	h); 00 mg mild; Sl en, primary irri Chemical Sub e information. OSHA Re	kin (rabbit): 50 tant, reproduct ostances (RTE) egulated? No	0 mg (24h) mile ive effector, ar CS) data is pre	d; id tumorigen. sented here.
AS #	Effects: nogenicity: # Hazardous Com	Inhalation LC DMSO - Irrita DMSO - Inve Only select F See actual e DMSO RTEC NTP? No ponents (Che ar Red [™] Rea	C50 (rat): >1,600 mg/m3 (4 ation Data: Eyes (rabbit): 1 estigated as a drug, mutag Registry of Toxic Effects of entry in RTECS for complet CS Number: PV6210000 IARC Monographs? No emical Name)	h); 00 mg mild; SI en, primary irri Chemical Sub e information. OSHA Re NTP n.a.	kin (rabbit): 50 tant, reproduct ostances (RTE) egulated? No IARC n.a.	D mg (24h) mile ive effector, ar CS) data is pre	d; id tumorigen. sented here. OSHA
AS #	Effects: nogenicity: # Hazardous Com	Inhalation LC DMSO - Irrita DMSO - Inve Only select F See actual e DMSO RTEC NTP? No ponents (Che ar Red™ Rea	C50 (rat): >1,600 mg/m3 (4 ation Data: Eyes (rabbit): 1 estigated as a drug, mutag Registry of Toxic Effects of entry in RTECS for complet CS Number: PV6210000 IARC Monographs? No emical Name) agent (5 mM)	h); 00 mg mild; SI en, primary irri Chemical Sub e information. OSHA Re NTP n.a.	kin (rabbit): 50 tant, reproduct ostances (RTE) egulated? No IARC n.a.	D mg (24h) mile ive effector, ar CS) data is pre	d; id tumorigen. sented here. OSHA
AS #	Effects: mogenicity: # Hazardous Com NA Permeable Nucle	Inhalation LC DMSO - Irrita DMSO - Inve Only select F See actual e DMSO RTEC NTP? No ponents (Che ar Red [™] Rea Secti Avoid release	C50 (rat): >1,600 mg/m3 (4 ation Data: Eyes (rabbit): 1 estigated as a drug, mutag Registry of Toxic Effects of entry in RTECS for complet CS Number: PV6210000 IARC Monographs? No emical Name) agent (5 mM)	h); 00 mg mild; SI en, primary irri Chemical Sub e information. OSHA Re NTP n.a. Informat	kin (rabbit): 50 tant, reproduct ostances (RTE) egulated? No IARC n.a. ion	D mg (24h) mile ive effector, ar CS) data is pre	d; id tumorigen. sented here. OSHA
AS #	Effects: mogenicity: # Hazardous Com NA Permeable Nucle	Inhalation LC DMSO - Irrita DMSO - Inve Only select F See actual e DMSO RTEC NTP? No ponents (Che ar Red [™] Rea Secti Avoid release	C50 (rat): >1,600 mg/m3 (4 ation Data: Eyes (rabbit): 1 estigated as a drug, mutag Registry of Toxic Effects of entry in RTECS for complet CS Number: PV6210000 IARC Monographs? No emical Name) agent (5 mM) ion 12. Ecologica is into the environment. fire control or dilution wate	h); 00 mg mild; SI en, primary irri Chemical Sub e information. OSHA Re NTP n.a. Informat	kin (rabbit): 50 tant, reproduct ostances (RTE) egulated? No IARC n.a. ion	D mg (24h) mile ive effector, ar CS) data is pre	d; id tumorigen. sented here. OSHA
2.1	Effects: mogenicity: # Hazardous Com NA Permeable Nucle Toxicity:	Inhalation LC DMSO - Irrita DMSO - Inve Only select F See actual e DMSO RTEC NTP? No ponents (Che ar Red™ Rea Secti Avoid release Runoff from	C50 (rat): >1,600 mg/m3 (4 ation Data: Eyes (rabbit): 1 estigated as a drug, mutag Registry of Toxic Effects of entry in RTECS for complet CS Number: PV6210000 IARC Monographs? No emical Name) agent (5 mM) ion 12. Ecologica is into the environment. fire control or dilution wate	h); 00 mg mild; SI en, primary irri Chemical Sub e information. OSHA Re NTP n.a. Informat	kin (rabbit): 50 tant, reproduct ostances (RTE) egulated? No IARC n.a. ion	D mg (24h) mile ive effector, ar CS) data is pre	d; id tumorigen. sented here. OSHA
2.1 2.2	Effects: mogenicity: # Hazardous Com NA Permeable Nucle Toxicity: Persistence and	Inhalation LC DMSO - Irrita DMSO - Inve Only select F See actual e DMSO RTEC NTP? No ponents (Che ar Red™ Rea Secti Avoid release Runoff from	C50 (rat): >1,600 mg/m3 (4 ation Data: Eyes (rabbit): 1 estigated as a drug, mutag Registry of Toxic Effects of entry in RTECS for complet CS Number: PV6210000 IARC Monographs? No emical Name) agent (5 mM) ion 12. Ecologica se into the environment. fire control or dilution wate ilable.	h); 00 mg mild; SI en, primary irri Chemical Sub e information. OSHA Re NTP n.a. Informat	kin (rabbit): 50 tant, reproduct ostances (RTE) egulated? No IARC n.a. ion	D mg (24h) mile ive effector, ar CS) data is pre	d; id tumorigen. sented here. OSHA
2.1 2.2	Effects: mogenicity: # Hazardous Com NA Permeable Nucle Toxicity: Persistence and Degradability:	Inhalation LC DMSO - Irrita DMSO - Inve Only select F See actual e DMSO RTEC NTP? No ponents (Che ar Red [™] Rea Secti Avoid release Runoff from t	C50 (rat): >1,600 mg/m3 (4 ation Data: Eyes (rabbit): 1 estigated as a drug, mutag Registry of Toxic Effects of entry in RTECS for complet CS Number: PV6210000 IARC Monographs? No emical Name) agent (5 mM) ion 12. Ecologica se into the environment. fire control or dilution wate ilable.	h); 00 mg mild; SI en, primary irri Chemical Sub e information. OSHA Re NTP n.a. Informat	kin (rabbit): 50 tant, reproduct ostances (RTE) egulated? No IARC n.a. ion	D mg (24h) mile ive effector, ar CS) data is pre	d; id tumorigen. sented here. OSHA
AS # 2.1 2.2	Effects: mogenicity: # Hazardous Com NA Permeable Nucle Toxicity: Persistence and Degradability: Bioaccumulative	Inhalation LC DMSO - Irrita DMSO - Inve Only select F See actual e DMSO RTEC NTP? No ponents (Che ar Red [™] Rea Secti Avoid release Runoff from t	C50 (rat): >1,600 mg/m3 (4 ation Data: Eyes (rabbit): 1 estigated as a drug, mutag Registry of Toxic Effects of entry in RTECS for complet CS Number: PV6210000 IARC Monographs? No emical Name) agent (5 mM) ion 12. Ecologica e into the environment. fire control or dilution wate ilable.	h); 00 mg mild; SI en, primary irri Chemical Sub e information. OSHA Re NTP n.a. Informat	kin (rabbit): 50 tant, reproduct ostances (RTE) egulated? No IARC n.a. ion	D mg (24h) mile ive effector, ar CS) data is pre	d; id tumorigen. sented here. OSHA
2.1 2.2 2.3	Effects: mogenicity: # Hazardous Com NA Permeable Nucle Toxicity: Persistence and Degradability: Bioaccumulative Potential:	Inhalation LC DMSO - Irrita DMSO - Irrita Only select F See actual e DMSO RTEC NTP? No ponents (Che ar Red [™] Rea Secti Avoid release Runoff from f No data avai No data avai	C50 (rat): >1,600 mg/m3 (4 ation Data: Eyes (rabbit): 1 estigated as a drug, mutag Registry of Toxic Effects of entry in RTECS for complet CS Number: PV6210000 IARC Monographs? No emical Name) agent (5 mM) ion 12. Ecologica se into the environment. fire control or dilution wate ilable. ilable.	h); 00 mg mild; SI en, primary irri Chemical Sub e information. OSHA Re NTP n.a. Informat	kin (rabbit): 50 tant, reproduct ostances (RTE) egulated? No IARC n.a. ion	D mg (24h) mile ive effector, ar CS) data is pre	d; id tumorigen. sented here. OSHA
2.1 2.2 2.3 2.4	Effects: mogenicity: # Hazardous Com NA Permeable Nucle Toxicity: Persistence and Degradability: Bioaccumulative Potential: Mobility in Soil:	Inhalation LC DMSO - Irrita DMSO - Irrita Only select F See actual e DMSO RTEC NTP? No ponents (Che ar Red [™] Rea Secti Avoid release Runoff from f No data avai No data avai	C50 (rat): >1,600 mg/m3 (4 ation Data: Eyes (rabbit): 1 estigated as a drug, mutag Registry of Toxic Effects of entry in RTECS for complet CS Number: PV6210000 IARC Monographs? No emical Name) agent (5 mM) ion 12. Ecologica se into the environment. fire control or dilution wate ilable. ilable.	h); 00 mg mild; SI en, primary irri Chemical Sub e information. OSHA Re NTP n.a. Informat	kin (rabbit): 50 tant, reproduct ostances (RTE) egulated? No IARC n.a. ion	D mg (24h) mile ive effector, ar CS) data is pre	d; id tumorigen. sented here.
CAS #	Effects: Mogenicity: # Hazardous Com NA Permeable Nucle Toxicity: Persistence and Degradability: Bioaccumulative Potential: Mobility in Soil: Results of PBT and vPvB	Inhalation LC DMSO - Irrita DMSO - Irrita Only select F See actual e DMSO RTEC NTP? No ponents (Che ar Red [™] Rea Secti Avoid release Runoff from f No data avai No data avai	C50 (rat): >1,600 mg/m3 (4 ation Data: Eyes (rabbit): 1 estigated as a drug, mutag Registry of Toxic Effects of entry in RTECS for complet CS Number: PV6210000 IARC Monographs? No emical Name) agent (5 mM) ion 12. Ecologica se into the environment. fire control or dilution wate ilable. ilable. ilable.	h); 00 mg mild; SI en, primary irri Chemical Sub e information. OSHA Re NTP n.a. Informat	kin (rabbit): 50 tant, reproduct ostances (RTE) egulated? No IARC n.a. ion	D mg (24h) mile ive effector, ar CS) data is pre	d; id tumorigen. sented here.



