according to the OSHA Hazard Communication Standard

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EPOCAST® 1636 A US									
Version 2.0	Revision Date: 04/23/2025	SDS Number: 400001009893	Date of last issue: 06/16/2022 Date of first issue: 08/01/2015						
			Print Date 04/29/2025						
SECTION 1	. IDENTIFICATION								
Product name		: EPOCAST® 1	636 A US						
Manuf	acturer or supplier's	details							
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		: Global_Product_EHS_AdMat@huntsman.com							
Emergency telephone		: Chemtrec: (800) 424-9300 or (703) 527-3887							
Recon Recom	nmended use of the one	hemical and restric : Epoxy constitu	r tions on use lents						

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accore 1910.1200)	dance with the OSHA Hazard Communication Standard (29 CFR
Skin irritation	: Category 2
Serious eye damage	: Category 1
Skin sensitisation	: Category 1
Reproductive toxicity	: Category 1B
Short-term (acute) aquatic hazard	: Category 2
Long-term (chronic) aquatic hazard	: Category 2
Other hazards	
None known.	
GHS label elements	
Hazard pictograms	
Signal Word	: Danger

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Hazard Statements		Print Date 04/29/2025 : H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H360F May damage fertility. H411 Toxic to aquatic life with long lasting effects.					
Precautionary Statements		 Prevention: P201 Obtain sp. P202 Do not ha and understood P261 Avoid brea P264 Wash skir P272 Contamina the workplace. P273 Avoid rele P280 Wear prot face protection. Response: P302 + P352 IF P305 + P351 + water for severa and easy to do. CENTER/ doctor P308 + P313 IF attention. P333 + P313 If attention. P362 Take off of P391 Collect sp Storage: P405 Store lock Disposal: P501 Dispose of accordance with regulations. 	ecial instructions before use. ndle until all safety precautions have been read athing mist or vapors. athoroughly after handling. ated work clothing must not be allowed out of ase to the environment. ective gloves/ protective clothing/ eye protection/ ON SKIN: Wash with plenty of soap and water. P338 + P310 IF IN EYES: Rinse cautiously with all minutes. Remove contact lenses, if present Continue rinsing. Immediately call a POISON r. exposed or concerned: Get medical advice/ skin irritation or rash occurs: Get medical advice/ ontaminated clothing and wash before reuse. illage. ed up. f contents/container to an approved facility in h local, regional, national and international				

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture	•	Mixture
		IVIIALUIC

Hazardous ingredients

Chemical name	CAS-No.	Concentration (% w/w)
aluminium	7429-90-5	20 - 30
2,2'-[(1-methylethylidene)bis(4,1- phenyleneoxymethylene)]bisoxirane	1675-54-3	20 - 30
limestone	1317-65-3	10 - 20
epoxy phenol novolac resin	28064-14-4	10 - 20

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alum	inium hydroxide	2	1645-51-2	Print Date 5	904/29/2025 - 10
1,4-b	is(2,3-epoxypropoxy)	butane 2	425-79-8	1	- 5

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. Consult a physician. Show this material safety data sheet to the doctor in attendance. Treat symptomatically.
If inhaled	:	Get medical attention if symptoms occur. If inhaled, remove to fresh air. Get medical attention if symptoms occur.
In case of skin contact	:	If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.
In case of eye contact	:	Small amounts splashed into eyes can cause irreversible tissue damage and blindness. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Continue rinsing eyes during transport to hospital. Remove contact lenses. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Induce vomiting immediately and call a physician. Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.
Most important symptoms and effects, both acute and delayed	:	Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. May damage fertility.
Protection of first-aiders	:	First Aid responders should pay attention to self-protection and use the recommended protective clothing If potential for exposure exists refer to Section 8 for specific personal protective equipment. Avoid inhalation, ingestion and contact with skin and eyes. No action shall be taken involving any personal risk or without

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					Print Date 04/29/2025	
				suitable training. It may be dangero mouth-to-mouth re	us to the person providing aid to give suscitation.	
	Notes to phys	sician	:	Treat symptomation	cally.	
SEC	TION 5. FIRE	-FIGHTING MEA	\ SU	RES		
	Suitable extin	guishing media	:	Water spray Alcohol-resistant f Carbon dioxide (C Dry chemical	oam O2)	
	Unsuitable ex media	tinguishing	:	Exercise caution v scatter and spread	vhen using a high volume water jet as it may I fire	
	Specific haza firefighting	rds during	:	Do not allow run-c courses.	ff from fire fighting to enter drains or water	
	Hazardous co products	ombustion	:	Metal oxides Carbon oxides Phenolics		
	Specific extin methods	guishing	:	Use extinguishing circumstances and	measures that are appropriate to local the surrounding environment.	
	Further inform	nation	:	Collect contamina must not be discha Fire residues and be disposed of in a	ted fire extinguishing water separately. This arged into drains. contaminated fire extinguishing water must accordance with local regulations.	
	Special prote for fire-fighter	ctive equipment s	:	Wear self-containe necessary.	ed breathing apparatus for firefighting if	

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 product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

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					Print Date 04/29/2025
	Methoo contair	ds and materials for ment and cleaning up	:	Soak up with iner acid binder, unive Keep in suitable,	t absorbent material (e.g. sand, silica gel, ersal binder, sawdust). closed containers for disposal.
SEC	TION 7	. HANDLING AND ST	OR	AGE	
	Advice fire and	on protection against d explosion	:	Normal measures	for preventive fire protection.
	Advice	on safe handling	:	Repeated or prote and/or dermatitis Persons suffering should avoid cont product. Do not breathe va Avoid exposure - Avoid contact with For personal prot Smoking, eating a application area. To avoid spills du Dispose of rinse v regulations.	onged skin contact may cause skin irritation and sensitization of susceptible persons. from asthma, eczema or skin problems act, including dermal contact, with this apors/dust. obtain special instructions before use. n skin and eyes. ection see section 8. and drinking should be prohibited in the ring handling keep bottle on a metal tray. water in accordance with local and national
	Conditi	ions for safe storage	:	Keep container tig place. Containers which kept upright to pro Observe label pre Keep in properly	ghtly closed in a dry and well-ventilated are opened must be carefully resealed and event leakage. ecautions. abeled containers.
	Materia	als to avoid	:	For incompatible SDS.	materials please refer to Section 10 of this
	Recom temper	mended storage ature	:	36 - 104 °F / 2 - 4	0 °C
	Furthe storage	r information on e stability	:	Stable under norr	nal conditions.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type	Control	Basis
		(Form of	parameters /	
		exposure)	Permissible	
			concentration	

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alumi	nium	7429-90-5	Print Date 04/29/2025 TWA (total 15 mg/m3 OSHA Z-1			
			dust)	(Aluminum)		
			TWA	5 mg/m3	OSHA Z-1	
			(respirable	(Aluminum)		
			fraction)			
			TWA	1 mg/m3	ACGIH	
			(Respirable	(Aluminum)		
			particulate			
			matter)			
			TWA	5 mg/m3	NIOSH REI	
			(Respirable)	o		
			TWA (total)	10 mg/m3	NIOSH REI	
			TWA (Total	15 mg/m3	OSHA PO	
			dust)	(Aluminum)	001///10	
				5 mg/m3	OSHA PO	
			(respirable	(Aluminum)	001///10	
			dust fraction)	(Adminum)		
limes	tono	1317-65-3		15 ma/m3		
miles	tone	1017 00 0	dust)	10 mg/mo	001721	
				5 mg/m3	OSHA 7-1	
			(respirable	0 1119/1110	001///21	
			(respirable			
				5 ma/m3		
			(Respirable)	(Calcium	MOOITILE	
			(Respirable)	(Odicium carbonate)		
			T\//A (total)	10 mg/m3		
			TWA (lotal)	(Calcium	NICOTINEL	
				(Calcium		
				15 mg/m2		
			duct)	15 mg/ms	USHA FU	
				5 mg/m2		
			(rospirable	5 mg/m5	USHA FU	
			(lespirable duct fraction)			
alumi	nium hydroxido	21645 51 2		1 mg/m2		
aium		21040-01-2	(Docpirable		ACGIN	
				(Auminum)		
			matter)			

Personal protective equipment

Respiratory protection: WARNING! This product contains quartz, which has
been classified by IARC as carcinogenic for humans (Group
1), and which can cause silicosis and lung cancer following
exposure to respirable dust. It is therefore important to take
particular care to avoid inhalation exposure when
mechanically processing cured material (e.g. grinding,
sanding, sawing).Hand protection
Material: butyl-rubber
: > 8 hMaterial: Solvent-resistant gloves (butyl-rubber)

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Remar	ks	: (Chemical-resistar approved standar chemical products necessary. The suitability for with the producers	at, impervious gloves complying with an d should be worn at all times when handling s if a risk assessment indicates this is a specific workplace should be discussed s of the protective gloves.
Eye protection		:	Eye wash bottle w Tightly fitting safe Wear face-shield problems.	vith pure water ty goggles and protective suit for abnormal processing
Skin a	Skin and body protection		: Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work pla	
Hygier	ne measures	:	When using do no When using do no Wash hands befo	ot eat or drink. ot smoke. re breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	paste
Color	:	gray
Odor	:	slight
Odor Threshold	:	No data is available on the product itself.
рН	:	No data is available on the product itself.
Melting point/freezing point	:	No data available
Boiling point/boiling range	:	No information available.
Flash point	:	> 279 °F / > 137 °C Method: Pensky-Martens closed cup
Evaporation rate	:	No data is available on the product itself.
Self-ignition	:	The substance or mixture is not classified as pyrophoric.
Upper explosion limit / Upper flammability limit	:	No data is available on the product itself.
Lower explosion limit / Lower flammability limit	:	No data is available on the product itself.

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Vapor pressure		:	No data is availa	Print Date 04/29/2025 ble on the product itself.
R	elative vapor density	:	No data is availa	ble on the product itself.
R	elative density	:	1.65 - 1.8	
D	ensity	:	1.73 g/cm3 (77 °	F / 25 °C)
S	olubility(ies) Water solubility	:	practically insolu	ble (68 °F / 20 °C)
	Solubility in other solver	its :	No data is availa	ble on the product itself.
Pa	artition coefficient: n-	:	No data is availa	ble on the product itself.
A	utoignition temperature	:	No data is availa	ble on the product itself.
D	ecomposition temperatu	e :	> 392 °F / > 200	°C
Se de (S	elf-Accelerating ecomposition temperatur SADT)	: Ə	No data is availa	ble on the product itself.
Vi	iscosity Viscosity, dynamic	:	ca. 38,000 mPa.	6
E	xplosive properties	:	No data is availa	ble on the product itself.
0	xidizing properties	:	No data is availa	ble on the product itself.
М	olecular weight	:	No data available	9
Pa	article size	:	No data is availa	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 reactions	:	No hazards to be specially mentioned.
Conditions to avoid	:	None known.
Hazardous decomposition products	:	No hazardous decomposition products are known.

