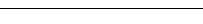
SAFETY	DATA	SHEET

ARALDITE® AY 557 US

Version Rev 1.1 06/2

Revision Date: 06/20/2019

SDS Number: 400001012595



Distributed By

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: ARALDITE® AY 557 US

SECTION 1. IDENTIFICATION

Product name

Manufacturer or supplier's details						
Company name of supplier Address	 Huntsman Advanced Materials Americas LLC P.O. Box 4980 The Woodlands, TX 77387 					
Telephone	United States of America (USA) : Non-Emergency: (800) 257-5547					
E-mail address of person responsible for the SDS	: Global_Product_EHS_AdMat@huntsman.com					
Emergency telephone number	: Chemtrec: (800) 424-9300 or (703) 527-3887					
Recommended use of the chemical and restrictions on use						
Recommended use	: Epoxy constituents					
Restrictions on use	: For industrial use only.					

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accord Skin irritation	ance with 29 CFR 1910.1200 : Category 2
Eye irritation	: Category 2A
Skin sensitisation	: Category 1
Short-term (acute) aquatic hazard	: Category 2
Long-term (chronic) aquatic hazard	: Category 2
GHS label elements Hazard pictograms	
Signal word	: Warning
Hazard statements	 H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation.



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Date of last issue: 09/14/2018

Date of first issue: 09/14/2018





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		H411 Toxic to	Print Date 07/29/2019 aquatic life with long lasting effects.
Preca	autionary statements	P264 Wash sł P272 Contami the workplace. P273 Avoid re P280 Wear pro Response: P302 + P352 I P305 + P351 - for several mir to do. Continue P333 + P313 I attention. P337 + P313 I attention. P362 Take off P391 Collect s Storage: Not available Disposal: P501 Dispose	lease to the environment. btective gloves/ eye protection/ face protection. IF ON SKIN: Wash with plenty of soap and water. + P338 IF IN EYES: Rinse cautiously with water hutes. Remove contact lenses, if present and eas e rinsing. If skin irritation or rash occurs: Get medical advice if eye irritation persists: Get medical advice/ contaminated clothing and wash before reuse.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
2,2'-[(1-methylethylidene)bis(4,1-	1675-54-3	90 - 100
phenyleneoxymethylene)]bisoxirane		

The specific chemical identity and/or exact percentage (concentration) of composition may be withheld as a trade secret.

Both 25068-38-6 and 1675-54-3 can be used to describe the epoxy resin which is produced through the reaction of bisphenol A and epichlorohydrin

SECTION 4. FIRST AID MEASURES

General advice	:	Move out of dangerous area. Show this safety data sheet to the doctor in attendance. Treat symptomatically. Get medical attention if symptoms occur.
If inhaled	:	If inhaled, remove to fresh air.





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		Get m	Print Date 07/29/20 nedical attention if symptoms occur.	19
In c	ase of skin contact	If on s	n irritation persists, call a physician. skin, rinse well with water. clothes, remove clothes.	
In case of eye contact		Remo Keep	Immediately flush eye(s) with plenty of water. Remove contact lenses. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.	
If swallowed		Never	respiratory tract clear. give anything by mouth to an unconscious person. nptoms persist, call a physician.	
and	st important symptoms effects, both acute and ayed	: None	known.	
Note	es to physician	: Treat	symptomatically.	

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during firefighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Carbon oxides Halogenated compounds
Specific extinguishing methods	:	No data is available on the product itself.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions,	: Use personal protective equipment.
protective equipment and	Refer to protective measures listed in sections 7 and 8.
emergency procedures	