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Revision: 11/01/2018

			to Regulation (EC) No. 1907/2006 as a	and Minturn and -	fthe Commany // /	ndortoking
		Section 1. Id	dentification of the Substar	nce/Mixture and o	r the Company/U	ndertaking
1	Product		600243			
	Product	t Name:	Triton X-100 Permeabiliz	zation Control		
2	Relevar	nt identified uses of	the substance or mixture a	and uses advised a	against:	
	Releva	ant identified uses:	For research use only, n	ot for human or vet	erinary use.	
3	Details	of the Supplier of th	ne Safety Data Sheet:			
	Comp	any Name:	Cayman Chemical Comp	bany		
			1180 E. Ellsworth Rd.			
	Wab a	ite eddroee.	Ann Arbor, MI 48108			
		site address: nation:	www.caymanchem.com	2001/	1 /72	4)071 2225
			Cayman Chemical Comp	bany	+1 (73	4)971-3335
.4	-	ency telephone num			4 (00	22 42 4 22 22
	Emerç	gency Contact:	CHEMTREC Within USA			00)424-9300
			CHEMTREC Outside US	SA and Canada:	+1 (70)3)527-3887
			Section 2. Ha	zards Identif	ication	
1	Classifi	cation of the Substa	ance or Mixture:			
	Skin (Corrosion/Irritation,	Category 3			
		-				
.2	Label E GHS S	lements: Signal Word:	Warning			
.2	GHS S	Signal Word:	Warning			
.2	GHS S GHS I		-			
.2	GHS S GHS I H316:	Signal Word: Hazard Phrases:	itation.			
.2	GHS 5 GHS 1 H316: GHS 1	Signal Word: Hazard Phrases: Causes mild skin irri	itation.			
.2	GHS S GHS I H316: GHS I No ph	Signal Word: Hazard Phrases: Causes mild skin irri Precaution Phrases irases apply.	itation.			
.2	GHS S GHS H316: GHS No ph GHS	Signal Word: Hazard Phrases: Causes mild skin irri Precaution Phrases Irases apply. Response Phrases:	itation.	ittention.		
.2	GHS 5 GHS 1 H316: GHS 1 No ph GHS 1 P332-	Signal Word: Hazard Phrases: Causes mild skin irri Precaution Phrases Irases apply. Response Phrases:	itation. : occurs, get medical advice/a	ittention.		
.2	GHS 5 GHS 1 H316: GHS 1 No ph GHS 1 P332- GHS 5	Signal Word: Hazard Phrases: Causes mild skin irri Precaution Phrases Irases apply. Response Phrases: +313: If skin irritation Storage and Dispos	itation. : occurs, get medical advice/a		on.	
	GHS S GHS I H316: GHS I No ph GHS I P332- GHS S Pleas	Signal Word: Hazard Phrases: Causes mild skin irri Precaution Phrases Irases apply. Response Phrases: ⊦313: If skin irritation Storage and Dispos e refer to Section 7 fo	itation. : occurs, get medical advice/a al Phrases:		on.	
.2	GHS S GHS I H316: GHS I No ph GHS I P332- GHS S Please Advers	Signal Word: Hazard Phrases: Causes mild skin irri Precaution Phrases Irases apply. Response Phrases: +313: If skin irritation Storage and Dispos e refer to Section 7 fo se Human Health	itation. : occurs, get medical advice/a al Phrases: or Storage and Section 13 for	r Disposal informati		spiratory tract.
	GHS S GHS I H316: GHS I No ph GHS I P332- GHS S Please Advers	Signal Word: Hazard Phrases: Causes mild skin irri Precaution Phrases rases apply. Response Phrases: ⊧313: If skin irritation Storage and Dispos e refer to Section 7 fo be Human Health a and Symptoms:	itation. : occurs, get medical advice/a al Phrases: or Storage and Section 13 for Causes mild skin irritation.	r Disposal information	anes and upper re	spiratory tract.
	GHS S GHS I H316: GHS I No ph GHS I P332- GHS S Please Advers	Signal Word: Hazard Phrases: Causes mild skin irri Precaution Phrases irases apply. Response Phrases: +313: If skin irritation Storage and Dispos e refer to Section 7 fo the Human Health and Symptoms:	itation. coccurs, get medical advice/a al Phrases: or Storage and Section 13 for Causes mild skin irritation. Material may be irritating to t May be harmful by inhalation May cause eye or respirator	r Disposal information the mucous membra n, ingestion, or skin y system irritation.	anes and upper rea	
	GHS S GHS I H316: GHS I No ph GHS I P332- GHS S Please Advers	Signal Word: Hazard Phrases: Causes mild skin irri Precaution Phrases irases apply. Response Phrases: +313: If skin irritation Storage and Dispos e refer to Section 7 fo the Human Health and Symptoms:	itation. coccurs, get medical advice/a al Phrases: or Storage and Section 13 for Causes mild skin irritation. Material may be irritating to t May be harmful by inhalation May cause eye or respirator	r Disposal information the mucous membra n, ingestion, or skin y system irritation.	anes and upper rea	spiratory tract. t been thoroughly investigate
	GHS S GHS I H316: GHS I No ph GHS I P332- GHS S Please Advers	Signal Word: Hazard Phrases: Causes mild skin irri Precaution Phrases rases apply. Response Phrases: +313: If skin irritation Storage and Dispos e refer to Section 7 fo the Human Health and Symptoms:	itation. coccurs, get medical advice/a al Phrases: or Storage and Section 13 for Causes mild skin irritation. Material may be irritating to t May be harmful by inhalation May cause eye or respirator	r Disposal information the mucous membra n, ingestion, or skin y system irritation. e, the toxicological p	anes and upper rea absorption. properties have no	t been thoroughly investigate
.3	GHS S GHS I H316: GHS I No ph GHS I P332- GHS S Please Advers Effects	Signal Word: Hazard Phrases: Causes mild skin irri Precaution Phrases irases apply. Response Phrases: +313: If skin irritation Storage and Dispos e refer to Section 7 for the Human Health and Symptoms:	itation. coccurs, get medical advice/a al Phrases: or Storage and Section 13 for Causes mild skin irritation. Material may be irritating to t May be harmful by inhalation May cause eye or respiratory To the best of our knowledge on 3. Composition pnents (Chemical Name)/	r Disposal information the mucous membra n, ingestion, or skin y system irritation. e, the toxicological p	anes and upper rea absorption. properties have no	t been thoroughly investigate
.3 2.AS 2.TE	GHS S GHS I H316: GHS I P332- GHS S Pleas Advers Effects	Signal Word: Hazard Phrases: Causes mild skin irri Precaution Phrases irases apply. Response Phrases: +313: If skin irritation Storage and Dispos e refer to Section 7 for the Human Health and Symptoms: Section Mazardous Composition	itation. coccurs, get medical advice/a al Phrases: or Storage and Section 13 for Causes mild skin irritation. Material may be irritating to t May be harmful by inhalation May cause eye or respiratory To the best of our knowledge on 3. Composition pnents (Chemical Name)/	r Disposal information the mucous membra n, ingestion, or skin y system irritation. e, the toxicological p n/Information	anes and upper rea absorption. properties have no On Ingredie EC No./	t been thoroughly investigate
.3	GHS S GHS I H316: GHS I P332- GHS S Please Advers Effects	Signal Word: Hazard Phrases: Causes mild skin irri Precaution Phrases rases apply. Response Phrases: +313: If skin irritation Storage and Dispos e refer to Section 7 for the Human Health and Symptoms: Section Hazardous Comports REACH Registration	itation. coccurs, get medical advice/a al Phrases: or Storage and Section 13 for Causes mild skin irritation. Material may be irritating to t May be harmful by inhalation May cause eye or respiratory To the best of our knowledge on 3. Composition pnents (Chemical Name)/	r Disposal information the mucous membra n, ingestion, or skin y system irritation. e, the toxicological p n/Information Concentration	anes and upper rea absorption. oroperties have no On Ingredie EC No./ EC Index No. 618-344-0	t been thoroughly investigate nts GHS Classification Acute Tox.(O) 4: H302 Skin Corr. 2: H315