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SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified due to lack of data.

Product:

Acute oral toxicity	:	Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate: 37.22 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method
Components:		
2,2'-[(1-methylethylidene)bis	(4,	1-phenyleneoxymethylene)]bisoxirane:
Acute oral toxicity	:	LD50 (Rat, female): > 2,000 mg/kg Method: OECD Test Guideline 420 Assessment: The substance or mixture has no acute oral toxicity Remarks: No mortality observed at this dose.
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
limestone:		
Acute oral toxicity	:	LD50 (Rat): 6,450 mg/kg
epoxy phenol novolac resin:	1	
Acute oral toxicity	:	LD50 (Rat, female): > 2,000 mg/kg Method: OECD Test Guideline 420 Assessment: The substance or mixture has no acute oral toxicity
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
aluminium hydroxide:		
Acute oral toxicity		LD50 (Rat, female): > 2,000 mg/kg Method: OECD Test Guideline 423 Assessment: The substance or mixture has no acute oral toxicity

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1 <i>1</i> -b	is(2.3-onovypropovy)butano:	Print Date 04/29/2	2025
Acute	e oral toxicity	: LD50 (Rat, ma Method: OECD GLP: yes Assessment: T single ingestior	le and female): 1,163 mg/kg 9 Test Guideline 401 he component/mixture is moderately toxic af n.	ter
Acute inhalation toxicity		: LC50 (Rat): > 2 Exposure time: Test atmosphe	2.068 mg/l 4 h re: dust/mist	
		Test atmosphe Method: Exper Assessment: T short term inha inhalation as de	re: dust/mist t judgment he component/mixture is moderately toxic af lation., The substance/mixture is not toxic or efined by dangerous goods regulations.	ter 1
Acute dermal toxicity		: Acute toxicity e Method: Conve	estimate: 1,100 mg/kg erted acute toxicity point estimate	
		Assessment: T single contact	he component/mixture is moderately toxic af with skin.	ter

Skin corrosion/irritation

Causes skin irritation.

Components:

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

Rab	bit
4 h	
Irrita	iting to skin.
OEC	D Test Guideline 404
Irrita	iting to skin.
	: Rab : 4 h : Irrita : OEC : Irrita

epoxy phenol novolac resin:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	Irritating to skin.

1,4-bis(2,3-epoxypropoxy)butane:

Species Method	:	Rabbit OECD Test Guideline 404
Result GLP	:	Skin irritation ves

Serious eye damage/eye irritation

Causes serious eye damage.

Components:

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

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Species Result Assessment Method		-	Rabbit Irritating to eyes. Irritating to eyes. OECD Test Guide	Print Date 04/29/2025 Print Date 04/29/2025	
limestone: Species Result Assessment		: : :	Rabbit Mechanical irritation of the eyes is possible. No eye irritation		
epoxy Specie Result Methor	phenol novolac res es d	sin: : :	Rabbit Irritating to eyes. OECD Test Guide	line 405	
1,4-bis Specie Assess Method GLP	s(2,3-epoxypropoxy es sment d)butan : : :	e: Rabbit Risk of serious da OECD Test Guide yes	mage to eyes. line 405	

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified due to lack of data.

Components:

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

Test Type :	Local lymph node assay (LLNA)
Exposure routes :	Skin
Species :	Mouse
Method :	OECD Test Guideline 429
Result :	The product is a skin sensitiser, sub-category 1B.

limestone:

Exposure routes	:	Skin
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitisation.

epoxy phenol novolac resin:

Exposure routes	:	Skin
Species	:	Mouse
Method	:	OECD Test Guideline 429
Result	:	May cause sensitisation by skin contact.

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	1,4-bis Exposu Specie Methoo Result GLP Assess Germ o Not cla 2,2'-[(1	(2,3-epoxypropoxy are routes s ment cell mutagenicity ssified due to lack o onents: -methylethylidene	y)butane: : Skin : Guinea pig : OECD Test G : May cause se : yes : Harmful if inha of data.)bis(4,1-phenyleneo)	Print Date 04/29/2025 uideline 406 nsitisation by skin contact. aled.
	Genoto	oxicity in vitro	: Test Type: In Test system: Metabolic acti Result: positiv Test Type: rev Test system: Metabolic acti Method: Muta mutation assa Result: negati	vitro mammalian cell gene mutation test mouse lymphoma cells vation: without metabolic activation re verse mutation assay Salmonella typhimurium vation: with and without metabolic activation genicity (Salmonella typhimurium - reverse y) ve
	Genoto	oxicity in vivo	: Test Type: in Species: Mou Cell type: Ger Application Ro Dose: 3333, 1 Result: negati Test Type: ge Species: Rat Cell type: Son Application Ro Dose: 50,250 Method: OEC Result: negati	vivo assay se (male) m bute: Oral 0000 mg/kg ve ne mutation test (male) natic bute: Oral 500,1000 mg/kg bw/day D Test Guideline 488 ve
	epoxy Genoto	phenol novolac re exicity in vitro	sin: : Metabolic acti Result: positiv Concentration Metabolic acti Result: positiv	vation: with and without metabolic activation re n: 0 - 5000 ug/plate vation: with and without metabolic activation re
	Genoto	oxicity in vivo	: Cell type: Ger Application Ro Result: negati	m pute: Oral ve

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		Cell type: Som Application Ro Dose: 0 - 5000 Result: negativ	atic ute: Oral) mg/kg /e
1,4-b	is(2,3-epoxypropox	y)butane:	
Genc	otoxicity in vitro	: Test Type: rev Concentration: Metabolic activ Method: OECE Result: positive GLP: yes Remarks: Not although insuff	erse mutation assay 10 - 5000 ug/plate vation: with and without metabolic activation D Test Guideline 471 e classified due to data which are conclusive ficient for classification.
		Test Type: Chi Test system: C Concentration: Metabolic activ Method: OECE Result: positive GLP: yes Remarks: Not although insuff	romosome aberration test in vitro Chinese hamster lung cells 1 - 100 μg/L vation: with and without metabolic activation D Test Guideline 473 e classified due to data which are conclusive ficient for classification.
		Test Type: In v Test system: C Metabolic activ Method: OECE Result: positive GLP: no Remarks: Not although insuff	vitro mammalian cell gene mutation test Chinese hamster lung cells vation: with and without metabolic activation D Test Guideline 476 e classified due to data which are conclusive ficient for classification.
Genc	otoxicity in vivo	: Test Type: In v Species: Mous Cell type: Som Application Ro Exposure time Dose: 187.5 - Method: OECE Result: negativ GLP: yes	vivo micronucleus test se (male) atic ute: Oral : 4 d 750 mg/kg D Test Guideline 474 ve
		Test Type: uns Species: Rat Cell type: Liver Application Ro Method: OECE Result: negativ	scheduled DNA synthesis assay r cells ute: Oral D Test Guideline 486 /e
		Test Type: ger Species: Rat (i	ne mutation test male)

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		Cell type: Soma Application Rou Dose: 0, 62.5, 7 Method: OECD Result: negative	Print Date 04/29/2025 atic ute: Oral 125 and 250 mg/kg Test Guideline 488 e	
Germ cell mutagenicity - : Assessment		: Weight of evide cell mutagen., / effects.	Weight of evidence does not support classification as a germ cell mutagen., Animal testing did not show any mutagenic effects.	

Carcinogenicity

Not classified due to lack of data.

Components:

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

Species Application Route Exposure time Dose Frequency of Treatment NOAEL Method Result Target Organs	 Rat, male Oral 24 month(s) 0, 2, 15, or 100 mg/kg bw/day 7 days/week 15 mg/kg bw/day OECD Test Guideline 453 negative Digestive organs
Species Application Route Exposure time Dose Frequency of Treatment NOEL Method Result Target Organs	 Mouse, male Dermal 24 month(s) 0, 0.1, 10, 100 mg/kg bw/day 3 days/week 0.1 mg/kg body weight OECD Test Guideline 453 negative Digestive organs
Species Application Route Exposure time Dose Frequency of Treatment NOEL Method Result	 Rat, female Dermal 24 month(s) 0.1, 100, 1000 mg/kg bw/day 5 days/week 100 mg/kg body weight OECD Test Guideline 453 negative
Species Application Route Exposure time Dose Frequency of Treatment NOAEL Method Result Target Organs	 Rat, female Oral 24 month(s) 0, 2, 15, or 100 mg/kg bw/day 7 days/week 100 mg/kg bw/day OECD Test Guideline 453 negative Digestive organs

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sion	Revision Date: 04/23/2025	SDS Number: 400001009893	Date of last issue: 06/16/2022 Date of first issue: 08/01/2015
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Specie Applic Expose Dose Frequ NOEL Metho Resul Targe	es cation Route sure time ency of Treatment od t t Organs	 Rat, females Oral 24 month(s) 0, 2, 15, or 100 7 days/week 2 mg/kg bw/day OECD Test Gui negative Digestive organ 	mg/kg bw/day , deline 453 s
epoxy	/ phenol novolac re	sin:	
Specie Applic Expose Dose Frequ Metho Resul	es cation Route sure time ency of Treatment od t	 Rat, male and f Oral 24 month(s) 15 mg/kg 7 daily OECD Test Gui negative 	emale deline 453
Specie Applic Expose Dose Frequ Metho Resul	es cation Route sure time ency of Treatment od t	: Mouse, male : Dermal : 24 month(s) : .1 mg/kg : 3 daily : OECD Test Gui : negative	deline 453
Specie Applic Expose Dose Frequ Metho	es ation Route sure time ency of Treatment od t	 Rat, female Dermal 24 month(s) 1 mg/kg 5 daily OECD Test Gui negative 	deline 453
IARC	No ingredic identified a	ent of this product prese is probable, possible or	ent at levels greater than or equal to 0.1% is confirmed human carcinogen by IARC.
OSHA	No compoi on OSHA's	nent of this product pres s list of regulated carcin	sent at levels greater than or equal to 0.1% is ogens.
NTP	No ingredic identified a	ent of this product prese is a known or anticipate	ent at levels greater than or equal to 0.1% is d carcinogen by NTP.