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	Environmental precautions		:	Prevent further le	Print Date 07/29/2019 from entering drains. eakage or spillage if safe to do so. ntaminates rivers and lakes or drains inform rities.
		ds and materials for ment and cleaning up	:	acid binder, unive	t absorbent material (e.g. sand, silica gel, ersal binder, sawdust). closed containers for disposal.
SEC	TION 7	. HANDLING AND ST	OR/	AGE	
		on protection against d explosion	:	Normal measure	s for preventive fire protection.
	Advice	on safe handling	:	Avoid contact with For personal pro Smoking, eating application area. Dispose of rinse regulations. Persons suscept allergies, chronic	obtain special instructions before use.
	Conditi	ons for safe storage	:	Containers which upright to prevent	htly closed in a dry and well-ventilated place. are opened must be carefully resealed and kept leakage. abelled containers.
	Materia	als to avoid	:	For incompatible SDS.	materials please refer to Section 10 of this
	Recom temper	mended storage	:	36 - 104 °F / 2 -	40 °C
	Further	information on stability	:	Stable under nor	mal conditions.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection	: General and local exhaust ventilation is recommended to
	maintain vapor exposures below recommended limits. Where
	concentrations are above recommended limits or are
	unknown, appropriate respiratory protection should be worn.
	Follow OSHA respirator regulations (29 CFR 1910.134) and
	use NIOSH/MSHA approved respirators. Protection provided
	by air purifying respirators against exposure to any
	hazardous chemical is limited. Use a positive pressure air





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		release, expo	Print Date 07/29/2019 birator if there is any potential for uncontrolled bosure levels are unknown, or any other e where air purifying respirators may not provide bitection.
Hand	l protection		
Rema	arks		y for a specific workplace should be discussed ucers of the protective gloves.
Eyer	protection	Tightly fitting	ottle with pure water safety goggles nield and protective suit for abnormal processing
Skin	and body protection	: Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work pla	
Hygie	ene measures	When using	do not eat or drink. do not smoke. before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	colourless
Odour	:	slight
Odour Threshold	:	No data is available on the product itself.
рН	:	ca. 7 (68 °F / 20 °C) Concentration: 500 g/l
Freezing point	:	No data is available on the product itself.
Melting point	:	No data is available on the product itself.
Boiling point	:	> 392 °F / > 200 °C
Flash point	:	> 392 °F / > 200 °C Method: Pensky-Martens closed cup
Evaporation rate	:	No data is available on the product itself.
Flammability (solid, gas)	:	No data is available on the product itself.
Flammability (liquids)	:	No data is available on the product itself.
Upper explosion limit / Upper flammability limit	:	No data is available on the product itself.
Lower explosion limit / Lower	:	No data is available on the product itself.





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flam	nmability limit		Print Date 07/29/2019		
Vap	oour pressure	: <0.0001 hPa	a (77 °F / 25 °C)		
Rela	ative vapour density	: No data is av	ailable on the product itself.		
Rela	ative density	: 1.17 - 1.2 (77	′°F / 25 °C)		
Der	nsity	: 1.17 - 1.2 g/c	:m3 (77 °F / 25 °C)		
	ubility(ies) Vater solubility	: practically ins	soluble (68 °F / 20 °C)		
S	Solubility in other solvents	: No data is available on the product itself.			
	tition coefficient: n- anol/water	: log Pow: 3.8 (77 °F / 25 °C)			
	o-ignition temperature	: does not ignite			
Dec	composition temperature	: > 392 °F / > 200 °C			
dec	f-Accelerating omposition temperature .DT)	: No data is available on the product itself.			
	cosity /iscosity, dynamic	: 10,000 - 12,0	000 mPa.s (77 °F / 25 °C)		
Exp	plosive properties	: No data is av	ailable on the product itself.		
Oxi	dizing properties	: No data is av	ailable on the product itself.		
Par	ticle size	: No data is av	ailable on the product itself.		

SECTION 10. STABILITY AND REACTIVITY

Reactivity Chemical stability Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use. Stable under normal conditions. No hazards to be specially mentioned.
Conditions to avoid	:	None known.
Incompatible materials	:	Strong acids
		Strong bases
		Strong oxidizing agents
Hazardous decomposition products	:	carbon dioxide
p		carbon monoxide
		Halogenated compounds





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SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of : No data is available on the product itself. exposure		
Acute toxicity		
Components:		
2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane: Acute oral toxicityComponents Acute oral Acute oral toxicityComponents Acute oral Acute oral Acute oral toxicityComponents Acute oral Acute or		
Acute inhalation toxicity : No data available		
<u>Components:</u>		
2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:		
Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg Method: OECD Test Guideline 402		
Assessment: The substance or mixture has no acute dermal toxicity		
Acute toxicity (other routes of : No data available administration)		
Skin corrosion/irritation		
Components:		
2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane: Species: Rabbit		
Assessment: Mild skin irritant		
Method: OECD Test Guideline 404 Result: Irritating to skin.		
Serious eye damage/eye irritation		
Components:		
2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane: Species: Rabbit		