Revision: 11/01/2018

		Section 4. First Aid Measures
4.1	Description of First Aid	
	Measures:	
	In Case of Inhalation:	Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
	In Case of Skin Contact:	Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
	In Case of Eye Contact:	Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.
	In Case of Ingestion:	Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
		Section 5. Fire Fighting Measures
5.1	Suitable Extinguishing	Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
	Media:	Use water spray to cool fire-exposed containers.
	Unsuitable Extinguishing Media:	g A solid water stream may be inefficient.
5.2	Flammable Properties an Hazards:	ndNo data available.
		No data available.
	Flash Pt:	No data.
	Explosive Limits:	LEL: No data. UEL: No data.
	Autoignition Pt:	No data.
5.3	Fire Fighting Instructions	s: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.
		Section 6. Accidental Release Measures
6.1	Protective Precautions,	Avoid breathing vapors and provide adequate ventilation.
	Protective Equipment an	d As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator,
	Emergency Procedures:	and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
6.2	Environmental Precautions:	Take steps to avoid release into the environment, if safe to do so.
6.3	Methods and Material Fo	r Contain spill and collect, as appropriate.
	Containment and Cleanir	ngTransfer to a chemical waste container for disposal in accordance with local regulations.
	Up:	
		Section 7. Handling and Storage
7.1	Precautions To Be Taken	Avoid breathing dust/fume/gas/mist/vapours/spray.
	in Handling:	Avoid prolonged or repeated exposure.
7.2	Precautions To Be Taken	NKeep 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	Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne							
0.2.1	(Ventilation etc.):	levels below recommended exposure limits.							
8.2.2	Personal protection equipment:								
	Eye Protection:	Safety glasses							
	Protective Gloves:	Compatible chemical-resistant gloves							
	Other Protective Clothing	J:Lab coat							
	Respiratory Equipment	approved respirator, as conditions warrant.							
	(Specify Type):								
	Work/Hygienic/Maintenar								
	ce Practices:								
		No data available.							
	S	ection 9. Physical and Chemical Properties							
9.1	Information on Basic Phys	sical and Chemical Properties							
	Physical States:	[]Gas [X]Liquid []Solid							
	Appearance and Odor:	A liquid							
	pH:	No data.							
	Melting Point:	No data.							
	Boiling Point:	No data.							
	Flash Pt:	No data.							
	Evaporation Rate:	No data.							
	Flammability (solid, gas):	No data available.							
	Explosive Limits:	LEL: No data. UEL: No data.							
	Vapor Pressure (vs. Air o Hg):	r mm No data.							
	Vapor Density (vs. Air = 1): No data.							
	Specific Gravity (Water =	1): No data.							
	Solubility in Water:	No data.							
	Octanol/Water Partition Coefficient:	No data.							
	Autoignition Pt:	No data.							
	Decomposition Temperat	ure: No data.							
	Viscosity:	No data.							
9.2	Other Information								
	Percent Volatile:	No data.							
		Section 10. Stability and Reactivity							
10.1	Reactivity:	No data available.							
10.2	Stability:	Unstable [] Stable [X]							
10.3	Stability Note(s):	Stable if stored in accordance with information listed on the product insert.							
	Polymerization:	Will occur [] Will not occur [X]							
10.4	Conditions To Avoid:	No data available.							
10.5	Incompatibility - Materials	s No data available.							
	To Avoid:								
10.6	Hazardous	No data available.							
		Multi-region form							