Components:

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

: Test Type: Two-generation study Species: Rat, male and female Application Route: Oral

according to the OSHA Hazard Communication Standard

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|--|

Versio 2.0	n	Revision Date: 04/23/2025	SD 400	S Number: 0001009893	Date of last issue: 06/16/2022 Date of first issue: 08/01/2015
				Dose: 0, 50, 180, Duration of Single Frequency of Trea General Toxicity F General Toxicity F Symptoms: No ad Method: OECD Te Result: No effects development were	Print Date 04/29/2025 540 or 750 milligram per kilogram Treatment: 238 d atment: 1 daily Parent: NOEL: 540 mg/kg body weight 1: NOEL: 750 mg/kg body weight verse effects est Guideline 416 on fertility and early embryonic e detected.
E	ffects	on fetal development	:	Species: Rabbit, for Application Router Dose: 0, 30, 100 of Duration of Single Frequency of Treat General Toxicity M Developmental Tot Method: Other gui Result: No teratog	emale Dermal or 300 milligram per kilogram Treatment: 28 d atment: 1 daily Maternal: NOAEL: 30 mg/kg body weight oxicity: NOAEL: 300 mg/kg body weight delines enic effects
				Test Type: Pre-na Species: Rabbit, fr Application Route: Dose: 0, 20, 60 o Duration of Single Frequency of Trea General Toxicity M Developmental To Method: OECD Te Result: No teratog	tal emale : Oral r 180 milligram per kilogram Treatment: 13 d atment: 1 daily Maternal: NOAEL: 60 mg/kg body weight exicity: NOAEL: 180 mg/kg body weight est Guideline 414 enic effects
				Test Type: Pre-na Species: Rat, fem Application Route: Dose: 0, 60, 180 a Duration of Single Frequency of Trea General Toxicity M Developmental To Method: OECD Te Result: No teratog	tal ale c Oral and 540 milligram per kilogram Treatment: 10 d atment: 1 daily Maternal: NOAEL: 180 mg/kg body weight exicity: NOAEL: > 540 mg/kg body weight est Guideline 414 enic effects
e E	poxy ffects	phenol novolac resin on fertility	:	Species: Rat, male Application Route Method: OECD Te Result: No effects development were	e and female Oral est Guideline 416 on fertility and early embryonic e detected.
E	ffects	on fetal development	:	Species: Rabbit, for Application Router General Toxicity M Result: No teratog	emale Dermal /aternal: NOAEL: 30 mg/kg body weight enic effects

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/ersion 2.0	Revision Date: 04/23/2025	SDS Number: 400001009893	Date of last issue: 06/16/2022 Date of first issue: 08/01/2015
		Species: Rabbit Application Rou General Toxicity Method: OECD Result: No terat Species: Rat, fe Application Rou General Toxicity Method: OECD Result: No terat	Print Date 04/29/2025 , female te: Oral / Maternal: NOAEL: 60 mg/kg body weight Test Guideline 414 ogenic effects male te: Oral / Maternal: NOAEL: 180 mg/kg body weight Test Guideline 414 ogenic effects
1.4-bi	s(2.3-epoxypropoxy)b	utane:	
Effect	s on fertility	: Test Type: repro Species: Rat, m Application Rou Dose: 0/50/200/ Duration of Sing General Toxicity General Toxicity Target Organs: Method: OECD GLP: yes	oductive and developmental toxicity study ale and female te: Oral '500 mg/kg bw/day gle Treatment: 43 d / Parent: LOEL: 500 mg/kg body weight / F1: LOAEL: 500 mg/kg body weight Gastrointestinal tract Test Guideline 421
		Test Type: Exte study Species: Rat, m Application Rou Dose: 0/10/55/3 General Toxicity General Toxicity Method: OECD GLP: yes	nded one-generation reproduction toxicity ale and female te: Oral 00 mg/kg bw/day / Parent: NOAEL: 55 mg/kg body weight / F1: NOAEL: 300 mg/kg body weight Test Guideline 443
Effect	s on fetal development	: Test Type: Pre- Species: Rat, fe Application Rou Dose: 0/30/100/ Duration of Sing General Toxicity Developmental Method: OECD GLP: yes Remarks: Inform similar substance	natal male te: Oral '300 mg/kg bw/day gle Treatment: 17 d / Maternal: NOAEL: 300 mg/kg body weight Toxicity: NOAEL: 300 mg/kg body weight Test Guideline 414 nation given is based on data obtained from ces.
		Test Type: repro Species: Rat, m Application Rou Dose: 0/33/110/ Duration of Sing General Toxicity Embryo-fetal tox Method: OECD	oductive and developmental toxicity study ale and female te: Oral '300 mg/kg bw/day gle Treatment: 18 d / Maternal: NOAEL: 110 mg/kg body weight kicity.: NOAEL: 300 mg/kg body weight Test Guideline 414

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Version 2.0	Revision Date: 04/23/2025	SDS Number: 400001009893	Date of last issue: 06/16/2022 Date of first issue: 08/01/2015
		GLP: yes	Print Date 04/29/2025
		Test Type: Pre-r Species: Rabbit Application Rout Dose: 0/125/250 General Toxicity Embryo-fetal tox Method: OECD GLP: yes	natal te: Oral)/500 mg/kg bw/day r Maternal: NOAEL: 250 mg/kg body weight kicity.: NOAEL: 250 mg/kg body weight Test Guideline 414
Repro Asses	oductive toxicity - ssment	: Clear evidence of fertility, based or	of adverse effects on sexual function and namimal experiments.
STO Not c	F-single exposure lassified due to lack of e	data.	
STO	F -repeated exposure		
Not c	lassified due to lack of	data.	
Repe	ated dose toxicity		
Com	ponents:		
2,2'-[(1-methylethylidene)b	is(4,1-phenyleneoxy	methylene)]bisoxirane:
Speci NOAI Applie Expo Numb Dose Metho Speci NOAI Applie Expo Numb Dose Metho	ies EL cation Route sure time per of exposures od ies EL cation Route sure time per of exposures	 Rat, male and fe 50 mg/kg oral (gavage) 14 Weeks 7 d 0, 50, 250, 1000 OECD Test Guid Rat, male and fe >= 10 mg/kg Skin contact 13 Weeks 5 d 0, 10, 100, 1000 OECD Test Guid 	emale mg/kg/day deline 408 emale mg/kg/day deline 411
Speci NOAI Applid Expo Numb Dose Metho	ies EL cation Route sure time per of exposures od	 Mouse, male 100 mg/kg Skin contact 13 Weeks 3 d 0, 1, 10, 100 mg OECD Test Guid 	ı/kg/day deline 411
epox Speci NOAI Applid Expos	y phenol novolac resi ies EL cation Route sure time	n: : Rat, male and fe : 50 mg/kg : Ingestion : 14 Weeks	emale

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Numb Metho	per of exposures	: 7 d : Subchronic tox	Print Date 04/29/2025
Speci NOEI Applic Expos Numb Metho	ies - cation Route sure time ber of exposures od	 Rat, male and f 10 mg/kg Skin contact 13 Weeks 5 d Subchronic tox 	female icity
Speci NOAE Applic Expo Numb Metho	ies EL cation Route sure time per of exposures od	 Mouse, male 100 mg/kg Skin contact 13 Weeks 3 d Subchronic tox 	icity
1,4-bi Speci NOAE Applid Expos Numb Dose Metho Expos Numb Dose Metho GLP Rema	is(2,3-epoxypropoxy ies EL cation Route sure time per of exposures od ies EL cation Route sure time per of exposures od arks)butane: : Rat, male and f : 200 mg/kg : Oral : 28 d : daily : 25, 100, 200, 4 : Subacute toxic : Rat, male and f : 263 mg/kg : Oral : 90 h : daily : 0,30,100,300 m : OECD Test Gu : yes : Information give substances. : Harmful if inhal	female 00 mg/kg ity female ng/kg bw/day ideline 408 en is based on data obtained from similar ed.
Aspir Not c Expe No da Toxic No da No da Furth No da	ration toxicity lassified due to lack o rience with human e ata available cology, Metabolism, ata available ological effects ata available her information ata available	f data. xposure Distribution	

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Version Revision Date: 2.0 04/23/2025

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Print Date 04/29/2025

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:		
2,2'-[(1-methylethylidene)big	s(4,	1-phenyleneoxymethylene)]bisoxirane:
Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 2 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 1.8 mg/l Exposure time: 48 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50: 11 mg/l Exposure time: 72 h Test Type: static test Test substance: Fresh water Method: EPA-660/3-75-009
		NOEC: 4.2 mg/l Exposure time: 72 h Test Type: static test Test substance: Fresh water Method: EPA-660/3-75-009
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0.3 mg/l Exposure time: 21 d Test Type: semi-static test Test substance: Fresh water Method: OECD Test Guideline 211
Toxicity to microorganisms	:	IC50 (activated sludge): > 100 mg/l Exposure time: 3 h Test Type: static test Test substance: Fresh water
Ecotoxicology Assessment		
Chronic aquatic toxicity	:	Toxic to aquatic life with long lasting effects.
limestone:		
Toxicity to fish	:	LC50 : > 56,000 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	EC50 (Daphnia magna (Water flea)): > 350 mg/l Exposure time: 125 d Test Type: semi-static test Test substance: Fresh water