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane: Species: Rabbit Result: Irritating to eyes. Assessment: Mild eye irritant Method: OECD Test Guideline 405

Respiratory or skin sensitisation

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane: Exposure routes: Skin





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Species: Mouse Assessment: May cause sensitisation by skin contact. Method: OECD Test Guideline 429 Result: Causes sensitisation.

Assessment:

No data available

Germ cell mutagenicity

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane: Genotoxicity in vitro : Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: positive Concentration: 0 - 5000 ug/plate

Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: positive

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane: : Cell type: Germ Genotoxicity in vivo Application Route: Oral Method: OECD Test Guideline 478

Result: negative

Cell type: Somatic Application Route: Oral Dose: 0 - 5000 mg/kg Method: OPPTS 870.5395 Result: negative

Carcinogenicity

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane: Species: Rat, male and female Application Route: Oral Exposure time: 24 month(s) Dose: 15 mg/kg Frequency of Treatment: 7 days/week Method: OECD Test Guideline 453 Result: negative

Species: Mouse, male Application Route: Dermal Exposure time: 24 month(s) Dose: 0.1 mg/kg Frequency of Treatment: 3 days/week Method: OECD Test Guideline 453 Result: negative

Species: Rat, female Application Route: Dermal





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ersion 1	Revision Date: 06/20/2019	SDS Number: 400001012595	Date of last issue: 09/14/2018 Date of first issue: 09/14/2018		
Dose	sure time: 24 month(s) : 1 mg/kg		Print Date 07/29/201		
Metho	iency of Treatment: 5 o od: OECD Test Guideli It: negative				
	nogenicity - ssment	: No data availal	ble		
IARC		equal to 0.1% is i	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.		
ACG	IH	equal to 0.1% is i	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.		
OSH	A		No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.		
NTP			this product present at levels greater than or dentified as a known or anticipated carcinogen		
Repro	oductive toxicity				
<u>Com</u> p	<u>oonents:</u>				
	1-methylethylidene)bis s on fertility	: Test Type: Tw Species: Rat, Application Ro	o-generation study male and female ute: Oral		
		General Toxici mg/kg body we	•		
		body weight Symptoms: No	ty F1: No-observed-effect level: 540 mg/kg adverse effects		
			D Test Guideline 416 acts on fertility and early embryonic vere detected.		
-	oonents:				
Effect	1-methylethylidene)bis is on foetal opment	Species: Rabb Application Ro General Toxici 30 mg/kg body Method: Other	it, female ute: Dermal ty Maternal: No observed adverse effect level: v weight		
		Species: Rabb Application Ro General Toxici 60 mg/kg body	it, female ute: Oral ty Maternal: No observed adverse effect level:		

Method: OECD Test Guideline 414





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rsion		SDS Number: 400001012595	Date of last issue: 09 Date of first issue: 09	
		Result: No tera	togenic effects	Print Date 07/29/207
		180 mg/kg bod	ute: Oral y Maternal: No observed y weight PTest Guideline 414	l adverse effect level:
	ductive toxicity - ssment	: No data availab	le	
STOT	- single exposure			
	ita available			
STOT	- repeated exposure			
No da	ta available			
Repe	ated dose toxicity			
<u>Comp</u>	oonents:			
Speci NOAE Applic Expose Numb	1-methylethylidene)bis(4, es: Rat, male and female EL: 50 mg/kg cation Route: Ingestion sure time: 14 Weeks er of exposures: 7 d od: Subchronic toxicity			
NOEL Applic Expose Numb	es: Rat, male and female .: 10 mg/kg cation Route: Skin contac sure time: 13 Weeks er of exposures: 5 d od: Subchronic toxicity			
NOAE Applic Expose Numb	es: Mouse, male EL: 100 mg/kg cation Route: Skin contac sure time: 13 Weeks er of exposures: 3 d od: Subchronic toxicity	t		
	ated dose toxicity - ssment	: No data availab	le	
Aspira	ation toxicity			
No da	ta available			
Exner	rience with human expo	osure		
-	-	lata available		