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	Decomp Byprodu	osition or Icts:							
			Sectio	n 11. Toxicolo	gical Inf	orma	tion		
11.1		ion on ogical Effects: Toxicological	Section 11. Toxicological Information The toxicological effects of this product have not been thoroughly studied. Triton X-100 - Toxicity Data: Oral LD50 (rat): 1900 mg/kg; Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information. Triton X-100 RTECS Number: YM0683332						
Carcinogenicity:			NTP? No IARC Monographs? No OSHA Regulated? No						
CAS #		Hazardous Com	mponents (Chemical Name)			ſP	IARC	ACGIH	OSHA
9002-93-1		Triton X-100				a.	n.a.	n.a.	n.a.
773	2-18-5	Water			n.a	a.	n.a.	n.a.	n.a.
			Sect	ion 12. Ecolog	ical Info	rmati	on		
12.1	Toxicity	:	Avoid release into the environment.						
			Runoff from fire control or dilution water may cause pollution.						
12.2		ence and No data available.							
12.3	Degrada Bioaccu Potentia	mulative	No data available.						
12.4	Mobility	in Soil:	No data available.						
12.5	Results	of PBT and vPvB	No data ava	ilable.					
	assessm	nent:							
12.6	Other ac	lverse effects:							
			Sectio	on 13. Disposa	I Consid	leratio	ons		
13.1	Waste D	isposal Method:	Dispose in a	accordance with local,	state, and fe	deral re	gulations.		
			Sec	tion 14. Transp	oort Info	rmati	on		
		RANSPORT (US E r Shipping Name: d Class:	•	gerous goods.					
U	N/NA Nun								
14.1		RANSPORT (Euro	-	-					
	nd/din si	hipping Name:	Not dan	igerous goods.					
A U	N Number azard Cla								
A U H	N Numbe azard Cla		ATA):						
A U H 14.3 IC	N Number azard Cla AIR TRA CAO/IATA	ss: ANSPORT (ICAO/I Shipping Name:	Not dan	igerous goods.					
A U H 14.3 IC Addit	N Number azard Cla AIR TRA	ss: ANSPORT (ICAO/I Shipping Name:	Not dan	igerous goods. n accordance with loca	I, state, and	federal	regulations.		



SAFETY DATA SHEET Triton X-100 Permeabilization Control

Revision: 11/01/2018

		Section 15. Regu	•		
		nents and Reauthorization Act	1	S. 304 RQ	C 242 (TDI)
CAS # 9002-93-1	Triton X-100	ponents (Chemical Name)	S. 302 (EHS)	No	S. 313 (TRI)
7732-18-5	Water		No	No	No
			-		
CAS #		ponents (Chemical Name)	Other US EPA o		N. 7004 V
9002-93-1	Triton X-100		Inventory, 8A PA	No; CWA NPDES: NR; CA PROP.65:	No
7732-18-5	Water		CAA HAP,ODC: Inventory; CA P	No; CWA NPDES: ROP.65: No	No; TSCA: Yes -
Regulatory Inf Statement:	formation	This SDS was prepared in acc No.1272/2008.	cordance with 29 CFI	R 1910.1200 and R	egulation (EC)
		Section 16. Ot	her Informati	on	
Revision Date	:	11/01/2018			
Additional Information About		No data available.			
		use. Users should make their their particular purposes.			



SAFETY DATA SHEET

Cell-Based Assay Neutrophil Isolation Histopaque®

Revision: 07/19/2018 Supersedes Revision: 01/22/2015

		acco	ding to Regulation (EC) No. 190	7/2006 as amended by	(EC) No. 1272/200	8		
		Section 1. Ic	lentification of the Substar	nce/Mixture and of t	the Company/Ur	dertaking		
1.1	Product Product		600612 Cell-Based Assay Neutro	ophil Isolation Histopa	aque®	Ŭ		
1.2	Relevar	t identified uses of	the substance or mixture a	and uses advised ag	gainst:			
		ant identified uses:	For research use only, no	-	-			
1.3	Details	of the Supplier of th	e Safety Data Sheet:		-			
		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 (734	971-3335		
.4	Emerge	ncy telephone num	ber:					
	Emerg	ency Contact:	CHEMTREC Within USA CHEMTREC Outside US			0)424-9300 8)527-3887		
			Section 2. Haz	zards Identific	cation			
2.1	Classifi	cation of the Substa	ince or Mixture:					
2.2	Label E	lements:						
	GHS S	Signal Word:	None					
	GHS Hazard Phrases:							
	Based on evaluation of currently available data this substance or mixture is not classifiable according to GHS.							
	GHS Precaution Phrases:							
	No phrases apply.							
	GHS Response Phrases:							
	No phrases apply.							
	GHS S	Storage and Dispos	al Phrases:					
	Please	e refer to Section 7 fo	r Storage and Section 13 for	Disposal information	ז.			
2.3			Material may be irritating to t			piratory tract.		
	Effects	· ·	May be harmful by inhalation	-	-			
			May cause eye, skin, or resp			haan tharoughly investigated		
			I a the best at our knowledge					
			To the best of our knowledge					
			on 3. Composition					
CAS RTE	6 # / CS #	Section	on 3. Composition					



SAFETY DATA SHEET Cell-Based Assay Neutrophil Isolation Histopaque®

Revision: 07/19/2018 Supersedes Revision: 01/22/2015

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



SAFETY DATA SHEET

Cell-Based Assay Neutrophil Isolation Histopaque® Revision: 07/19/2018 Supersedes Revision: 01/22/2015

	HEMICAL	Superseues Revision. 01/22/2015
8.2	Exposure Controls:	
8.2.1		Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne
	(Ventilation etc.):	levels below recommended exposure limits.
8.2.2	Personal protection equip	ment:
	Eye Protection:	Safety glasses
	Protective Gloves:	Compatible chemical-resistant gloves
	Other Protective Clothing:	Lab coat
	Respiratory Equipment	NIOSH approved respirator, as conditions warrant.
	(Specify Type):	
	Work/Hygienic/Maintenan	Do not take internally.
	ce Practices:	Facilities storing or utilizing this material should be equipped with an eyewash and a safety showed
		Wash thoroughly after handling.
		No data available.
	Se	ection 9. Physical and Chemical Properties
9.1	-	cal and Chemical Properties
	Physical States:	[]Gas [X]Liquid []Solid
	Appearance and Odor:	15 ml of Histopaque
	pH:	No data.
	Melting Point:	No data.
	Boiling Point:	No data.
	Flash Pt:	No data.
	Evaporation Rate:	No data.
	Flammability (solid, gas):	No data available.
	Explosive Limits:	LEL: No data. UEL: No data.
	Vapor Pressure (vs. Air or	mm No data.
	Hg):	
	Vapor Density (vs. Air = 1)	No data.
	Specific Gravity (Water = 1): No data.
	Solubility in Water:	No data.
	Octanol/Water Partition	No data.
	Coefficient:	
	Autoignition Pt:	No data.
	Decomposition Temperatu	re: No data.
	Viscosity:	No data.
9.2	Other Information	
	Percent Volatile:	No data.
		Section 10. Stability and Reactivity
10.1	Reactivity:	No data available.
10.2		Unstable [] Stable [X]
10.3	•	Stable if stored in accordance with information listed on the product insert.
		Will occur [] Will not occur [X]
10.4	-	No data available.
10.5	Incompatibility - Materials To Avoid:	Strong oxidizing agents
10.6		sodium oxides
10.6	Hazardous	Sourium Oxides
		Multi-region forma
		wuiti-region form