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	00000	nhanal navalaa rasin			Print Date 04/29/2025
	Toxicity	r to fish	:	LC50 (Oncorhync Exposure time: 96 Test Type: static t Test substance: F Method: OECD Te	hus mykiss (rainbow trout)): 1.5 mg/l 5 h est resh water est Guideline 203
	Toxicity aquatic	to daphnia and other invertebrates	:	EC50 (Daphnia m Exposure time: 48 Test Type: static t Test substance: F Method: OECD Te EC50 (Daphnia m Exposure time: 48 Test Type: static t Test substance: F	agna (Water flea)): 1.7 mg/l s h est resh water est Guideline 202 agna (Water flea)): 2.7 mg/l s h est
	Toxicity plants	v to algae/aquatic	:	EC50 (Selenastru Exposure time: 72 Test Type: static t Test substance: F	m capricornutum (green algae)): 9.4 mg/l ? h est resh water
	Toxicity toxicity	y to fish (Chronic	:	GLP: yes	
	Toxicity aquatic (Chroni	to daphnia and other invertebrates c toxicity)	:	NOEC (Daphnia n Exposure time: 21 Test Type: semi-s Test substance: F Method: OECD Te	nagna (Water flea)): 0.3 mg/l d tatic test resh water est Guideline 211
	Toxicity	to microorganisms	:	IC50 (activated sli Exposure time: 3 Test Type: static t Test substance: F	udge): > 100 mg/l h est resh water
	alumin	ium hydroxide:			
	Toxicity	to fish	:	LC50 : > 10,000 n Exposure time: 96	ng/l 5 h
	Toxicity aquatic	to daphnia and other invertebrates	:	EC50: > 10,000 m Exposure time: 48	ng/l 8 h
	1,4-bis	(2,3-epoxypropoxy)bi	utai	ne:	
	Toxicity	r to fish	:	LC50 (Brachydani End point: mortalii Exposure time: 96 Test Type: static t Analytical monitor Test substance: F Method: OECD Te GLP: no	io rerio (zebrafish)): 24 mg/l ty 6 h est ing: no iresh water est Guideline 203

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ersion)	Revision Date: 04/23/2025	SD 400	S Number: 0001009893	Date of last issue: 06/16/2022 Date of first issue: 08/01/2015
				Print Date 04/29/2025
Toxicit aquati	ty to daphnia and other c invertebrates	:	EC50 (Daphnia End point: Imm Exposure time: Test Type: stat Analytical mon Test substance Method: OECD GLP: no	magna (Water flea)): 75 mg/l obilization 24 h ic test toring: no : Fresh water Test Guideline 202
Toxicit plants	ty to algae/aquatic	:	EL50 (Pseudok mg/l Exposure time: Test Type: stat Analytical mon Test substance Method: OECD GLP: yes	irchneriella subcapitata (green algae)): > 160 72 h ic test toring: yes : Fresh water Test Guideline 201
			NOELR (Pseud mg/l Exposure time: Test Type: stat Analytical mon Test substance Method: OECD GLP: yes	lokirchneriella subcapitata (green algae)): 40 72 h ic test toring: yes : Fresh water Test Guideline 201
Toxicit toxicity	y to fish (Chronic /)	:	NOEC (Danio r Exposure time: Test Type: flow Method: OECD	erio (zebra fish)): > 3.2 mg/l 35 d -through test Test Guideline 210
Toxicit aquatio (Chror	ty to daphnia and other c invertebrates hic toxicity)	:	NOEC (Daphni Exposure time: Test Type: sen Method: OECD GLP: yes	a magna (Water flea)): 15 mg/l 21 d ii-static test Test Guideline 211
Toxicit	ty to microorganisms	:	IC50 (activated Exposure time: Test Type: stat Analytical moni Test substance Method: OECD GLP: no	sludge): > 100 mg/l 3 h ic test toring: no : Fresh water Test Guideline 209
Persis	stence and degradabili	ity		
Comp	onents:			

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Version 2.0	Revision Date: 04/23/2025	SDS Number: 400001009893	Date of last issue: 06/16/2022 Date of first issue: 08/01/2015			
		Result: Not readi Biodegradation: Exposure time: 2 Method: OECD T	Print Dat y biodegradable. 5 % 3 d est Guideline 301F	e 04/29/2025		
Stab	ility in water	: Degradation half Method: OECD T Remarks: Fresh	life (DT50): 4.83 d (25 °C) pH: 4 est Guideline 111 vater			
		Degradation half Method: OECD T Remarks: Fresh	life (DT50): 7.1 d (25 °C) pH: 9 est Guideline 111 vater			
		Degradation half Method: OECD T Remarks: Fresh	ife (DT50): 3.58 d (25 °C) pH: 7 est Guideline 111 vater			
epox	v phenol novolac res	sin:				
Biod	egradability	: Inoculum: Sewag Concentration: 20 Result: Not readii Biodegradation: Exposure time: 2 Method: OECD T	e (STP effluent)) mg/l y biodegradable. 5 % 3 d est Guideline 301F			
Stab	ility in water	: Degradation half Method: OECD T Remarks: Fresh	ife (DT50): 4.83 d (25 °C) pH: 4 est Guideline 111 vater			
		Degradation half Method: OECD T Remarks: Fresh	life (DT50): 7.1 d (25 °C) pH: 9 est Guideline 111 vater			
		Degradation half Method: OECD T Remarks: Fresh	ife (DT50): 3.58 d (25 °C) pH: 7 est Guideline 111 vater			
1,4-b	ois(2,3-epoxypropoxy)butane:				
Biod	egradability	: aerobic Inoculum: activat Concentration: 20 Result: Not readii Biodegradation: Exposure time: 2 Method: OECD T GLP: yes	ed sludge) mg/l y biodegradable. 43 % 3 d est Guideline 301F			
		aerobic Inoculum: Sewag Concentration: 20 Dissolved organic Result: Not readi Biodegradation:	e (STP effluent)) mg/l : carbon (DOC) y biodegradable. 38 %			

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EPOCA	ST® 1636 A US				
Version 2.0	Revision Date: 04/23/2025	SE 40	DS Number: 0001009893	Date of last issue: 06, Date of first issue: 08,	/16/2022 /01/2015
			Exposure time: 28 Method: OECD Te GLP: no	3 d est Guideline 301E	Print Date 04/29/2025
Bioad	cumulative potential				
	<u>oonems.</u>	_ / 4	4		
2,2 -[(Bioac	cumulation	s(4, :	Bioconcentration Remarks: Does n	factor (BCF): 31 ot bioaccumulate.	
Partiti octan	on coefficient: n- ol/water	:	log Pow: 3.242 (7 pH: 7.1 Method: OECD Te	7 °F / 25 °C) est Guideline 117	
limes Partiti octan	tone: on coefficient: n- ol/water	:	log Pow: < 1		
epox	v phenol novolac resin):			
Bioac	cumulation	:	Bioconcentration Remarks: Does n	factor (BCF): 31 ot bioaccumulate.	
Partiti octan	on coefficient: n- ol/water	:	log Pow: 3.242 (7 pH: 7.1 Method: OECD Te	7 °F / 25 °C) est Guideline 117	
1 4-bi	s(2 3-enoxypropoxy)h	utai	ne.		
Partiti octan	on coefficient: n- ol/water	:	log Pow: -0.269 (7 pH: 6.7 Method: OECD To GLP: yes	77 °F / 25 °C) est Guideline 117	
Mobil	ity in soil				
Com	oonents:				
2,2'-[(Distrib enviro	1-methylethylidene)bis oution among onmental compartments	s(4, :	1-phenyleneoxym Koc: 445	ethylene)]bisoxirane:	
epox Distril enviro	y phenol novolac resin oution among onmental compartments	1 : :	Koc: 445		
1,4-bi	s(2,3-epoxypropoxy)b	utai	ne:		
Distril enviro	oution among onmental compartments	:	Koc: 12.59 Method: OECD To	est Guideline 121	

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Version 2.0	Revision Date: 04/23/2025	SDS Number: 400001009893	Date of last issue: 06/16/2022 Date of first issue: 08/01/2015
Other a	adverse effects		Print Date 04/29/2025
Produc	<u>ct:</u>		
Ozone	Depletion Potential	: Regulation: 40 CF Protection of Stra Substances Remarks: This pro manufactured with U.S. Clean Air Ac B).	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 +
Additio informa	nal ecological ation	: An environmental unprofessional ha Toxic to aquatic li	hazard cannot be excluded in the event of ndling or disposal. fe with long lasting effects.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods		
Waste from residues	:	Dispose of contents and container in accordance with all local, regional, national and international regulations. Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG		
UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BISPHENOL A EPOXY RESIN, EPOXY PHENOL
•		NOVOLAC RESIN)
Class	:	9
Packing group	:	
Labels	:	9
Environmentally hazardous	:	yes
IATA-DGR		
UN/ID No.	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (BISPHENOL A EPOXY RESIN, EPOXY PHENOL NOVOLAC RESIN)
Class	:	9
Packing group	:	Ш
Labels	:	Miscellaneous
Packing instruction (cargo	:	964

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Revision Date: 04/23/2025	SDS Number: 400001009893	Date of last issue: 06/16/2022 Date of first issue: 08/01/2015
f+ \		Print Date 04/29/2025
ng instruction enger aircraft)	: 964	
onmentally hazardous	: yes	
-Code		
ımber r shipping name	: UN 3082 : ENVIRONMEN N O S	TALLY HAZARDOUS SUBSTANCE, LIQUID,
	(BISPHENOL A RESIN)	EPOXY RESIN, EPOXY PHENOL NOVOLAC
	: 9	
ng group S	: 9	
Code	: F-A, S-F	
e pollutant	: yes	
port in bulk according	g to IMO instrument	S
oplicable for product as	supplied.	
estic regulation		
R		
/NA number	: UN 3082	
r shipping name	: Environmentally (BISPHENOL / NOVOLAC RES	/ hazardous substance, liquid, n.o.s. A EPOXY RESIN, EPOXY PHENOL SIN)
	: 9	,
ng group	:	
S Code	: CLASS 9 · 171	
e pollutant	: yes	
rks	: Shipment by gro may be shipped	bund under DOT is non-regulated; however it I per the applicable hazard classification to podal transport involving ICAO (IATA) or IMO
	Revision Date: 04/23/2025 (t) ng instruction enger aircraft) onmentally hazardous -Code imber r shipping name (ng group Scode e pollutant port in bulk according oplicable for product as estic regulation (R /NA number r shipping name (NA number r shipping name) (Scode e pollutant r shipping name	Revision Date: 04/23/2025SDS Number: 400001009893it) ang instruction:964enger aircraft) onmentally hazardous:yes-Code umber:UN 3082r shipping name:ENVIRONMENT N.O.S. (BISPHENOL A RESIN) :ng group:III ss:9Code:F-A, S-Fe pollutant:yesport in bulk according to IMO instrument oplicable for product as supplied.estic regulation:R /NA number:WA number:r shipping name:Environmentally (BISPHENOL A NOVOLAC RES) :is g group:III s:code:ft:yesport in bulk according to IMO instrument oplicable for product as supplied.estic regulationis c LASS 9code::

ecial precautions for user

Remarks	:	49CFR: no dangerous	good in r	non-bulk	packaging
---------	---	---------------------	-----------	----------	-----------

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

CERCLA Reportable Quantity

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

SARA 311/312 Hazards	: Respiratory or skin sensitization Reproductive toxicity
	Skin corrosion or irritation Serious eye damage or eye irritation

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EPOCAST® 1636 A US							
Version	Revision Date:	SDS Number:	Date of last issue: 06/16/2022				
20	01/22/2025	400004000002	Data of first issues: 09/01/2015				

 2.0
 04/23/2025
 400001009893
 Date of first issue: 08/01/2015

 Print Date 04/29/2025

 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) >=0.1%, as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

California Prop. 65

WARNING: This product can expose you to chemicals including methanol, 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 ingredients of this product are reported in the following inventories:

DSL	: All components of this product are on the Canadian DSI
AIIC	: On the inventory, or 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	: All substances listed as active on the TSCA inventory

Inventories

AIIC (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIOC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TECI (Thailand), 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.

according to the OSHA Hazard Communication Standard



SDS Number:

400001009893



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SECTION 16. OTHER INFORMATION



The information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards,

according to the OSHA Hazard Communication Standard





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Print Date 04/29/2025

toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE.