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Inhalat	ion:	No data available	
Skin c	ontact:	No data available	
Eye co	ontact:	No data available	
Ingesti	on:	No data available	
	ology, Metabolisn a available	n, Distribution	
	logical effects a available		
Furthe Ingesti	er information on:	No data available	

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxicity to fish - Product	:	LC50: ca. 1.5 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates - Product	:	EC50: 3.6 mg/l Exposure time: 24 h Method: OECD Test Guideline 202

Components:

2,2'-[(1-methylethylidene)bis(4,1 Toxicity to algae/aquatic plants	 -phenyleneoxymethylene)]bisoxirane: : EC50 (Selenastrum capricornutum (green algae)): 9.4 mg/l Exposure time: 72 h Test Type: static test Test substance: Fresh water Method: EPA-660/3-75-009
M-Factor (Acute aquatic toxicity)	: No data available
Toxicity to fish (Chronic toxicity)	: No data available

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane: Toxicity to daphnia and other : NOEC (Daphnia magna (Water flea)): 0.3 mg/l aquatic invertebrates Exposure time: 21 d





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(Chrc	onic toxicity)	Test Type: sem Test substance Method: OECD	
M-Fa toxici	ctor (Chronic aquatic ity)	: No data availabl	e
Toxic Produ	ity to microorganisms - uct	: IC50: > 100 mg Exposure time: Method: Directiv	
	ity to soil dwelling nisms	: No data availabl	e
Plant	toxicity	: No data availabl	e
Sedir	ment toxicity	: No data availabl	e
	ity to terrestrial nisms	: No data availabl	e
	oxicology Assessment e aquatic toxicity	: No data availabl	e
Chroi	nic aquatic toxicity	: No data availabl	e
Toxic	ity Data on Soil	: No data availabl	e
	r organisms relevant to nvironment	: No data availabl	e
Persi	stence and degradabi	lity	
2,2'-[(ponents: (1-methylethylidene)bis(4 egradability	: Inoculum: Sewa Concentration: Result: Not read Biodegradation: Exposure time:	age (STP effluent) 20 mg/l dily biodegradable. 5 %
	nemical Oxygen and (BOD)	: No data availabl	e
Chen (COD	nical Oxygen Demand))	: No data availabl	e
BOD	/COD	: No data availabl	e
ThOE)	: No data availabl	e
BOD	/ThOD	: No data availabl	e
Disso	olved organic carbon	: No data availabl	e





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Physic remova	o-chemical bility	: No data availabl	e
2,2'-[(1-	onents: -methylethylidene)bis(4 y in water	: Degradation hal	f life(DT50): 4.83 d (77 °F / 25 °C) pH: 4 Test Guideline 111
			f life(DT50): 7.1 d (77 °F / 25 °C) pH: 9 Test Guideline 111 water
			f life(DT50): 3.58 d (77 °F / 25 °C) pH: 7 Test Guideline 111 water
Photod	legradation	: No data availabl	e
Impact Treatm	on Sewage ent	: No data availabl	e
Bioaco	cumulative potential		
<u>Compc</u>	onents:		
	-methylethylidene)bis(4 umulation	: Bioconcentration	
	n coefficient: n- I/water - Product	: log Pow: 3.8 (77	′ °F / 25 °C)
Mobili	ty in soil		
Mobility	у	: No data availabl	e
<u>Comp</u>	onents:		
Distribu	-methylethylidene)bis(4 ution among	,1-phenyleneoxymet : Koc: 445	hylene)]bisoxirane:
	mental compartments y in soil	: No data availabl	e
Other a	adverse effects		
Environ pathwa	nmental fate and ays	: No data availabl	e
Results assess	s of PBT and vPvB sment	: No data availabl	e
Endocr potentia	rine disrupting al	: No data availabl	e