SAFETY DATA SHEET Cell-Based Assay Neutrophil Isolation Histopaque®

Revision: 07/19/2018 Supersedes Revision: 01/22/2015

		Sectio	on 11. Toxic	ological Inf	ormatio	n		
.1 Inform	nation on		ogical effects of thi				udied	
	blogical Effects:			is product have h		ouginy stu	iuleu.	
arcinogenio	-	NTP? No	IARC Monogra	aphs? No OS	SHA Regulat	ted? No		
CAS #	Hazardous Com			N1	-	ARC	ACGIH	OSHA
NA	Cell-Based Assa			n.a.	n.a.			
						i.a.	11.a.	n.a.
			tion 12. Eco	0	mation			
2.1 Toxici	ty:		se into the enviror		auco pollutic	n		
0.0 Dereia	tonoo ond	No data ava	n fire control or dilu	nion water may c	ause poliulio	лт.		
	tence and dability:	NO Gala ava						
-	cumulative	No data ava	ailable					
Poten		No dala an						
2.4 Mobili	ty in Soil:	No data ava	ailable.					
	ts of PBT and vPvB	No data av	ailable.					
asses	sment:							
2.6 Other	adverse effects:	No data av	ailable.					
		Section	on 13. Dispo	osal Consid	lerations	S		
3.1 Waste	Disposal Method:	Dispose in	accordance with lo	ocal, state, and fe	deral regula	tions.		
		Sec	tion 14. Tra	nsport Info	rmation			
14.1 LAND	TRANSPORT (US	DOT):		•				
DOT Pro	per Shipping Name	: Not da	ngerous goods.					
DOT Haz	ard Class:							
UN/NA N	umber:							
14.1 LAND	TRANSPORT (Eur	opean ADR/	RID):					
ADR/RID	Shipping Name:	Not da	ngerous goods.					
UN Numl								
Hazard C								
	RANSPORT (ICAO/	-						
	A Shipping Name:		ngerous goods.					
Additional T	ransport	Transport i	n accordance with	local, state, and	federal regu	lations.		
Information:								
		Sect	ion 15. Reg	ulatory Info	rmation			
EPA SARA (Superfund Amendn	nents and R	eauthorization Ac	ct of 1986) Lists				
CAS #	Hazardous Com	ponents (Cl	nemical Name)	S. 302 (EHS	5) S. 3	04 RQ	S. 313	3 (TRI)
NA	Cell-Based Assa Histopaque®	y Neutrophil	Isolation	No	No		No	
CAS #	Hazardous Com	ponents (Cl	nemical Name)	Other US EF	PA or State	Lists		
CA3 #	Hazardous Components (Chemical Name) Cell-Based Assay Neutrophil Isolation			<u> </u>				
NA	Cell-Based Assa Histopaque®	y Neutrophil	Isolation	CAA HAP,O PROP.65: N		VA NPDE	5: NO; TSCA:	NO; CA



SAFETY DATA SHEET

Cell-Based Assay Neutrophil Isolation Histopaque®

Revision: 07/19/2018 Supersedes Revision: 01/22/2015

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:	07/19/2018
Additional Information About	No data available.
This Product:	
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: 07/19/2018 Supersedes Revision: 03/02/2015