EPOCAST® 1636 B US

Version Revision Date: 2.1

06/14/2023

Date of last issue: 06/09/2022 Date of first issue: 11/08/2016

Distributed By

Freeman Manufacturing & Supply Co. www.freemansupply.com 800-321-8511 Fl

SDS Number:

400001008591

Print Date 07/14/2023

SECTION 1. IDENTIFICATION

Product name	:	EPOCAST® 1636 B US					
Manufacturer or supplier's details							
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	:	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					

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) Acute toxicity (Oral) : Category 4

	U
Acute toxicity (Inhalation)	: Category 4
Skin corrosion	: Category 1B
Serious eye damage	: Category 1
Skin sensitisation	: Category 1
Reproductive toxicity	: Category 1B
Short-term (acute) aquatic hazard	: Category 3
Long-term (chronic) aquatic hazard	: Category 3
GHS label elements Hazard pictograms	

: Danger

Signal word





HUNTSMAN

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Hazard statements : H30 H31 H31 H36 H41 Precautionary statements : Prev P20 P20 and P26 P26 P27 P27 P27 P27 P27 P27 P27 P27 P27 P27	Print Date 07/14/2023 92 + H332 Harmful if swallowed or if inhaled. 4 Causes severe skin burns and eye damage. 7 May cause an allergic skin reaction. 90 May damage fertility or the unborn child. 2 Harmful to aquatic life with long lasting effects. vention: 1 Obtain special instructions before use. 2 Do not handle until all safety precautions have been read understood. 1 Avoid breathing mist or vapours. 4 Wash skin thoroughly after handling. 0 Do not eat, drink or smoke when using this product.
Precautionary statements : Prev P20 P20 and P26 P26 P27 P27 P27 P27 P27 P27 P27 P27 P27 P28 face Res P30 CEN P30 all c P30 and CEN	 vention: 1 Obtain special instructions before use. 2 Do not handle until all safety precautions have been read understood. 1 Avoid breathing mist or vapours. 4 Wash skin thoroughly after handling. 0 Do not eat, drink or smoke when using this product.
P30 wate and CEN P30 atter P33 atter P36 Stor P40 Disj P50 disp	 1 Use only outdoors or in a well-ventilated area. 2 Contaminated work clothing must not be allowed out of workplace. 3 Avoid release to the environment. 0 Wear protective gloves/ protective clothing/ eye protection/e protection. ponse: 1 + P312 + P330 IF SWALLOWED: Call a POISON TER/ doctor if you feel unwell. Rinse mouth. 1 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT ice vomiting. 3 + P361 + P353 IF ON SKIN (or hair): Take off immediately ontaminated clothing. Rinse skin with water/ shower. 4 + P340 + P310 IF INHALED: Remove person to fresh air keep comfortable for breathing. Immediately call a POISON VTER/ doctor. 5 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with er for several minutes. Remove contact lenses, if present easy to do. Continue rinsing. Immediately call a POISON VTER/ doctor. 8 + P313 IF exposed or concerned: Get medical advice/ ntion. 3 + P313 If skin irritation or rash occurs: Get medical advice/ ntion. 3 Wash contaminated clothing before reuse. rage: 5 Store locked up. posal:

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture

: Mixture

Chemical nature : Amines

Hazardous components





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						Print D	Date 07/14/2023	
1	Chemical nam	e		CAS-No.		Concentratio	n (% w/w)	
1	trientine			112-24-3			30 - 50	
	1,2-Ethanediamine, N1,N1'-[1,7- heptanediylbis[(4,5-dihydro-1H-imidazole- 2,1-diyl)-2,1-ethanediyl]]bis-			N1,N1'-[1,7- lihydro-1H-imidazole- iyl]]bis-			10 - 20	
	 m-phenylenebis(methylamine) 1-methylimidazole modified aliphatic amine 2-(2-aminoethylamino)ethanol 2-piperazin-1-ylethylamine 3,6,9-triazaundecamethylenediamine 		ne)	1477-55-0)		10 - 20	
				616-47-7		1 - 5		
				Not Assig	ned		0.1 - 1	
:			nol	111-41-1			0.1 - 1	
:			rin-1-ylethylamine 140-31-8			0.1 - 1		
			112-57-2		0.1 - 1			
	Diethylenetriar	nine		111-40-0			0.1 - 1	
:	2,2,4(or 2,4,4)	-trimethylhex	ane-1,6-diamine	25513-64-	-8		0.1 - 1	

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. Consult a physician. 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	:	Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty. If on skin, rinse well with water. If on clothes, remove clothes.
In case of eye contact	:	Small amounts splashed into eyes can cause irreversible tissue damage and blindness. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Continue rinsing eyes during transport to hospital. Remove contact lenses. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.





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lf swa	allowed	:	Keep respiratory to Do NOT induce von Never give anythin If symptoms persin Take victim immer	ract clear. omiting. ng by mouth to an unconscious person. st, call a physician. diately to hospital.
Most important symptoms and effects, both acute and delayed		:	None known.	
Prote	ction of first-aiders	:	First Aid responde and use the recom If potential for exp personal protectiv Avoid inhalation, i No action shall be suitable training. It may be dangere mouth-to-mouth re	ers should pay attention to self-protection nmended protective clothing osure exists refer to Section 8 for specific e equipment. ngestion and contact with skin and eyes. taken involving any personal risk or without ous to the person providing aid to give esuscitation.
Notes	s to physician	:	Treat symptomation	cally.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical
Unsuitable extinguishing media	:	Exercise caution when using a high volume water jet as it may scatter and spread fire
Specific hazards during firefighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	No hazardous combustion products are known
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
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





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Pe pr er	ersonal precautions, otective equipment and mergency procedures	:	Use personal prot Refer to protective	Print Date 07/14/2023 ective equipment. e measures listed in sections 7 and 8.
Eı	nvironmental precautions	:	Prevent product fr Prevent further lea If the product cont respective authori	om entering drains. akage or spillage if safe to do so. aminates rivers and lakes or drains inform ties.
M co	ethods and materials for ontainment and cleaning up	:	Soak up with inert acid binder, univer Keep in suitable, o	absorbent material (e.g. sand, silica gel, rsal binder, sawdust). 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 :	Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitisation of susceptible persons. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product. Do not breathe vapours/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. To avoid spills during handling keep bottle on a metal tray. 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. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. 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.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters





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	Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
	m-phenylenebis(methylamine)	1477-55-0	С	0.018 ppm	ACGIH
F			С	0.1 mg/m3	NIOSH REL
			С	0.1 mg/m3	OSHA P0
	Diethylenetriamine	111-40-0	TWA	1 ppm	ACGIH
			TWA	1 ppm 4 mg/m3	NIOSH REL
			TWA	1 ppm 4 mg/m3	OSHA P0
	Personal protective equipme	nt			
	Respiratory protection	: In the case of approved filte	f vapour formati er.	ion use a respirator wi	th an
	Hand protection Material Break through time	: butyl-rubber : > 8 h			
	Material Material Break through time	 Solvent-resistant gloves (butyl-rubber) Nitrile rubber 10 - 480 min 			
	Remarks	 Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. 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 c Choose body concentration	lothing / protection acco n of the dangero	ording to the amount a ous substance at the w	and /ork place.
	Hygiene measures	: When using When using Wash hands	do not eat or dri do not smoke. before breaks a	nk. and at the end of work	day.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : amber





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	Odour	: amine-like	
	Odour Threshold	: No data is available on the product itself.	
	рН	: No data is available on the product itself.	
	Melting point/freezing point	: No data ava	ailable
	Boiling point/boiling range	: No information	ion available.
	Flash point	: > 244 °F / > Method: Pe	118 °C nsky-Martens closed cup
	Evaporation rate	: No data is a	available on the product itself.
	Flammability (solid, gas)	: No data is a	available on the product itself.
Flammability (liquids) : No data is available on the Upper explosion limit / Upper : No data is available on the flammability limit		: No data is a	available on the product itself.
		available on the product itself.	
	Lower explosion limit / Lower flammability limit	: No data is a	available on the product itself.
	Vapour pressure	: No data is a	available on the product itself.
	Relative vapour density	: No data is a	available on the product itself.
	Relative density	: 1	
	Density	: 1.07 g/cm3	(68 °F / 20 °C)
	Solubility(ies) Water solubility	: partly solub	le (68 °F / 20 °C)
	Solubility in other solvents	: No data is a	available on the product itself.
	Partition coefficient: n-	: No data is a	available on the product itself.
	Auto-ignition temperature	: No data is a	available on the product itself.
	Decomposition temperature	:>392 °F />	200 °C
	Self-Accelerating decomposition temperature (SADT)	: No data is a	available on the product itself.
	Viscosity Viscosity, dynamic	: ca. 1,000 m	Pa.s
	Explosive properties	: No data is a	available on the product itself.




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C	Dxidizing properties	: No data is availa	ble on the product itself.
Ν	Aolecular weight	: No data available	9
F	Particle size	: No data is availa	ble on the product itself.