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		ed organic bound ns (AOX)	:	No data available	Print Date 07/29/2019
	Hazaro	lous to the ozone laye	ər		
	Ozone	Depletion Potential	:	Protection of Stra Substances Remarks: This pro manufactured with	R Protection of Environment; Part 82 tospheric Ozone - CAA Section 602 Class I oduct neither contains, nor was n a Class I or Class II ODS as defined by the t Section 602 (40 CFR 82, Subpt. A, App.A +
		nal ecological tion - Product	:	unprofessional ha	hazard cannot be excluded in the event of ndling or disposal. fe with long lasting effects.
	Global (GWP)	warming potential	:	No data available	

SECTION 13. DISPOSAL CONSIDERATIONS

•	
Waste from residues	The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of contents/ container to an approved waste disposal plant.
Contaminated packaging :	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA UN/ID No.	: UN 3082
Proper shipping name	: Environmentally hazardous substance, liquid, n.o.s. (BISPHENOL A EPOXY RESIN)
Class	: 9
Packing group	: III
Labels	: Class 9 - Miscellaneous dangerous substances and articles
Packing instruction (cargo aircraft)	: 964





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	ng instruction enger aircraft)	: 964	Print Date 07/29/2019
IMDG UN nu Proper	mber [.] shipping name	: UN 3082 : ENVIRONMENT/ N.O.S. (BISPHENOL A	ALLY HAZARDOUS SUBSTANCE, LIQUID,
Labels EmS (: 9 : III : 9 : F-A, S-F : yes	

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

DOT Classification

UN/ID/NA number	: UN 3082
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BISPHENOL A EPOXY RESIN)
Class	: 9
Packing group	: III
Labels	: Class 9 - Miscellaneous dangerous substances and articles
ERG Code	: 171
Marine pollutant	: yes(BISPHENOL A EPOXY RESIN)

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

SARA 311/312 Hazards	:	Skin corrosion or irritation Serious eye damage or eye irritation Respiratory or skin sensitisation
SARA 313	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).



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California Prop. 65

WARNING: This product can expose you to chemicals including 4,4'-isopropylidenediphenol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

The components of this prod	uc	t are reported in the following inventories:
CH INV	:	The formulation contains substances listed on the Swiss Inventory
DSL	:	All components of this product are on the Canadian DSL
AICS	:	On the inventory, or in compliance with the inventory
NZIOC	:	Not in compliance with the inventory
ENCS	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
TCSI	:	On the inventory, or in compliance with the inventory
TSCA	:	On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIOC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

TSCA - 5(a) Significant New Use Rule List of Chemicals

No substances are subject to a Significant New Use Rule.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

No substances are subject to TSCA 12(b) export notification requirements.



SDS Number: 400001012595



HMIS® IV:



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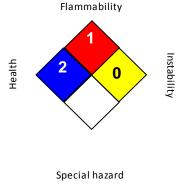
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SECTION 16. OTHER INFORMATION

Further information





HEALTH2FLAMMABILITY1PHYSICAL HAZARD0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard

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Version	Revisi
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on Date: /2019

SDS Number:	Date of last issue: -
400001012614	Date of first issue: 06/21/2019

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SECTION 1. IDENTIFICATION

Product name	: HARDENER HY 557 US			
Manufacturer or supplier's de	etails			
Company name of supplier Address	 Huntsman Advanced Materials Americas LLC P.O. Box 4980 The Woodlands, TX 77387 United States of America (USA) 			
Telephone	: Non-Emergency: (800) 257-5547			
E-mail address of person responsible for the SDS	: Global_Product_EHS_AdMat@huntsman.com			
Emergency telephone number	: Chemtrec: (800) 424-9300 or (703) 527-3887			
Recommended use of the chemical and restrictions on use				
Recommended use	: Hardener			
Restrictions on use	: For industrial use only.			

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200				
Eye irritation	: Category 2A			
GHS label elements Hazard pictograms				
Signal word	: Warning			
Hazard statements	: H319 Causes serious eye irritation.			
Precautionary statements	 Prevention: P264 Wash skin thoroughly after handling. P280 Wear eye protection/ face protection. Response: P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 If eye irritation persists: Get medical advice/ attention. Storage: Not available 			







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Disposal: Not available

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
2,4,6-tris(dimethylaminomethyl)phenol	90-72-2	5 - 10
bis[(dimethylamino)methyl]phenol	71074-89-0	1 - 3

The specific chemical identity and/or exact percentage (concentration) of composition may be withheld as a trade secret.

