

Page: 1 of 5

		00001			(EC) No. 1272/200	8	
		accon	ling to Regulation (EC) No. 1907/20	006 as amended by	(EC) NO. 1272/200	•	
		Section 1. Ide	entification of the Substance/I	/Mixture and of t	he Company/Ur	ndertaking	
.1	Produc	t Code:	22431				
	Produc	t Name:	Astragaloside I				
	Synony	vms:	(3.beta.,6.alpha.,16.beta.,20F	,20R,24S)-3-[(2,3-di-O-acetylbetaD-xylopyranosyl)oxy]-20,24-epo			
			16,25-dihydroxy-9,19-cyclola	anostan-6-yl .beta	D-glucopyranos	side;	
.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 Co			y			
			1180 E. Ellsworth Rd.				
			Ann Arbor, MI 48108				
		site address: nation:	www.caymanchem.com Cayman Chemical Company	,	1 (72)	4)971-3335	
				y	+1 (73	+)97 1-3333	
1.4	-	ency telephone numb gency Contact:	er: CHEMTREC Within USA and	d Canada:	±1 (80)	0)424-9300	
	Linei	gency contact.	CHEMTREC Outside USA are				
					+1 (703)527-3887		
				under delle a CCC e	- 11		
			Section 2. Hazar	rds Identific	ation		
		cation of the Substa		rds Identific	ation		
		cation of the Substan		rds Identific	ation		
	Label E			rds Identific	ation		
	Label E GHS S	lements:	nce or Mixture:	rds Identific	ation		
	Label E GHS S GHS	lements: Signal Word: Hazard Phrases:	nce or Mixture:			cording to GHS.	
	Label E GHS S GHS Based GHS	Clements: Signal Word: Hazard Phrases: d on evaluation of curre Precaution Phrases:	nce or Mixture: None			cording to GHS.	
	Label E GHS S GHS Based GHS No ph	<b>Elements:</b> Signal Word: Hazard Phrases: d on evaluation of curre Precaution Phrases: arases apply.	nce or Mixture: None			cording to GHS.	
	Label E GHS S GHS Based GHS No ph GHS	Clements: Signal Word: Hazard Phrases: d on evaluation of curre Precaution Phrases: mases apply. Response Phrases:	nce or Mixture: None			cording to GHS.	
	Label E GHS S GHS B Based GHS D No ph GHS D	<b>Elements:</b> Signal Word: Hazard Phrases: d on evaluation of curre Precaution Phrases: mases apply. Response Phrases: mases apply.	nce or Mixture: None ently available data this substan			cording to GHS.	
	Label E GHS S GHS B Based GHS B No ph GHS S	<b>Clements:</b> <b>Signal Word:</b> <b>Hazard Phrases:</b> d on evaluation of curred <b>Precaution Phrases:</b> arases apply. <b>Response Phrases:</b> arases apply. <b>Storage and Disposa</b>	nce or Mixture: None ently available data this substan	nce or mixture is r	not classifiable ac	cording to GHS.	
2.2	Label E GHS S GHS B Based GHS B No ph GHS S Pleas	<b>Clements:</b> <b>Signal Word:</b> <b>Hazard Phrases:</b> d on evaluation of curre <b>Precaution Phrases:</b> urases apply. <b>Response Phrases:</b> urases apply. <b>Storage and Disposa</b> e refer to Section 7 for	nce or Mixture: None ently available data this substan I Phrases: Storage and Section 13 for Dis	nce or mixture is n	not classifiable ac		
2.2	Label E GHS S GHS B Based GHS B No ph GHS S Pleas Advers	Clements: Signal Word: Hazard Phrases: d on evaluation of curre Precaution Phrases: mases apply. Response Phrases: mases apply. Storage and Disposa e refer to Section 7 for se Human Health	nce or Mixture: None ently available data this substan I Phrases: Storage and Section 13 for Dis laterial may be irritating to the m	nce or mixture is n sposal information mucous membran	not classifiable ac n. es and upper res		
2.2	Label E GHS S GHS B Based GHS B No ph GHS S Pleas Advers	Clements: Signal Word: Hazard Phrases: d on evaluation of curre Precaution Phrases: arases apply. Response Phrases: arases apply. Storage and Disposa e refer to Section 7 for se Human Health Ma a and Symptoms: Market Signal Word: Signal Word	nce or Mixture: None ently available data this substan I Phrases: Storage and Section 13 for Dis Naterial may be irritating to the m Nay be harmful by inhalation, ing	nce or mixture is n sposal information mucous membran gestion, or skin ab	not classifiable ac n. nes and upper res psorption.		