SECTION 10. STABILITY AND REACTIVITY

:	No dangerous reaction known under conditions of normal use.
:	Stable under normal conditions.
:	No hazards to be specially mentioned.
:	None known.
:	None known.
:	No decomposition if stored and applied as directed.
:	ammonia, anhydrous Aldehydes
	Nitrogen oxides (NOx) carbon monoxide carbon dioxide Ketones

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity	
Product:	
Acute oral toxicity :	Acute toxicity estimate: 1,310 mg/kg Method: Calculation method
Acute inhalation toxicity :	Assessment: The substance/mixture is not toxic on inhalation as defined by dangerous goods regulations.
	Acute toxicity estimate: 4.31 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity :	Acute toxicity estimate: 2,478 mg/kg Method: Calculation method
Components:	
trientine:	
Acute oral toxicity :	LD50 (Rat, male and female): 1,716.2 mg/kg Method: OECD Test Guideline 401 Assessment: The component/mixture is moderately toxic after single ingestion.





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Ac	Acute dermal toxicity		:	: LD50 (Rabbit, male and female): 1,465.4 mg/kg Method: OECD Test Guideline 402 Assessment: The component/mixture is moderately toxic after single contact with skin.		
1,: et	2-Etha haneo	anediamine, N1,N1'- diyl]]bis-:	[1,7-	heptanediylbis[(4	5-dihydro-1H-imidazole-2,1-diyl)-2,1-	
Ac	cute o	ral toxicity	:	Assessment: The component/mixture is moderately toxic after single ingestion.		
Ac	cute in	halation toxicity	:	Assessment: The short term inhalati	component/mixture is moderately toxic after on.	
m	-phen	ylenebis(methylami	ne):			
Ac	cute o	ral toxicity	:	LD50 (Rat, male a Method: OECD Te	nd female): 930 mg/kg est Guideline 401	
Ac	cute in	halation toxicity	:	LC50 (Rat, male a Exposure time: 4 l Test atmosphere: Method: OECD Te GLP: yes	nd female): ca. 1.34 mg/l n dust/mist est Guideline 403	
				Assessment: Corr	osive to the respiratory tract.	
Ac	cute d	ermal toxicity	:	LD50 (Rat, male a Method: Other gui Symptoms: Necro Assessment: The toxicity	nd female): > 3,100 mg/kg delines sis, Erythema substance or mixture has no acute dermal	
1-	methy	vlimidazole:				
Ac	cute o	ral toxicity	:	LD50 (Rat, male a Method: OECD Te	nd female): ca. 1,144 mg/kg est Guideline 401	
Ac	cute in	halation toxicity	:	LC0 (Rat): 1.2 mg Exposure time: 8 Test atmosphere: Method: OECD Te Assessment: The inhalation toxicity	/l vapour est Guideline 403 substance or mixture has no acute	
Ac	cute d	ermal toxicity	:	LD50 (Rabbit, ma Method: OECD Te	e and female): 400 - 640 mg/kg est Guideline 402	
m	odifie	d aliphatic amine:				
Ac	cute o	ral toxicity	:	Assessment: The single ingestion.	component/mixture is moderately toxic after	
Ac	cute in	halation toxicity	:	Assessment: The short term inhalati	component/mixture is moderately toxic after on.	

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	2-(2-amin	oethvlamino)ethan	ol:		Print Date 07/14/2023		
	Acute ora	l toxicity	:	LD50 (Rat, male a Method: OECD Te GLP: no Assessment: The ingestion.	nd female): 2,150 mg/kg est Guideline 401 component/mixture is low toxic after single		
	Acute inha	alation toxicity	:	LC0 (Rat): 51.3 mg/m3 Exposure time: 8 h Test atmosphere: vapour Method: OECD Test Guideline 403 GLP: no Assessment: The substance or mixture has no acute inhalation toxicity			
	Acute der	mal toxicity	:	LD50 (Rat): > 2,00	00 mg/kg		
				LD50 (Rat, male a Method: OECD Te GLP: no Assessment: The toxicity	nd female): > 2,000 mg/kg est Guideline 402 substance or mixture has no acute dermal		
	2-piperaz	in-1-ylethylamine:					
	Acute ora	I toxicity	:	LD50 (Rabbit, mal Assessment: The single ingestion.	e): 2,097 mg/kg component/mixture is moderately toxic after		
	Acute der	mal toxicity	: LD50 (Rabbit, male): 866 n Assessment: The compone contact with skin.		e): 866 mg/kg component/mixture is toxic after single		
	3,6,9-triaz	zaundecamethylene	edia	mine:			
	Acute ora	I toxicity	:	LD50 (Rat, male): Method: Calculation Assessment: The ingestion.	3,221 mg/kg on method component/mixture is low toxic after single		
	Acute der	mal toxicity	:	LD50 (Rabbit, mal Method: OECD Te	e and female): 1,260 mg/kg est Guideline 402		
	Diethylen	etriamine:					
	Acute ora	I toxicity	:	LD50 (Rat, male): Assessment: The single ingestion.	1,553 mg/kg component/mixture is moderately toxic after		
	Acute inha	alation toxicity	: Acute toxicity estimate: 0.185 mg/l Test atmosphere: dust/mist Method: Expert judgement Assessment: The component/mixture is highly toxic after sho term inhalation.		nate: 0.185 mg/l dust/mist dgement component/mixture is highly toxic after short		



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	LC0 (Rat, male a Test atmosphere Method: OECD T GLP: yes Assessment: The term inhalation.	nd female): 0.07 mg/l dust/mist est Guideline 403 component/mixture is highly toxic after short
	LC100 (Rat, male Test atmosphere Method: OECD T GLP: yes Assessment: The term inhalation.	e and female): 0.3 mg/l dust/mist est Guideline 403 component/mixture is highly toxic after short
Acute dermal toxicity	: LD50 (Rabbit): 1, GLP: no	045 mg/kg
2.2.4(or 2.4.4)-trimethylhexan	e-1.6-diamine:	
Acute oral toxicity	: LD50 (Rat): 910 Method: OECD T	ng/kg est Guideline 401
Skin corrosion/irritation		
Components:		
trientine:		
Species	: reconstructed hu	man epidermis (RhE)
Assessment Method	 Causes burns. OECD Test Guide 	eline 435
Result	: Corrosive after 3	minutes to 1 hour of exposure
Species	: Rabbit	
Assessment	: Causes burns.	
Method	: OECD Test Guid	eline 404 minutes to 1 hour of exposure
Nesul	. Conosive alter 5	
1,2-Ethanediamine, N1,N1'-[1 ethanediyl]]bis-:	,7-heptanediylbis[(4	l,5-dihydro-1H-imidazole-2,1-diyl)-2,1-
Result	: Irritating to skin.	
m-phenylenebis(methylamine	e):	
Species	: Rat	
Assessment	: Causes burns.	
Method Result	: Directive 67/548/	EEC, Annex V, B.4.
Kesuk		
1-methylimidazole:		
Species	: Rabbit	- K
Method Result	: OECD Test Guid	eline 404 minutes to 1 hour of exposure
rtoourt		

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2-(2-aminoethylamino)ethanol:

Species	: Rabbit
Assessment	: Causes burns.
Method	: OECD Test Guideline 404
Result	: Corrosive after 3 minutes to 1 hour of exposure
GLP	: no

2-piperazin-1-ylethylamine:

Species	:	Rabbit
Assessment	:	Causes burns.
Result	:	Causes burns.

3,6,9-triazaundecamethylenediamine:

Species	: reconstructed human epidermis (RhE)
Assessment	: Causes burns.
Method	: OECD Test Guideline 435
Result	: Corrosive after 3 minutes to 1 hour of exposure
GLP	: yes

Diethylenetriamine:

Species	:	Rabbit
Assessment	:	Causes burns.
Result	:	Causes burns.
GLP	:	no

2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Species	:	Rabbit
Assessment	:	Causes severe burns.
Result	:	Corrosive after 3 minutes or less of exposure

Serious eye damage/eye irritation

Components:

trientine:Species: RabbitResult: Irreversible effects on the eyeAssessment: Risk of serious damage to eyes.Method: OECD Test Guideline 405

1,2-Ethanediamine, N1,N1'-[1,7-heptanediylbis[(4,5-dihydro-1H-imidazole-2,1-diyl)-2,1ethanediyl]]bis-:

Result

: Eye irritation

m-phenylenebis(methylamine):

Result	:	Risk of serious damage to eyes.
Assessment	:	Risk of serious damage to eyes.

1-methylimidazole:







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Specie	es	: F	Rabbit	
Result		: 1	rreversible eff	ects on the eye
Metho	d	: (DECD Test Gu	uideline 405
modif	ied aliphatic amine:			
Result	:	: 6	Eye irritation	
2-(2-a	minoethylamino)eth	anol:		
Specie	es	: F	Rabbit	
Result	:	: 1	rreversible eff	ects on the eye
Asses	sment	: (Corrosive	
Metho	d	: (DECD Test Gu	uideline 405
GLP		: r	סו	
2-pipe	erazin-1-ylethylamin	e:		
Specie	es	: F	Rabbit	
Result		: F	Risk of serious	damage to eyes.
Asses	sment	: F	Risk of serious	damage to eyes.
3,6,9-t	riazaundecamethyl	enedian	nine:	
Result		: F	Risk of serious	damage to eves.
Asses	sment	: F	Risk of serious	damage to eyes.
Diethy	/lenetriamine:			
Snecie	20	· F	Rabhit	
Result		· · (Corrosive	
	sment	. (Corrosive	
GLP		: r	10	
2.2.4(0	or 2.4.4)-trimethvlhe	exane-1.	6-diamine:	
Specie	29	· F	Rabbit	
Result		· (Corrosive	
Metho	d	: (DECD Test Gu	uideline 405
Respi	ratory or skin sensi	tisation		
Comp	onents:			
trienti	ne:			
Expos	ure routes	: 3	Skin	
Specie	es	: (Guinea pig	
Asses	sment	: F	Probability or e	vidence of skin sensitisation in humans
Metho	d	: (DECD Test Gu	uideline 406
–		: F	Probability or e	evidence of skin sensitisation in humans