SECTION 4. FIRST AID MEASURES

General advice	:	Move out of dangerous area. Show this safety data sheet to the doctor in attendance. Treat symptomatically. Get medical attention if symptoms occur.
If inhaled	:	If inhaled, remove to fresh air. Get medical attention if symptoms occur.
In case of skin contact	:	Wash with water and soap as a precaution.
In case of eye contact	:	Immediately flush eye(s) with plenty of water. Remove contact lenses. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.
Most important symptoms and effects, both acute and delayed	:	None known.
Notes to physician	:	Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.





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	nsuitable extinguishing edia	: High volume water jet	
	pecific hazards during efighting	: No information available.	
	azardous combustion roducts	: No hazardous combustion products are known	
	pecific extinguishing ethods	: No data is available on the product itself.	
F	urther information	: No action shall be taken involving any personal risk or wit suitable training.	hout
	pecial protective equipment r firefighters	: Wear self-contained breathing apparatus for firefighting if necessary.	

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Refer to protective measures listed in sections 7 and 8.
Environmental precautions	:	Prevent further leakage or spillage if safe to do so.
Methods and materials for containment and cleaning up	:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Advice on safe handling	:	Do not breathe vapours/dust. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations.
Conditions for safe storage	:	Keep container tightly closed in a dry and well-ventilated place. Keep in properly labelled containers.
Materials to avoid	:	For incompatible materials please refer to Section 10 of this SDS.
Recommended storage temperature	:	36 - 104 °F / 2 - 40 °C
Further information on storage stability	:	Stable under normal conditions.





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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipm	ent
Respiratory protection	: No personal respiratory protective equipment normally required.
Hand protection Material Break through time	: butyl-rubber : 10 - 480 min
Material Material Material Material	 Solvent-resistant gloves (butyl-rubber) Nitrile rubber Neoprene gloves PVC
Remarks	: The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Eye protection	: Eye wash bottle with pure water Tightly fitting safety goggles Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	: Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures	 When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: amber
Odour	: rotten-egg like
Odour Threshold	: No data is available on the product itself.
рН	: No data is available on the product itself.
Freezing point	: No data is available on the product itself.
Melting point	: No data is available on the product itself.
Boiling point	: No data is available on the product itself.
Flash point	: > 298 °F / > 148 °C





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Evap	oration rate	:	< 0.01	
Flam	mability (solid, gas)	:	No data is availat	ble on the product itself.
Flam	mability (liquids)	:	No data is availat	ble on the product itself.
	r explosion limit / Upper nability limit	:	No data is availat	ble on the product itself.
	r explosion limit / Lower nability limit	:	No data is availat	ble on the product itself.
Vapo	ur pressure	:	No data is availat	ble on the product itself.
Relat	ive vapour density	:	No data is availat	ble on the product itself.
Relat	ive density	:	1.14 (68 °F / 20 °	°C)
Dens	ity	:	1.14 g/cm3 (68 °	°F / 20 °C)
	bility(ies) ater solubility	:	slightly soluble	
Sc	lubility in other solvents	:	No data is availat	ble on the product itself.
	tion coefficient: n- nol/water	:	No data is availat	ble on the product itself.
	ignition temperature	:	No data is availat	ble on the product itself.
Therr	nal decomposition	:	No data is availat	ble on the product itself.
	Accelerating mposition temperature T)	:	No data is availat	ble on the product itself.
Visco	osity	:	No data is availat	ble on the product itself.
Explo	osive properties	:	No data is availat	ble on the product itself.
Oxidi	zing properties	:	No data is availat	ble on the product itself.
Partio	cle size	:	No data is availat	ble on the product itself.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal	use.
Chemical stability	: Stable under normal conditions.	
Possibility of hazardous	: No hazards to be specially mentioned.	
reactions		
Conditions to avoid	: None known.	