2.2	Label E GHS S GHS B Based GHS B No ph GHS S Pleas Advers	Clements: Signal Word: Hazard Phrases: d on evaluation of curre Precaution Phrases: mases apply. Response Phrases: mases apply. Storage and Disposa e refer to Section 7 for se Human Health and Symptoms: M	nce or Mixture: None ently available data this substan I Phrases: Storage and Section 13 for Dis laterial may be irritating to the m	nce or mixture is n sposal information mucous membran gestion, or skin at ory system irritatio	not classifiable ac n. les and upper res psorption. pn.	piratory tract.	
	Label E GHS S GHS B Based GHS B No ph GHS S Pleas Advers	Clements: Signal Word: Hazard Phrases: d on evaluation of curre Precaution Phrases: mases apply. Response Phrases: mases apply. Storage and Disposa e refer to Section 7 for se Human Health and Symptoms: M T	None I Phrases: Storage and Section 13 for Displaterial may be irritating to the m lay be harmful by inhalation, ing lay cause eye, skin, or respirator to the best of our knowledge, the	sposal information mucous membran gestion, or skin at ory system irritatio ne toxicological pro	not classifiable ac n. les and upper res psorption. pn. pperties have not	piratory tract. been thoroughly investigated.	
2.2	Label E GHS S GHS B Based GHS B No ph GHS S Pleas Effects	Elements: Signal Word: Hazard Phrases: d on evaluation of curre Precaution Phrases: arases apply. Response Phrases: arases apply. Storage and Disposa e refer to Section 7 for se Human Health and Symptoms: M Section T	I Phrases: Storage and Section 13 for Dis laterial may be irritating to the m lay be harmful by inhalation, ing lay cause eye, skin, or respirato to the best of our knowledge, the in 3. Composition/In	nce or mixture is n sposal information mucous membran gestion, or skin at ory system irritation to toxicological pro	not classifiable ac n. les and upper res psorption. on. operties have not	piratory tract. been thoroughly investigated. <b>nts</b>	
2.2 2.3 CAS #	Label E GHS S GHS B Based GHS B No ph GHS S Pleas Advers Effects	Elements: Signal Word: Hazard Phrases: d on evaluation of curre Precaution Phrases: arases apply. Response Phrases: arases apply. Storage and Disposa e refer to Section 7 for se Human Health and Symptoms: M T Section Hazardous Compor	None I Phrases: Storage and Section 13 for Displaterial may be irritating to the magnetic of the harmful by inhalation, ing May cause eye, skin, or respirator to the best of our knowledge, the on 3. Composition/In- ments (Chemical Name)/	sposal information mucous membran gestion, or skin at ory system irritatio ne toxicological pro	not classifiable ac not classifiable ac not classifiable ac nes and upper res posorption. on. operties have not on Ingrediel EC No./	piratory tract. been thoroughly investigated.	
2.2 2.3 CAS # RTEC	Label E GHS S GHS B Based GHS B No ph GHS S Pleas Advers Effects	Elements: Signal Word: Hazard Phrases: d on evaluation of curre Precaution Phrases: arases apply. Response Phrases: arases apply. Storage and Disposa e refer to Section 7 for se Human Health and Symptoms: M Section T	I Phrases: Storage and Section 13 for Dis laterial may be irritating to the m lay be harmful by inhalation, ing lay cause eye, skin, or respirato to the best of our knowledge, the on 3. Composition/In- ments (Chemical Name)/ n No.	nce or mixture is n sposal information mucous membran gestion, or skin at ory system irritation to toxicological pro	not classifiable ac n. les and upper res psorption. on. operties have not	piratory tract. been thoroughly investigated. <b>nts</b>	