Result : 1	May cause sensitisation by skin contact.
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	m-nho	nylenebis(methylar	nino).		Print Date 07/14/20
		ingletiepis(inetinglat	innej.	O . 1	
	Exposu	ire routes	:	Skin	
	Specie	S	:	Mouse	
	Assess	ment		Probability or e	evidence of low to moderate skin sensitisation
	Motheor	J			uidalina 120
	Pocult	1	:	DECD Test G	nudeline 429
	Result		•	roto in human	
	GLP			Ves	5
			-)	
	Assess	ment	:	Harmful if swa and eye dama May cause an	llowed or if inhaled., Causes severe skin burns ge., Corrosive to the respiratory tract. allergic skin reaction.
	modifi	ed aliphatic amine:			
	Rosult			May cause ser	peitiestion by skin contact
	Result		•	May cause sei	Islisation by skin contact.
	2-(2-an	ninoethylamino)eth	anol:		
	Test Tv	/pe	:	Local lymph no	ode assav (LLNA)
	Exposu	ire routes		Skin	
	Specie	S		Mouse	
	Assess	ment	:	Probability or e	evidence of skin sensitisation in humans
	Method	1	:	OFCD Test G	udeline 429
	Result	<i>A</i>	:	Probability or e	avidence of skin sensitisation in humans
			:	Probability of e	
	GLP			no	
	2-piper	razin-1-ylethylamin	e:		
	Test T	/De		Maximisation 7	Test
	Exposi	ire routes	:	Skin	
	Snecie	s	:	Guinea nia	
	Method	4	:	OFCD Test G	uideline 406
	Pocult	<i>A</i>	:	Probability or o	audenne 400
	Result		•	rate in humans	
	3,6,9-tr	riazaundecamethyle	enedia	mine:	
	Assess	sment	:	May cause ser	nsitisation by skin contact.
	Result		:	May cause ser	nsitisation by skin contact.
	Diothy	Ionotriamino:			
	Exposu	ire routes	:	Skin	
	Specie	S	:	Mouse	
	Assess	sment	:	Probability or e	evidence of low to moderate skin sensitisation
				rate in humans	S
	Method	ł	:	OECD Test G	uideline 429
	Result		:	Probability or e	evidence of low to moderate skin sensitisation
				rate in humans	3
	GLP		:	yes	
	Remar	ks	:	Causes sensit	isation.
	Evnoer	ire routes		Respiratory Tr	act
	Spacia		:	Mouse	
	Dooute	3	:	Noos not cours	o rospiratory consitiontion
	Result		•	Dues not caus	e respiratory sensilisation.



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2,2,4	(or 2,4,4)-trimethylho	exane-1,6-diamine:	
Expo	sure routes	: Skin	
Spec	ies	: Guinea pig	
Meth	od	: OECD Test (Guideline 406
Resu	llt	: The product	is a skin sensitiser, sub-category 1A.
Gern	n cell mutagenicity		
Com	ponents:		
trien	tine:		
Genc	otoxicity in vitro	: Test Type: re Test system: Metabolic ac Method: OEC Result: positi GLP: yes	everse mutation assay Salmonella tryphimurium and E. coli tivation: with and without metabolic activation CD Test Guideline 471 ive
		Test Type: M Test system: Metabolic ac Method: OE0 Result: nega	licronucleus test Human lymphocytes tivation: with and without metabolic activation CD Test Guideline 487 tive
Geno	otoxicity in vivo	: Test Type: In Species: Mor Cell type: Bo Application F Dose: 0 - 600 Method: OE0 Result: nega	n vivo micronucleus test use (male and female) ne marrow Route: Intraperitoneal injection O mg/kg CD Test Guideline 474 tive
m-ph	nenylenebis(methyla	mine):	
Gend	otoxicity in vitro	: Test Type: A Test system: Metabolic ac Method: OEO Result: nega GLP: yes	mes test Salmonella typhimurium tivation: with and without metabolic activation CD Test Guideline 471 tive
		Test Type: C Test system: Metabolic ac Method: OEC Result: nega GLP: yes	Phromosome aberration test in vitro Chinese hamster ovary cells tivation: with and without metabolic activation CD Test Guideline 473 tive
		Test Type: Ir Test system: Metabolic ac Method: OE0 Result: nega GLP: yes	n vitro mammalian cell gene mutation test mouse lymphoma cells tivation: with and without metabolic activation CD Test Guideline 476 tive





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Geno	toxicity in vivo	:	Test Type: In vivo Species: Mouse (Cell type: Bone m Application Route Exposure time: sii Dose: 750 mg/kg Method: OECD To Result: negative GLP: yes	Print Date 07/14/2023 o micronucleus test male and female) aarrow : Oral ngle dose body weight est Guideline 474
Germ Asses	cell mutagenicity - ssment	:	Tests on bacterial mutagenic effects effects.	l or mammalian cell cultures did not show ., Animal testing did not show any mutagenic
1-mo	hvlimidazole.			
Geno	toxicity in vitro	:	Test Type: Micror Test system: Chir Metabolic activatio Method: OECD To Result: negative	nucleus test nese hamster fibroblasts on: with and without metabolic activation est Guideline 487
			Test Type: Ames Test system: Saln Metabolic activatio Method: OECD To Result: negative	test nonella typhimurium on: with and without metabolic activation est Guideline 471
			Test Type: In vitro Test system: Chir Metabolic activatio Method: OECD To Result: negative	o mammalian cell gene mutation test nese hamster ovary cells on: with and without metabolic activation est Guideline 476
2-(2-a	minoethvlamino)ethan	ol:		
Geno	toxicity in vitro	:	Test Type: revers Test system: Saln Metabolic activation Method: OECD To Result: negative GLP: no	e mutation assay nonella typhimurium on: with and without metabolic activation est Guideline 471
			Test Type: In vitro Test system: Chir Metabolic activatio Method: OECD To Result: negative GLP: no	o mammalian cell gene mutation test nese hamster ovary cells on: with and without metabolic activation est Guideline 476
Geno	toxicity in vivo	:	Application Route Dose: 3000 mg/kg Result: negative	: Oral g
			Test Type: In vivo Species: Mouse (Cell type: Bone m	micronucleus test male and female) arrow

Genotoxicity in vitro

SAFETY DATA SHEET

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	Dose: 0; 500; 1000; 2000 mg/kg bw Method: OECD Test Guideline 474 Result: negative GLP: yes
	Test Type: in vivo assay Species: Drosophila melanogaster (vinegar fly) (male) Application Route: Oral Exposure time: 7 d Method: OECD Test Guideline 477 Result: negative
2-piperazin-1-ylethylamine:	
Genotoxicity in vitro	: Test Type: reverse mutation assay Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative
	Test Type: gene mutation test Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Result: negative
	Test Type: sister chromatid exchange assay Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Result: negative
	Test Type: unscheduled DNA synthesis assay Test system: rat hepatocytes Metabolic activation: negative Result: negative
	Test Type: gene mutation test Test system: mouse lymphoma cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 490 Result: negative GLP: yes
Genotoxicity in vivo	 Test Type: In vivo micronucleus test Species: Mouse (male and female) Application Route: Intraperitoneal injection Dose: 175 - 560 mg/kg Method: OECD Test Guideline 474 Result: negative

: Test Type: reverse mutation assay

Result: positive

Test system: Salmonella typhimurium

Method: OECD Test Guideline 471

Metabolic activation: with and without metabolic activation



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			Print Date 07/14/2023
		Test Type: siste Test system: Cl Metabolic activa Method: OECD Result: positive	er chromatid exchange assay ninese hamster ovary cells ation: with and without metabolic activation Test Guideline 479
		Test Type: gene Test system: Cl Metabolic activa Method: OECD Result: positive	e mutation test ninese hamster ovary cells ation: with and without metabolic activation Test Guideline 476
		Test Type: Micr Test system: He Metabolic activa Method: OECD Result: negative	onucleus test uman lymphocytes ation: with and without metabolic activation Test Guideline 487 e
Ger	notoxicity in vivo	: Test Type: In vi Species: Mouse Cell type: Bone Application Rou Dose: 185/370/ Method: OECD Result: negative Remarks: Inforr similar substanc	vo micronucleus test e (male and female) marrow te: Intraperitoneal injection 600 mg/kg Test Guideline 474 e nation given is based on data obtained from ces.
Die	thylenetriamine		
Ger	notoxicity in vitro	: Test Type: reve Test system: Sa Metabolic activa Method: OECD Result: negativa GLP: yes	rse mutation assay almonella tryphimurium and E. coli ation: with and without metabolic activation Test Guideline 471
		Test Type: Chro Test system: Cl Metabolic activa Result: negativa GLP: yes	pmosome aberration test in vitro ninese hamster ovary cells ation: without metabolic activation
		Test Type: gene Test system: Cl Metabolic activa Result: negative	e mutation test hinese hamster ovary cells ation: with and without metabolic activation e
		Test Type: gene Test system: ra Metabolic activa Result: negative	e mutation test t hepatocytes ation: with and without metabolic activation e
Ger	notoxicity in vivo	: Test Type: Trar assay Species: Mouse	sgenic rodent somatic cell gene mutation (male)



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Cell type: Bone marrow Application Route: Oral Exposure time: 5 and 28 days Dose: 10 mL/kg Method: OECD Test Guideline 488 Result: negative GLP: yes

Test Type: gene mutation test Species: Drosophila melanogaster (vinegar fly) (male) Exposure time: 22 and 24 hours Result: negative GLP: yes

Test Type: Micronucleus test Species: Mouse (male and female) Cell type: Bone marrow Application Route: Oral Dose: 85, 283 and 850 mg/kg bw Method: OECD Test Guideline 474 Result: negative GLP: yes

2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Genotoxicity in vitro :	Test Type: Ames test Test system: Salmonella typhimurium Concentration: 5000 ug/plate Metabolic activation: with and without metabolic activation Method: Directive 67/548/EEC, Annex, B.13/14 Result: negative
	Test Type: Chromosome aberration test in vitro Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473 Result: negative
	Test Type: In vitro mammalian cell gene mutation test Test system: Chinese hamster ovary cells Concentration: 2 mg/ml Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative
Genotoxicity in vivo :	Species: Chinese hamster (male and female) Cell type: Bone marrow Application Route: Oral Dose: 825 - 1000 mg/kg Method: OECD Test Guideline 474 Result: negative
	Test Type: In vivo micronucleus test Species: Mouse (male and female) Application Route: Oral Dose: 850 - 1000 mg/kg Method: OECD Test Guideline 474