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Incom	npatible materials	: None known.	Print Date 07/29/2019
Haza produ	rdous decomposition	: No hazardous	decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	: No data is available on the product itself.
Acute toxicity Acute oral toxicity - Product	: Acute toxicity estimate : > 5,000 mg/kg Method: Calculation method
Acute inhalation toxicity	: No data available
Acute dermal toxicity - Product	: Acute toxicity estimate : > 5,000 mg/kg Method: Calculation method
Acute toxicity (other routes of administration)	: No data available
Skin corrosion/irritation	
Product:	
Assessment: No skin irritation	
Serious eye damage/eye irrit	ation
Product:	
Assessment: Irritating to eyes.	
Respiratory or skin sensitisat	ion
<u>Components:</u>	
2,4,6-tris(dimethylaminomethyl)	phenol:
Exposure routes: Skin Species: Guinea pig	
Method: OECD Test Guideline	406
Result: Does not cause skin se	nsitisation.
Assessment:	No data available
Germ cell mutagenicity	
<u>Components:</u>	
2,4,6-tris(dimethylaminomethyl)	phenol:
Genotoxicity in vitro	: Concentration: 5000 ug/plate Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative





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			ation: with and without metabolic activation Test Guideline 473
			ation: with and without metabolic activation) Test Guideline 476 e
Genot	oxicity in vivo	: No data availat	le
	nogenicity ta available		
	nogenicity - ssment	: No data availat	ble
IARC			this product present at levels greater than or dentified as probable, possible or confirmed n by IARC.
ACGI	н		this product present at levels greater than or dentified as a carcinogen or potential CGIH.
OSHA	λ.	-	this product present at levels greater than or on OSHA's list of regulated carcinogens.
NTP		-	this product present at levels greater than or dentified as a known or anticipated carcinogen
Repro	oductive toxicity		
	onents:		
	tris(dimethylaminometh s on fertility	: Species: Rat, r Application Ro Method: OECE	
	s on foetal opment	: No data availat	
•	ductive toxicity - ssment	: No data availat	ble
стот	- single exposure		
No da	ta available		
STOT	- repeated exposure		
No da	ta available		





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Repeated dose toxicity

Components:

2,4,6-tris(dimethylaminomethyl)phenol: Species: Rat, male and female NOEL: 15 mg/kg Application Route: Ingestion Exposure time: 1,032 h Number of exposures: 7 d Method: Subacute toxicity

Repeated dose toxicity - : No data available Assessment

Aspiration toxicity

No data available

Experience with human exposure

General Information:	No data available
Inhalation:	No data available
Skin contact:	No data available
Eye contact:	No data available
Ingestion:	No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

Ingestion:

No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

2,4,6-tris(dimethylaminomethyl)phenol: Toxicity to fish : LC50 (Cyprinus carpio (Carp)): 175 mg/l Exposure time: 96 h

Test Type: static test





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			Test substanc GLP: no	e: Fresh water	Print Date 07/29/20
2,4,6-1 Toxici	ponents: tris(dimethylaminomethy ty to daphnia and other ic invertebrates	: 	LC50 (Palaeor End point: mo Exposure time Test Type: sta Analytical mor	rtality 96 h ttic test	(Grass shrimp)): 718 mg/l
2,4,6-1	ponents: tris(dimethylaminomethy ty to algae/aquatic	: I I - - I	ErC50 (Desmo Exposure time Test Type: sta Analytical mor Test substanc	e: 72 h itic test	atus (green algae)): 84 mg/l 201
		 - 	Exposure time Test Type: sta Analytical mor Test substanc	: 72 h itic test	atus (green algae)): 6.25 mg/l 201
M-Fac toxicit	ctor (Acute aquatic y)	: 1	No data availa	ble	
Toxici toxicit	ty to fish (Chronic y)	: 1	No data availa	ble	
aquati	ty to daphnia and other ic invertebrates nic toxicity)	: 1	No data availa	ble	
M-Fac toxicit	ctor (Chronic aquatic y)	: 1	No data availa	ble	
Toxici	ty to microorganisms	: 1	No data availal	ble	
Toxici organi	ty to soil dwelling isms	: 1	No data availa	ble	
Plant	toxicity	: 1	No data availa	ble	
Sedim	nent toxicity	: 1	No data availa	ble	
Toxici organi	ty to terrestrial isms	: 1	No data availa	ble	