Multi-region format



Revision: 08/11/2017

		Section 4. First Aid Measures
4.1	Description of First Aid	
	Measures:	
	In Case of Inhalation:	Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
	In Case of Skin Contact:	Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
	In Case of Eye Contact:	Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.
	In Case of Ingestion:	Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
		Section 5. Fire Fighting Measures
5.1	Suitable Extinguishing	Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
	Media:	Use water spray to cool fire-exposed containers.
	Unsuitable Extinguishing Media:	g A solid water stream may be inefficient.
5.2	Flammable Properties ar 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	<b>s:</b> As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.
		Section 6. Accidental Release Measures
6.1	Protective Precautions,	Avoid raising and breathing dust, and provide adequate ventilation.
	Protective Equipment an	d As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator,
	Emergency Procedures:	and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
6.2	Environmental	Take steps to avoid release into the environment, if safe to do so.
	Precautions:	
6.3	Methods and Material Fo	r Contain spill and collect, as appropriate.
	Containment and Cleanin	hgTransfer 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	Neep container tightly closed.
	in Storing:	Store in accordance with information listed on the product insert.
	Sec	tion 8. Exposure Controls/Personal Protection
8.1	Exposure Parameters:	

Multi-region format



(Ventilation etc.):       levels below recommended exposure limits         8.2.2       Personal protection equipment:         Eye Protection:       Safety glasses         Protective Gloves:       Compatible chemical-resistant gloves         Other Protective Clothing:Lab coat       Respiratory Equipment         NIOSH approved respirator, as conditions       (Specify Type):         Work/Hygienic/Maintenan       Do not take internally.	warrant. would be equipped with an eyewash and a safety shower			
(Ventilation etc.):       levels below recommended exposure limits         8.2.2       Personal protection equipment:         Eye Protection:       Safety glasses         Protective Gloves:       Compatible chemical-resistant gloves         Other Protective Clothing:Lab coat       Respiratory Equipment         (Specify Type):       NIOSH approved respirator, as conditions         Work/Hygienic/Maintenan       Do not take internally.         ce Practices:       Facilities storing or utilizing this material sh Wash thoroughly after handling. No data available.	warrant. Nould be equipped with an eyewash and a safety showe			
<ul> <li>8.2.2 Personal protection equipment: Eye Protection: Safety glasses Protective Gloves: Compatible chemical-resistant gloves Other Protective Clothing:Lab coat Respiratory Equipment NIOSH approved respirator, as conditions (Specify Type): Work/Hygienic/Maintenan Do not take internally. ce Practices: Facilities storing or utilizing this material sh Wash thoroughly after handling. No data available.</li> </ul>	warrant. nould be equipped with an eyewash and a safety showe			
Eye Protection:Safety glassesProtective Gloves:Compatible chemical-resistant glovesOther Protective Clothing:Lab coatRespiratory EquipmentNIOSH approved respirator, as conditions of (Specify Type):Work/Hygienic/MaintenanDo not take internally.ce Practices:Facilities storing or utilizing this material sh Wash thoroughly after handling. No data available.	ould be equipped with an eyewash and a safety showe			
Protective Gloves:       Compatible chemical-resistant gloves         Other Protective Clothing:Lab coat       Respiratory Equipment         NIOSH approved respirator, as conditions       (Specify Type):         Work/Hygienic/Maintenan       Do not take internally.         ce Practices:       Facilities storing or utilizing this material sh Wash thoroughly after handling. No data available.	ould be equipped with an eyewash and a safety showe			
Other Protective Clothing:Lab coat         Respiratory Equipment       NIOSH approved respirator, as conditions of (Specify Type):         Work/Hygienic/Maintenan       Do not take internally.         ce Practices:       Facilities storing or utilizing this material sh Wash thoroughly after handling.         No data available.	ould be equipped with an eyewash and a safety showe			
Respiratory Equipment       NIOSH approved respirator, as conditions         (Specify Type):       Work/Hygienic/Maintenan         Work/Hygienic/Maintenan       Do not take internally.         ce Practices:       Facilities storing or utilizing this material sh         Wash thoroughly after handling.       No data available.	ould be equipped with an eyewash and a safety showe			
(Specify Type): Work/Hygienic/Maintenan Do not take internally. ce Practices: Wash thoroughly after handling. No data available.	ould be equipped with an eyewash and a safety showe			
Work/Hygienic/Maintenan Do not take internally. ce Practices: Facilities storing or utilizing this material sh Wash thoroughly after handling. No data available.				
ce Practices: Facilities storing or utilizing this material sh Wash thoroughly after handling. No data available.				
Wash thoroughly after handling. No data available.				
No data available.	nical Properties			
	nical Properties			
Section 9. Physical and Chen	nical Properties			
9.1 Information on Basic Physical and Chemical Properties	d			
Physical States: []Gas []Liquid [X]Soli	a			
Appearance and Odor: A crystalline solid				
pH: No data.				
Melting Point: No data.				
Boiling Point: No data.				
Flash Pt: No data.				
Evaporation Rate: No data.				
Flammability (solid, gas): No data available.				
Explosive Limits:       LEL: No data.         Vapor Pressure (vs. Air or mm       No data.	UEL: No data.			
Hg): Vapor Density (vs. Air = 1): No data.				
Specific Gravity (Water = 1): No data.				
	No data. ~0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2); ~30 mg/ml in DMSO; ~20 mg/ml in			
Solubility Notes: ~0.5 mg/ml in a 1:1 solution of DMS DMF;	50.гвз (рп 7.2), ~зо тулт т DM30, ~20 тулт т			
Octanol/Water Partition No data.				
Coefficient:				
Autoignition Pt: No data.				
Decomposition Temperature: No data.				
Viscosity: No data.				
9.2 Other Information				
Percent Volatile: No data.				
Molecular Formula & Weight: C45H72O16 869.0				