Product Name: RBC Lysis Buffer (10X) Relevant identified uses of the substance or mixture and uses advised against: Relevant identified uses Relevant identified uses: For research use only, not for human or veterinary use. Details of the Supplier of the Safety Data Sheet: Sector Parameterinary use. Company Name: Cayman Chemical Company 1180 E. Ellsworth Rd. Ann Arbor, MI 48108 Herein Parameterinary use. Web site address: www.caymanchem.com Information: Cayman Chemical Company +1 (734)971-3335 Emergency telephone number: Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300 CHEMTREC Outside USA and Canada: +1 (703)527-3887 Section 2. Hazards Identification 1 Classification of the Substance or Mixture: Acute Toxicity: Oral, Category 4 Serious Eye Damage/Eye Irritation, Category 2	1.1								
1 Product Code: 601077 Product Name: RBC Lysis Buffer (10X) 2 Relevant identified uses of the substance or mixture and uses advised against: Relevant identified uses: For research use only, not for human or veterinary use. 3 Details of the Supplier of the Safety Data Sheet: Company Name: Cayman Chemical Company 1180 E: Elisworth Rd. Ann Arbor, MI 48108 Web site address: www.caymanchem.com Information: Cayman Chemical Company *11 (734)971-3335 Emergency telephone number: Emergency Contact: CHEMTREC Within USA and Canada: +1 (703)527-3887 5 Section 2. Hazards Identification 1 Classification of the Substance or Mixture: Acute Toxicity: Oral, Category 4 Section 2. Hazards Identification 1 Classification of the Substance or Mixture: Acute Toxicity: Oral, Category 4 Serious Eye Damage/Eye Irritation, Category 2 2 Label Elements: Warning GHS Signal Word: Warning H319: Causes serious eye irritation. GHS Precaution Phrases: H320: Harmful if swallowed. H319: Causes serious eyei irritation.	1.1	acco	rding to Regulation (EC) No. 1907/2006 as amended by	/ (EC) No. 1272/2008					
Product Name: RBC Lysis Buffer (10X) 2 Relevant identified uses of the substance or mixture and uses advised against: Relevant identified uses: For research use only, not for human or veterinary use. 3 Details of the Supplier of the Safety Data Sheet: Company Name: Cayman Chemical Company 1180 E. Ellsworth Rd. Ann Arbor, MI 48108 Web site address: www.caymanchem.com Information: Cayman Chemical Company +1 (734)971-3335 4 Emergency telephone number: Emergency Contact: CHEMTREC Within USA and Canada: +1 Acute Toxicity: Oral, Category 4 Section 2. Hazards Identification 1 Classification of the Substance or Mixture: Acute Toxicity: Oral, Category 4 Seroius Eye Damage/Eye Irritation, Category 2 2 Label Elements: Varning GHS Hazard Phrases: H302: Harmful if swallowed. H319: Causes serious eye irritation. GHS Precaution Phrases: P264: Wash (hands) thoroughly after handling. P280: Waar (protective glows/protective clothing/eye protection/face protection). GHS Response Phrases: P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P302: Rammful if swamound.	1.1	Section 1. In	dentification of the Substance/Mixture and of	the Company/Undertaking					
2 Relevant identified uses of the substance or mixture and uses advised against: Relevant identified uses For research use only, not for human or veterinary use. 3 Details of the Supplier of the Safety Data Sheet: Company Name: Cayman Chemical Company 1180 E. Elisworth Rd. Ann Arbor, MI 49108 Web site address: www.caymanchem.com Information: Cayman Chemical Company +1 (734)971-3335 4 Emergency telephone number: Emergency Contact: CHEMTREC Within USA and Canada: +1 Mana Chemical Company +1 (703)527-3887 Section 2. Hazards Identification 1 Classification of the Substance or Mixture: Acute Toxicity: Oral, Category 4 Serious Eye Damage/Eye Irritation, Category 2 Label Elements: Warning GHS Signal Word: Wars: Causes serious eye initation. Harmful if swallowed. H39: Causes serious eye initation. GHS Hazard Phrases: P304: P304: Mash (hands) thoroughly after handling. P280: War (protective glowes/protective		Product Code:	601077						
Relevant identified uses: For research use only, not for human or veterinary use. 3 Details of the Supplier of the Safety Data Sheet: Company Name: Cayman Chemical Company 1180 E. Elisworth Rd. Ann Arbor, MI 48108 Web site address: www.caymanchem.com 1180 E. Elisworth Rd. Ann Arbor, MI 48108 Web site address: www.caymanchem.com +1 (734)971-3335 4 Emergency telephone number: Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300 CHEMTREC Outside USA and Canada: 4 Image: Contact: CHEMTREC Outside USA and Canada: +1 (703)527-3887 5 Section 2. HazardS Identification 1 Classification of the Substance or Mixture: Acute Toxicity: Oral, Category 4 Serious Eye Damage/Eye Irritation, Category 2 2 Label Elements: Varning GHS Signal Word: Warning H302: Harmful if swallowed. H319: Causes serious eye irritation. H319: Causes serious eye irritation. HS Precaution Phrases: P280: Wear (protective glowes/protective clothing/eye protection/face protection). GHS Response Phrases: P280: Wear (protective glowes/protective clothing/eye protection/face protection). GHS Response Phrases: P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P330: Rinse mout		Product Name:	RBC Lysis Buffer (10X)						
Relevant identified uses: For research use only, not for human or veterinary use. 3 Details of the Supplier of the Safety Data Sheet: Company Name: Cayman Chemical Company 1180 E. Elisworth Rd. Ann Arbor, MI 48108 Web site address: www.caymanchem.com 1180 E. Elisworth Rd. Ann Arbor, MI 48108 Web site address: www.caymanchem.com +1 (734)971-3335 4 Emergency telephone number: Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300 CHEMTREC Outside USA and Canada: 4 Image: Contact: CHEMTREC Outside USA and Canada: +1 (703)527-3887 5 Section 2. HazardS Identification 1 Classification of the Substance or Mixture: Acute Toxicity: Oral, Category 4 Serious Eye Damage/Eye Irritation, Category 2 2 Label Elements: Varning GHS Signal Word: Warning H302: Harmful if swallowed. H319: Causes serious eye irritation. H319: Causes serious eye irritation. HS Precaution Phrases: P280: Wear (protective glowes/protective clothing/eye protection/face protection). GHS Response Phrases: P280: Wear (protective glowes/protective clothing/eye protection/face protection). GHS Response Phrases: P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P330: Rinse mout	.2	Relevant identified uses of	the substance or mixture and uses advised a	gainst:					
 3 Details of the Supplier of the Safety Data Sheet: Company Name: Cayman Chemical Company 1180 E. Ellsworth Rd. Ann Arbor, MI 48108 Web site address: www.caymanchem.com Information: Cayman Chemical Company +1 (734)971-3335 4 Emergency telephone number: Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300 CHEMTREC Outside USA and Canada: +1 (703)527-3887 5 Cection 2. Hazards Identification 1 Classification of the Substance or Mixture: Acute Toxicity: Oral, Category 4 Serious Eye Damage/Eye Irritation, Category 2 2 Label Elements: H302: Harmful if swallowed. H302: Wear (protective gloves/protective clothing/eye protection/face protection). GHS Precaution Phrases: P284: Wash (hands) thoroughly after handling. P280: Wear (protective gloves/protective clothing/eye protection/face protection). GHS Response Phrases: P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P303: Rinse mouth. P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. 									
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 Emergency telephone number: Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300 CHEMTREC Outside USA and Canada: +1 (703)527-3887 Section 2. Hazards Identification 1 Classification of the Substance or Mixture: Acute Toxicity: Oral, Category 4 Serious Eye Damage/Eye Irritation, Category 2 2 Label Elements: Warning GHS Hazard Phrases: H302: Harmful if swallowed. H319: Causes serious eye irritation. GHS Precaution Phrases: P284: Wash (hands) thoroughly after handling. P280: Wear (protective gloves/protective clothing/eye protection/face protection). GHS Response Phrases: P301:4312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P330: Rines mouth. P330: Rines mouth. P330: Rines mouth. P330: Rines mouth. Firstern and easy to do. Continue rinsing.	.3	Details of the Supplier of the							
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 number: Emergency telephone number: Emergency telephone number: Emergency telephone number: Emergency contact: CHEMTREC Within USA and Canada: +1 (703)627-3887 Section 2. Hazards Identification 1 1 Classification of the Substance or Mixture: Acute Toxicity: Oral, Category 4 Serious Eye Damage/Eye Irritation, Category 2 2 Label Elements: GHS Signal Word: Warning GHS Hazard Phrases: H302: Harmful if swallowed. H319: Causes serious eye initiation. GHS Precaution Phrases: P264: Wash (hands) thoroughly after handling. P280: Wear (protective gloves/protective clothing/eye protection/face protection). GHS Response Phrases: P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P3030: Rinse mouth. P305:Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.			-						
Web site address: www.caymanchem.com Information: Cayman Chemical Company +1 (734)971-3335 Emergency telephone number: Ethergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300 CHEMTREC Outside USA and Canada: +1 (703)527-3887 Section 2. Hazards Identification 1 Classification of the Substance or Mixture: Acute Toxicity: Oral, Category 4 Serious Eye Damage/Eye Irritation, Category 2 Set Warning GHS Signal Word: Warning GHS Hazard Phrases: H30: Harmful if swallowed. H319: Causes serious eye irritation. GHS Precaution Phrases: P264: Wash (hands) thoroughly after handling. P280: Wear (protective gloves/protective clothing/eye protection/face protection). GHS Response Phrases: P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you teel unwell. P305: Rinse mouth. P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.									
Information: Cayman Chemical Company +1 (734)971-3335 4 Emergency telephone number: Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300 CHEMTREC Outside USA and Canada: +1 (703)527-3887 Section 2. Hazards Identification 1 Classification of the Substance or Mixture: Acute Toxicity: Oral, Category 4 Serious Eye Damage/Eye Irritation, Category 2 Chements: Warning GHS Signal Word: Warning GHS Hazard Phrases: H302: Harmful if swallowed. H319: Causes serious eye irritation. GHS Precaution Phrases: P264: Wash (hands) thoroughly after handling. P264: Wash (hands) thoroughly after handling. P280: Wear (protective gloves/protective clothing/eye protection/face protection). GHS Response Phrases: P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P305: Hisse mouth. P305: Hisse mouth. P305: Hisse mouth. P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.									
 4 Emergency telephone number: Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300 CHEMTREC Outside USA and Canada: +1 (703)527-3887 Section 2. Hazards Identification 1 Classification of the Substance or Mixture: Acute Toxicity: Oral, Category 4 Serious Eye Damage/Eye Irritation, Category 2 2 Label Elements: GHS Signal Word: Warning GHS Hazard Phrases: H302: Harmful if swallowed. H319: Causes serious eye irritation. GHS Precaution Phrases: P264: Wash (hands) thoroughly after handling. P280: Wear (protective gloves/protective clothing/eye protection/face protection). GHS Response Phrases: P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P305: Rinse mouth. P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. 			-						
Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300 CHEMTREC Outside USA and Canada: +1 (703)527-3887 Section 2. Hazards Identification 1 Classification of the Substance or Mixture: Acute Toxicity: Oral, Category 4 Serious Eye Damage/Eye Irritation, Category 2 2 Label Elements:				+1 (734)971-3335					
CHEMTREC Outside USA and Canada: +1 (703)527-3887 Section 2. Hazards Identification 1 Classification of the Substance or Mixture: Acute Toxicity: Oral, Category 4 Serious Eye Damage/Eye Irritation, Category 2 2 Label Elements: Image: CHS Signal Word: Warning GHS Nazard Phrases: H302: Harmful if swallowed. H319: Causes serious eye irritation. GHS Precaution Phrases: P264: Wash (hands) thoroughly after handling. P264: Wash (hands) thoroughly after handling. P280: Wear (protective gloves/protective clothing/eye protection/face protection). GHS Response Phrases: P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P302: H331: H338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.	1.4								
Section 2. Hazards Identification 1 Classification of the Substance or Mixture: Acute Toxicity: Oral, Category 4 Serious Eye Damage/Eye Irritation, Category 2 2 Label Elements:		Emergency Contact:							
 1 Classification of the Substance or Mixture: Acute Toxicity: Oral, Category 4 Serious Eye Damage/Eye Irritation, Category 2 2 Label Elements: 			CHEMTREC Outside USA and Canada:	+1 (703)527-3887					
Acute Toxicity: Oral, Category 4 Serious Eye Damage/Eye Irritation, Category 2 Label Elements:			Section 2. Hazards Identific	cation					
Serious Eye Damage/Eye Irritation, Category 2 Label Elements: Image: Signal Word: Warning GHS Signal Word: Warning GHS Hazard Phrases: H302: Harmful if swallowed. H319: Causes serious eye irritation. GHS Precaution Phrases: P264: Wash (hands) thoroughly after handling. P280: Wear (protective gloves/protective clothing/eye protection/face protection). GHS Response Phrases: P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P300: Rinse mouth. P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.	2.1	Classification of the Subst	ance or Mixture:						
2 Label Elements:		Acute Toxicity: Oral, Cat	egory 4						
Kissignal Word: Warning GHS Signal Word: Warning GHS Hazard Phrases: Handel Handel Handling H302: Harmful if swallowed. Hase serious eye irritation. H319: Causes serious eye irritation. GHS Precaution Phrases: P264: Wash {hands} thoroughly after handling. P280: Wear {protective gloves/protective clothing/eye protection/face protection}. GHS Response Phrases: P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P302: Rinse mouth. P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.		Serious Eye Damage/Eye	e Irritation, Category 2						
 GHS Hazard Phrases: H302: Harmful if swallowed. H319: Causes serious eye irritation. GHS Precaution Phrases: P264: Wash {hands} thoroughly after handling. P280: Wear {protective gloves/protective clothing/eye protection/face protection}. GHS Response Phrases: P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P300: Rinse mouth. P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. 	2.2	Label Elements:							
 GHS Hazard Phrases: H302: Harmful if swallowed. H319: Causes serious eye irritation. GHS Precaution Phrases: P264: Wash {hands} thoroughly after handling. P280: Wear {protective gloves/protective clothing/eye protection/face protection}. GHS Response Phrases: P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P300: Rinse mouth. P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. 									
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P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.		-							
to do. Continue rinsing.									
-									
1 J J T J J J I J I J J J J J J J J J J J		-	nersists, get medical advice/attention						
		F357+315. If eye initation							
		CHC Storage and Disper							
		GHS Storage and Dispos	al Phrases:	n					
				n.					
			al Phrases:	n.					
			al Phrases:	n.					
			al Phrases:	n.					
			al Phrases:	n.					
			al Phrases:	n.					