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	cology Assessment quatic toxicity	:	No data available		
Chronic	aquatic toxicity	:	No data available		
Toxicity	Data on Soil	:	No data available		
Other or the envir	ganisms relevant to onment	:	No data available		
Persiste	nce and degradabil	ity			
<u>Compor</u>	<u>nents:</u>				
2,4,6-tris Biodegra	(dimethylaminomethyladability		Test Type: aerobic Inoculum: activate Concentration: 2 Result: Not biodeg Biodegradation: 4 Exposure time: 28	ed sludge, non-adapted mg/l gradable 4 %	
Biochem Demand	nical Oxygen (BOD)	:	No data available		
Chemica (COD)	al Oxygen Demand	:	No data available		
BOD/CC	D	:	No data available		
ThOD		:	No data available		
BOD/Th	OD	:	No data available		
Dissolve (DOC)	d organic carbon	:	No data available		
Physico- removab	-chemical ility	:	No data available		
Stability	in water	:	No data available		
Photode	gradation	:	No data available		
Impact o Treatme	on Sewage nt	:	No data available		
Bioaccu Bioaccu	mulative potential mulation	:	No data available		
<u>Compor</u>	<u>nents:</u>				

2,4,6-tris(dimethylaminomethyl)phenol:





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	Partition octanol/	n coefficient: n- /water	:	Pow: >= 0.219 (70 log Pow: -0.66 (70 Method: OPPTS & GLP: yes).7 °F / 21.5 °C)	Print Date 07/29/2019
	Mobilit	y in soil				
	Mobility	-	:	No data available		
		ition among mental compartments	:	No data available		
	Stability	/ in soil	:	No data available		
		idverse effects mental fate and ys	:	No data available		
	Results assess	of PBT and vPvB ment	:	No data available		
	Endocri potentia	ine disrupting al	:	No data available		
		ed organic bound ns (AOX)	:	No data available		
	Hazard	ous to the ozone lay	er			
		Depletion Potential	:	Protection of Stra Substances Remarks: This pro manufactured with		A Section 602 Class I
	Addition informa	nal ecological tion	:	No data available		
	Global (GWP)	warming potential	:	No data available		

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods	
Waste from residues	 Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of contents/ container to an approved waste disposal plant.





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Contaminated packaging

Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA

Not regulated as dangerous goods

IMDG

Not regulated as dangerous goods

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable for product as supplied.

National Regulations

DOT Classification Not regulated as dangerous goods

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 311/312 Hazards	:	Serious eye damage or eye irritation
SARA 313	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis)

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

CH INV	: Notified. Allowed to be imported / manufactured only by the notifiers. Please contact your Huntsman sales representative for more information.	
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: All components of this product are on the Canadian DSL

reporting levels established by SARA Title III, Section 313.





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AICS		: On the inventory,	Print Date 07/29/2019 or in compliance with the inventory
NZIoC		: Not in compliance	e with the inventory
ENCS		: Not in compliance	e with the inventory
KECI		: On the inventory,	or in compliance with the inventory
PICCS		: On the inventory,	or in compliance with the inventory
IECSC		: On the inventory,	or in compliance with the inventory
TCSI		: On the inventory,	or in compliance with the inventory
TSCA		: On the inventory,	or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIOC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

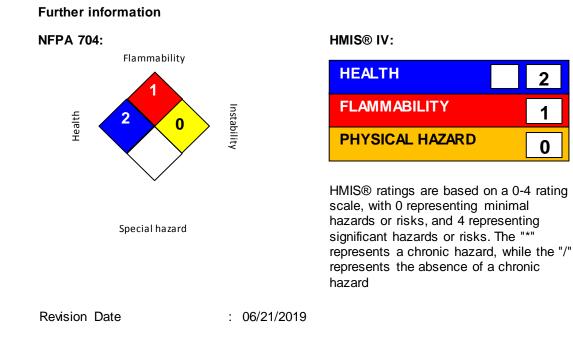
TSCA - 5(a) Significant New Use Rule List of Chemicals

No substances are subject to a Significant New Use Rule.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION







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