Multi-region format



Multi-region format

Revision: 08/11/2017

			Section 10. Stability	and Reactiv	vity			
10.1	Reactivi	ty:	No data available.					
0.2 Stability:			Unstable [ ] Stable [ X ]					
<ul> <li>10.3 Stability Note(s):</li> <li>Polymerization:</li> <li>10.4 Conditions To Avoid:</li> </ul>		Note(s):	Stable if stored in accordance with information listed on the product insert.					
		ization:	Will occur [ ] Will not occur [ X	]				
		ons To Avoid:	No data available.					
10.5 Incompatibility - Materials			strong oxidizing agents					
	To Avoi	d:						
10.6	Hazardous		carbon dioxide					
	-	osition or	carbon monoxide					
	Byprodu	icts:						
			Section 11. Toxicolog	ical Informa	ation			
11.1	Informat	ion on	The toxicological effects of this proc	luct have not been	n thoroughly st	udied.		
	Toxicolo	ogical Effects:						
CAS	#	Hazardous Com	ponents (Chemical Name)	NTP	IARC	ACGIH	OSHA	
8468	80-75-1	Astragaloside I		n.a.	n.a.	n.a.	n.a.	
		•			•	-	•	
			Section 12, Ecologic	cal Informati	ion			
12.1	Toxicity	-	Section 12. Ecologic		ion			
12.1	Toxicity	:	Avoid release into the environment.					
12.1	Toxicity Persiste		•					
	-	nce and	Avoid release into the environment. Runoff from fire control or dilution w					
	Persiste Degrada	nce and	Avoid release into the environment. Runoff from fire control or dilution w					
12.2	Persiste Degrada	nce and bility: mulative	Avoid release into the environment. Runoff from fire control or dilution w No data available.					
12.2	Persiste Degrada Bioaccu	nce and bility: mulative I:	Avoid release into the environment. Runoff from fire control or dilution w No data available.					
12.2 12.3	Persiste Degrada Bioaccu Potentia Mobility	nce and bility: mulative I: in Soil:	Avoid release into the environment. Runoff from fire control or dilution w No data available. No data available.					
12.2 12.3 12.4	Persiste Degrada Bioaccu Potentia Mobility	nce and bility: mulative I: in Soil: of PBT and vPvB	Avoid release into the environment. Runoff from fire control or dilution w No data available. No data available. No data available.					
12.2 12.3 12.4	Persiste Degrada Bioaccu Potentia Mobility Results assessn	nce and bility: mulative I: in Soil: of PBT and vPvB	Avoid release into the environment. Runoff from fire control or dilution w No data available. No data available. No data available.					
12.2 12.3 12.4 12.5	Persiste Degrada Bioaccu Potentia Mobility Results assessn	nce and bility: mulative I: in Soil: of PBT and vPvB nent:	Avoid release into the environment. Runoff from fire control or dilution w No data available. No data available. No data available. No data available.	ater may cause po	ollution.			
12.2 12.3 12.4 12.5	Persiste Degrada Bioaccu Potentia Mobility Results assessn Other ac	nce and bility: mulative I: in Soil: of PBT and vPvB nent:	Avoid release into the environment. Runoff from fire control or dilution w No data available. No data available. No data available. No data available. No data available.	ater may cause po	ollution.			
12.2 12.3 12.4 12.5 12.6	Persiste Degrada Bioaccu Potentia Mobility Results assessn Other ac	nce and bility: mulative I: in Soil: of PBT and vPvB nent: Iverse effects:	Avoid release into the environment. Runoff from fire control or dilution w No data available. No data available. No data available. No data available. No data available. <b>Section 13. Disposal</b>	ater may cause po Considerati	ollution.			
12.2 12.3 12.4 12.5 12.6	Persiste Degrada Bioaccu Potentia Mobility Results assessn Other ac	nce and bility: mulative I: in Soil: of PBT and vPvB nent: Iverse effects:	Avoid release into the environment. Runoff from fire control or dilution w No data available. No data available. No data available. No data available. No data available. Section 13. Disposal Dispose in accordance with local, st Section 14. Transpo	ater may cause po Considerati	ollution.			
12.2 12.3 12.4 12.5 12.6 13.1 14.1	Persiste Degrada Bioaccu Potentia Mobility Results assessm Other ac Waste D	nce and ibility: mulative l: in Soil: of PBT and vPvB nent: Iverse effects: isposal Method:	Avoid release into the environment. Runoff from fire control or dilution w No data available. No data available. No data available. No data available. No data available. Section 13. Disposal Dispose in accordance with local, st Section 14. Transpo	ater may cause po Considerati	ollution.			