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

Harmful if swallowed.

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

May be harmful by inhalation or skin absorption.

May cause skin or 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
12125-02-9 BP4550000	Ammonium chloride	8.02 %	235-186-4 017-014-00-8	Acute Tox.(O) 4: H302 Eye Damage 2A: H319
298-14-6 FG1840000	Potassium hydrogen carbonate	1.0 %	206-059-0 NA	No data available.
194491-31-1 NA	EDTA, tetrasodium salt, hydrate	0.366 %	NA NA	Acute Tox.(O) 4: H302 Eye Damage 1: H318
7732-18-5 ZC0110000	Water	90.614 %	231-791-2 NA	No data available.

4.1	Description of First Aid	
	Measures:	
	In Case of Inhalation:	Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
	In Case of Skin Contact:	Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
	In Case of Eye Contact:	Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.
	In Case of Ingestion:	Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
		Section 5. Fire Fighting Measures
5.1	Suitable Extinguishing	Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
	Media:	Use water spray to cool fire-exposed containers.
	Unsuitable Extinguishing Media:	A solid water stream may be inefficient.
5.2	Flammable Properties an	dNo data available.
	Hazards:	No data available.
	Flash Pt:	No data.
	Explosive Limits:	LEL: No data. UEL: No data.
	Autoignition Pt:	No data.
5.3	Fire Fighting Instructions	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.



Multi-region format

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		Sect	ion 6. Accidenta	I Release Measures	
6.1	Protective Precautions,	Avoid	breathing vapors and pro	vide adequate ventilation.	
	Protective Equipment and	d As co	nditions warrant, wear a N	IIOSH approved self-contained breathing apparatu	s, or respirator,
	Emergency Procedures:	and a	ppropriate personal protec	ction (rubber boots, safety goggles, and heavy rubb	per gloves).
6.2	Environmental	Take	steps to avoid release into	o the environment, if safe to do so.	
	Precautions:				
6.3	Methods and Material For	r Conta	ain spill and collect, as app	propriate.	
	Containment and Cleanin	ng Trans	fer to a chemical waste co	ontainer for disposal in accordance with local regula	ations.
	Up:				
			Section 7. Hand	ling and Storage	
7.1	Precautions To Be Taken	Avoid	breathing dust/fume/gas/n	nist/vapours/spray.	
	in Handling:	Avoid	prolonged or repeated exp	posure.	
7.2	Precautions To Be Taken	Keep	container tightly closed.		
	in Storing:	Store	in accordance with information	ation listed on the product insert.	
	Sec	tion 8	3. Exposure Con	trols/Personal Protection	
8.1	Exposure Parameters:		· ·		
CAS #	# Chemical Name		Jurisdiction	Recommended Exposure Limits	Notations
12125	5-02-9 Ammonium chloride	;	ACGIH TLV	TLV: 10 mg/m3	
				STEL: 20 mg/m3	
			France VL	TWA: 10 mg/m3	
			Britain EH40	TWA: 10 mg/m3 () STEL: 20 mg/m3 ()	
8.2	Exposure Controls:				
8.2.1	Engineering Controls	Use p	rocess enclosures, local e	xhaust ventilation, or other engineering controls to	control airborne
	(Ventilation etc.):	-	below recommended expo		
8.2.2	Personal protection equi	pment:			
	Eye Protection:	Safety	/ glasses		
	Protective Gloves:	Comp	atible chemical-resistant g	loves	
	Other Protective Clothing	g:Lab co	pat		
	Respiratory Equipment	NIOSI	Happroved respirator, as o	conditions warrant.	
	(Specify Type):				
	Work/Hygienic/Maintenar	n Do no	t take internally.		
	ce Practices:	Facilit	ies storing or utilizing this	material should be equipped with an eyewash and	a safety shower.
			thoroughly after handling.		
		No da	ta available.		