12.2 12.3 12.4 12.5 12.6 13.1 14.1 D	Persiste Degrada Bioaccu Potentia Mobility Results assessm Other ac Waste D	nce and ibility: mulative I: in Soil: of PBT and vPvB hent: Iverse effects: isposal Method: RANSPORT (US I r Shipping Name:	Avoid release into the environment. Runoff from fire control or dilution w No data available. No data available. No data available. No data available. No data available. Section 13. Disposal Dispose in accordance with local, st Section 14. Transpo	ater may cause po Considerati	ollution.			
12.2 12.3 12.4 12.5 12.6 13.1 14.1 D	Persiste Degrada Bioaccu Potentia Mobility Results assessn Other ac Waste D LAND T	nce and ibility: mulative I: in Soil: of PBT and vPvB nent: Iverse effects: isposal Method: RANSPORT (US I r Shipping Name: d Class:	Avoid release into the environment. Runoff from fire control or dilution w No data available. No data available. No data available. No data available. No data available. Section 13. Disposal Dispose in accordance with local, st Section 14. Transpo	ater may cause po Considerati	ollution.			
12.2 12.3 12.4 12.5 12.6 13.1 14.1 D	Persiste Degrada Bioaccu Potentia Mobility Results assessn Other ac Waste D LAND T DOT Prope OT Hazar	nce and ibility: mulative I: in Soil: of PBT and vPvB nent: Iverse effects: isposal Method: RANSPORT (US I r Shipping Name: d Class:	Avoid release into the environment. Runoff from fire control or dilution w No data available. No data available. No data available. No data available. No data available. <b>Section 13. Disposal</b> Dispose in accordance with local, st <b>Section 14. Transpo</b> <b>DoT):</b> Not dangerous goods.	ater may cause po Considerati	ollution.			
12.2 12.3 12.4 12.5 12.6 13.1 14.1 D U 14.1	Persiste Degrada Bioaccu Potentia Mobility Results assessm Other ac Waste D LAND T OT Prope OT Hazar	nce and ibility: mulative l: in Soil: of PBT and vPvB nent: lverse effects: isposal Method: RANSPORT (US I r Shipping Name: d Class: nber:	Avoid release into the environment. Runoff from fire control or dilution w No data available. No data available. No data available. No data available. No data available. <b>Section 13. Disposal</b> Dispose in accordance with local, st <b>Section 14. Transpo</b> <b>DoT):</b> Not dangerous goods.	ater may cause po Considerati	ollution.			
12.2 12.3 12.4 12.5 12.6 13.1 14.1 D U 14.1 A	Persiste Degrada Bioaccu Potentia Mobility Results assessm Other ac Waste D LAND T OT Prope OT Hazar	nce and ibility: mulative l: in Soil: of PBT and vPvB nent: lverse effects: isposal Method: RANSPORT (US I r Shipping Name: d Class: nber: RANSPORT (Euro hipping Name:	Avoid release into the environment. Runoff from fire control or dilution w No data available. No data available. No data available. No data available. No data available. No data available. Section 13. Disposal Dispose in accordance with local, st Section 14. Transpo DOT): Not dangerous goods.	ater may cause po Considerati	ollution.			

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Calman
Caynan

14.3 AIR TRANSPORT (ICAO/IATA): ICAO/IATA Shipping Name: N

**g Name:** Not dangerous goods.

Additional Transport

 $\label{eq:constraint} \ensuremath{\mathsf{Transport}}\xspace{1mm} \ensuremath{\mathsf{in}}\xspace{1mm} \ensuremath{\mathsf{acc}}\xspace{1mm} \ensuremath{\space}\xspace{1mm} \$ 

Information:

# Section 15. Regulatory Information

CAS #	Hazardous Components (Chemical Name)		S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)		
84680-75-1	Astragaloside I		No	No	No		
CAS #	Hazardous Com	Hazardous Components (Chemical Name)		r State Lists	· ·		
84680-75-1	Astragaloside I	Astragaloside I		CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No			
Regulatory Inf Statement:	ormation	This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.					
		Section 16. Ot	her Informatio	on			
Revision Date	:	08/11/2017					
Additional Info	ormation 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.					