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nformation on Basic Physical Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas): Explosive Limits:	ion 9. Physical and Chemical Properties and Chemical Properties []Gas [X] Liquid []Solid Solution No data. No data. No data. No data. No data. No data.	
Physical States: Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas):	[]Gas [X]Liquid []Solid Solution No data. No data. No data. No data. No data.	
Appearance and Odor: pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas):	Solution No data. No data. No data. No data.	
pH: Melting Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas):	No data. No data. No data. No data. No data.	
Melting Point: Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas):	No data. No data. No data.	
Boiling Point: Flash Pt: Evaporation Rate: Flammability (solid, gas):	No data. No data.	
Evaporation Rate: Flammability (solid, gas):	No data.	
Flammability (solid, gas):		
Flammability (solid, gas):	No data available.	
Explosive Limits:		
	LEL: No data. UEL: No data.	
Vapor Pressure (vs. Air or mm	n No data.	
Hg):		
Vapor Density (vs. Air = 1):	No data.	
Specific Gravity (Water = 1):	No data.	
Solubility in Water:	No data.	
Octanol/Water Partition	No data.	
Coefficient:		
Autoignition Pt:	No data.	
Decomposition Temperature:	No data.	
Viscosity:	No data.	
Other Information		
Percent Volatile:	No data.	
	Section 10. Stability and Reactivity	
Reactivity: No	data available.	
Stability: Uns	stable [] Stable [X]	
Stability Note(s): Stal	ble if stored in accordance with information listed on the product insert.	
Polymerization: Will	occur [] Will not occur [X]	
Conditions To Avoid: No	data available.	
Incompatibility - Materials stro	ng acids	
To Avoid: stro	ng bases	
stro	ong oxidizing agents	
Hazardous hyd	lrogen chloride gas	
Decomposition or nitro	ogen oxides	
Byproducts:		
8 8 0 0 A C N D F - F 8 8 F 0 I 7 F C	Specific Gravity (Water = 1): Solubility in Water: Octanol/Water Partition Coefficient: Autoignition Pt: Decomposition Temperature: /iscosity: Other Information Percent Volatile: Reactivity: Uns Stability Note(s): Sta Polymerization: Will Conditions To Avoid: No ncompatibility - Materials structure: Structure: Fo Avoid: structure: Hazardous hyd Decomposition or nitre	Specific Gravity (Water = 1): No data. Solubility in Water: No data. Solubility in Water: No data. Octanol/Water Partition No data. Coefficient: No data. Autoignition Pt: No data. Decomposition Temperature: No data. No data. No data. /iscosity: No data. Percent Volatile: No data. Percent Volatile: No data. Stability: Unstable [] Stability: Unstable [] Stability Note(s): Stable [stored in accordance with information listed on the product insert. Polymerization: Will occur [] Will occur [] Will not occur [X] Conditions To Avoid: No data available. Incompatibility - Materials strong bases strong oxidizing agents strong oxidizing agents Hazardous hydrogen chloride gas Decomposition or nitrogen oxides



SAFETY DATA SHEET

Carcino CAS # 12125	Chronic 1 Effects:	on on gical Effects: ſoxicological	Section 11. Toxicolog The toxicological effects of this prod Ammonium chloride - Toxicity Data LD50 (mouse): 1300 mg/kg; Intrape (mouse): 500 mg/kg;	duct have not beer : Oral LDLO (infan	St ation n thoroughly st	upersedes Revis	ion: 07/19/2018 ion: 03/02/2018	
Carcino CAS # 12125	Toxicolog Chronic 1 Effects:	gical Effects:	The toxicological effects of this proc Ammonium chloride - Toxicity Data LD50 (mouse): 1300 mg/kg; Intrape (mouse): 500 mg/kg;	duct have not beer : Oral LDLO (infan	ation n thoroughly st	-		
carcino CAS # 12125	Toxicolog Chronic 1 Effects:	gical Effects:	The toxicological effects of this proc Ammonium chloride - Toxicity Data LD50 (mouse): 1300 mg/kg; Intrape (mouse): 500 mg/kg;	duct have not beer : Oral LDLO (infan	n thoroughly st	udied.		
Carcino CAS # 12125	Effects:	Foxicological		entoneal LD50 (inc				
			Ammonium chloride - Investigated a Only select Registry of Toxic Effect See actual entry in RTECS for com Ammonium chloride RTECS Number	s of Chemical Sub plete information.			sented here.	
12125	ogenicity:		NTP? No IARC Monographs?	No OSHA Re	egulated? No			
		Hazardous Com	ponents (Chemical Name)	NTP	IARC	ACGIH	OSHA	
208-1	5-02-9	Ammonium chlori	de	n.a.	n.a.	n.a.	n.a.	
230-	14-6	Potassium hydrog	gen carbonate	n.a.	n.a.	n.a.	n.a.	
194491	1-31-1	EDTA, tetrasodiu	m salt, hydrate	n.a.	n.a.	n.a.	n.a.	
7732-	-18-5	Water		n.a.	n.a.	n.a.	n.a.	
			Section 12. Ecologi	cal Informat	ion			
2.1	Toxicity:		Avoid release into the environment.					
	2		Runoff from fire control or dilution water may cause pollution.					
2.2 I	Persistence and		No data available.					
Г	Degradab	oility:						
2.3 Bioaccumulative		nulative	No data available.					
I	Potential:	:						
2.4 I	Mobility i	n Soil:	No data available.					
	-		No data available.					
2.6	Other adv	verse effects:	No data available.					
			Section 13. Disposal	Considerat	ions			
3.1 \	Waste Dis	sposal Method:	•					
			Section 14. Transp	ort Informat	ion			
14.1	LAND TR	ANSPORT (US I	DOT):					
DO	T Proper	Shipping Name:	Not dangerous goods.					
	T Hazard							
UN	I/NA Num	ber:						
14.1	LAND TR	ANSPORT (Euro	ppean ADR/RID):					
AD	R/RID Sh	ipping Name:	Not dangerous goods.					
-	l Number: zard Clas							
14.3		NSPORT (ICAO/I	ATA):					
		Shipping Name:	Not dangerous goods.					
	onal Trans		Transport in accordance with local,	state, and federal	regulations.			
Informa				,				



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		Section 15. Regu	•			
	-	dments and Reauthorization Act				
CAS #		omponents (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)	
12125-02-9	Ammonium chloride		No	Yes 5000 LB	No	
298-14-6	Potassium hydrogen carbonate		No	No	No	
194491-31-1	EDTA, tetrasodium salt, hydrate		No	No	No	
7732-18-5	Water		No	No	No	
CAS #	Hazardous Components (Chemical Name)		Other US EPA or State Lists			
12125-02-9	Ammonium chloride		CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory, 8A CAIR; CA PROP.65: No			
298-14-6	Potassium hydrogen carbonate		CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No			
194491-31-1	EDTA, tetrasodium salt, hydrate		CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No			
7732-18-5	Water CAA HAP,ODC: No; CWA NPDES: No; TS Inventory; CA PROP.65: No				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. Ot	ther Information	on		
Revision Date:		07/19/2018				
Additional Information About		No data available.				
This Product:						
	cy or Disclaime	r DISCLAIMER: This information	n is believed to be ac	curate and represer	ts the best information	
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 warrant				
		-	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.				