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			Result: negative		Print Date 07/14/2023
Carc	inogenicity				
Com	ponents:				
trien	tine:				
Spec Appli NOA Meth Resu	ies cation Route EL od Ilt		Mouse, male Dermal >= 50 mg/kg bw/d OECD Test Guide negative	ay line 451	
Spec Appli Expc NOA Meth Resu	cation Route sure time EL od Ilt		Mouse, male Dermal 104 weeks >= 20 mg/kg bw/d OECD Test Guide negative	ay line 451	
Dietl	ylenetriamine:	:			
Spec Appli Dose Freq NOE Resu GLP	ties ication Route o uency of Treatm L It	ient	Mouse, male Dermal 56.3 mg/kg 3 days/week 56.3 mg/kg bw/da negative yes	у	
IARC	No ci ident	omponent of tified as prob	this product preser able, possible or co	nt at levels greater t nfirmed human car	han or equal to 0.1% is cinogen by IARC.
OSH	A No co on O	omponent of SHA's list of	this product preser regulated carcinog	nt at levels greater t ens.	han or equal to 0.1% is
NTP	No c ident	omponent of tified as a kno	this product preser	nt at levels greater t carcinogen by NTP.	han or equal to 0.1% is
Repr	oductive toxici	ity			
Com	ponents:				
trien	tine:				
Effec	ts on foetal lopment	:	Test Type: Pre-na Species: Rat Application Route Dose: 75/325/750 Duration of Single General Toxicity M Developmental To Method: OECD Te Result: No teratog	tal mg/kg bw/day Treatment: 10 d Aaternal: NOAEL: > oxicity: NOAEL: >= 7 ost Guideline 414 enic effects	= 750 mg/kg body weight 750 mg/kg body weight
			Test Type: Pre-na Species: Rabbit Application Route	tal Dermal	





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Version 2.1	Revision Date: 06/14/2023	SDS Numbe 4000010085	Pr:Date of last issue: 06/09/2022591Date of first issue: 11/08/2016		
		Dose: 5/ Duration General Develop Method: Result: 1	Print Date 07/14/2023 50/125 mg/kg bw/day of Single Treatment: 13 d Toxicity Maternal: NOAEL: 50 mg/kg body weight mental Toxicity: NOAEL: >= 125 mg/kg body weight OECD Test Guideline 414 No teratogenic effects		
m-pł	nenvlenebis(methvlan	nine):			
Effec	ts on fertility	: Test Typ Test Species Applicat Dose: 0, General General Method: Result: 1 develop GLP: ye	e: Reproduction / Developmental Toxicity Screening Rat, male and female ion Route: Oral 50, 150 and 450 mg/kg Toxicity - Parent: NOEL: 50 - 150 mg/kg body weight Toxicity F1: NOEL: 450 mg/kg body weight OECD Test Guideline 421 No effects on fertility and early embryonic ment were detected.		
Effec	ts on foetal lopment	: Test Typ Species Strain: S Applicat Dose: 0, Duration Frequen General Develop Method: Result: N develop	be: Pre-natal Rat, female prague-Dawley ion Route: Oral 30, 100, 300 mg/kg milligram per kilogram of Single Treatment: 15 d cy of Treatment: 1 daily Toxicity Maternal: NOAEL: 100 mg/kg body weight mental Toxicity: NOAEL: 300 mg/kg body weight OECD Test Guideline 414 No effects on fertility and early embryonic ment were detected.		
Repr Asse	oductive toxicity - ssment	: No evide or on de	ence of adverse effects on sexual function and fertility, velopment, based on animal experiments.		
1-me	ethylimidazole:				
Effec	ts on fertility	: Species Applicat Dose: 10 General General Method: Result: 1 develop	Rat, male and female on Route: Oral), 30, 90 milligram per kilogram Toxicity - Parent: NOAEL: 30 mg/kg body weight Toxicity F1: NOAEL: 90 mg/kg body weight OECD Test Guideline 422 No effects on fertility and early embryonic ment were detected.		
Effec deve	ets on foetal lopment	: Test Typ Species Applicat Dose: 10 General Method:	be: Pre-natal : Rat, female ion Route: Oral), 30, 90 milligram per kilogram Toxicity Maternal: NOAEL: 90 mg/kg body weight OECD Test Guideline 414		
Repr Asse	oductive toxicity -	: Some ev animal e	vidence of adverse effects on development, based on experiments.		

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2-(2-aminoethylamino)ethanol:

Effects on fertility	:	Test Type: Reproduction / Developmental Toxicity Screening Test Species: Rat, male and female Application Route: Oral Dose: 0, 50, 250, 1000 mg/kg bw/day milligram per kilogram General Toxicity - Parent: NOAEL: 250 mg/kg body weight General Toxicity F1: NOEL: 50 mg/kg body weight Method: OECD Test Guideline 421 Result: positive GLP: yes
Effects on foetal development	:	Species: Rat, male and female Application Route: Oral Dose: 0, 0.2, 1, 5, 50 mg/kg bw/day General Toxicity Maternal: NOAEL: 50 mg/kg body weight Developmental Toxicity: LOAEL: 0.2 mg/kg body weight Method: OECD Test Guideline 421 Result: Teratogenic effects GLP: yes
		Test Type: Pre-natal Species: Rat, female Application Route: Oral Dose: 0, 0.5, 2, 10, 50 mg/kg bw/da General Toxicity Maternal: NOAEL: 50 mg/kg body weight Developmental Toxicity: NOAEL: 50 mg/kg body weight Method: OECD Test Guideline 414 GLP: yes
Reproductive toxicity - Assessment	:	Clear evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments, May damage the unborn child. Suspected of damaging fertility.
2-piperazin-1-ylethylamine:		
Effects on fertility	:	Test Type: Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test Species: Rat, male and female Application Route: Oral Dose: 500/2000/8000 ppm Duration of Single Treatment: 28 d General Toxicity - Parent: NOAEC: 8,000 ppm General Toxicity F1: NOEL: 8,000 ppm Method: OECD Test Guideline 422
Effects on foetal development	:	Test Type: reproductive and developmental toxicity study Species: Rat, male and female Application Route: Oral General Toxicity Maternal: LOAEC: 8,000 ppm Developmental Toxicity: NOEL: 8,000 ppm Method: OECD Test Guideline 422

Test Type: Pre-natal



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		Species: Rat, fe Application Rou Duration of Sing General Toxicit Developmental	Print Date 07/14/2023 emale ute: Oral gle Treatment: 14 d y Maternal: NOAEL: 1,000 mg/kg body weight Toxicity: NOEL: 1.000 mg/kg body weight
		Method: OECD Test Type: Pre- Species: Rabbi Application Rou Duration of Sing General Toxicit Developmental Method: OECD	Test Guideline 414 •natal t, female ute: Oral gle Treatment: 23 d y Maternal: NOAEL: 75 mg/kg body weight Toxicity: NOAEL: 75 mg/kg body weight • Test Guideline 414
	Reproductive toxicity - Assessment	: Some evidence fertility, and/or o	of adverse effects on sexual function and on development, based on animal experiments.
	3,6,9-triazaundecamethyle	enediamine:	
	Effects on foetal development	: Test Type: Pre- Species: Rabbi Application Rou Dose: 5/50/125 Duration of Sing General Toxicit Developmental Method: OECD Result: No terat Remarks: Inforr similar substan	natal t, female ite: Dermal mg/kg bw/d gle Treatment: 13 d y Maternal: NOAEL: 50 mg/kg body weight Toxicity: NOAEL: >= 125 mg/kg body weight Test Guideline 414 togenic effects mation given is based on data obtained from ces.
		Test Type: Pre- Species: Rat, fe Application Rou Dose: 75/325/7 Duration of Sing General Toxicit Developmental Method: OECD Result: No terat Remarks: Inforr similar substan	natal emale ute: Oral 50 mg/kg bw/d gle Treatment: 10 d y Maternal: NOAEL: >= 750 mg/kg body weight Toxicity: NOAEL: >= 750 mg/kg body weight Test Guideline 414 togenic effects mation given is based on data obtained from ces.
		Test Type: Pre- Species: Rat, fe Application Rou Dose: 200/400/ Duration of Sing General Toxicit Developmental Method: OECD Result: No terat Remarks: Inforr similar substan	natal emale ute: Oral 800 mg/kg bw(d gle Treatment: 14 d y Maternal: NOEL: 200 mg/kg body weight Toxicity: NOAEL: >= 400 mg/kg body weight Test Guideline 414 togenic effects mation given is based on data obtained from ces.



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/ersion 2.1	Revision Date: 06/14/2023	SDS Number: 400001008591	Date of last issue: 06/09/2022 Date of first issue: 11/08/2016
Dieth	vlenetriamine:		Print Date 07/14/2023
Effect	s on fertility	: Test Type: Repr Test Species: Rat, m Application Rou Dose: 30/100/30 Frequency of Tr General Toxicity General Toxicity Method: OECD GLP: yes	roduction / Developmental Toxicity Screening ale and female te: Oral 00 mg/kg bw/day reatment: 7 days/week / - Parent: NOAEL: 100 mg/kg wet weight / F1: NOAEL: 30 mg/kg body weight Test Guideline 421
Effect	s on foetal opment	 Test Type: reprosent Species: Rat, m Application Rou General Toxicity Developmental Method: OECD Result: No adve GLP: yes Test Type: Pre-to Species: Rat, fe Application Rou Dose: 0/25/100/ Duration of Sing General Toxicity Developmental Method: OECD GLP: yes 	oductive and developmental toxicity study ale and female te: Oral / Maternal: NOAEL: 100 mg/kg body weight Toxicity: NOAEL: 30 mg/kg body weight Test Guideline 421 orse effects natal males te: Oral 250 milligram per kilogram gle Treatment: 14 d / Maternal: NOAEL: 100 mg/kg body weight Toxicity: NOEL: 100 mg/kg body weight Test Guideline 414
224(or 2 4 4)-trimethylhexa	ne-1 6-diamine:	
Effect	s on fertility	: Species: Rat, m Application Rou Dose: 10, 60, 12 Method: OECD Result: No effect development we	ale and female te: Oral 20 mg/kg bw/day Test Guideline 416 ets on fertility and early embryonic ere detected.
Effect devel	s on foetal opment	: Species: Rabbit Application Rou General Toxicity Result: No terat	, female te: Oral / Maternal: NOAEL: 50,000 ppm ogenic effects
STOT	- single exposure		
Comp	oonents:		
2-(2-a	iminoethylamino)ethan	ol:	
Targe Asses	et Organs ssment	 Respiratory Trac The substance of toxicant, single of irritation. 	ct or mixture is classified as specific target organ exposure, category 3 with respiratory tract





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E T A	Exposure routes Farget Organs Assessment	: Inhalation : Respiratory Trac : May cause respir	t atory irritation.
S	STOT - repeated exposure		
<u>c</u>	Components:		
2	-piperazin-1-ylethylamine:		
E T A	exposure routes Farget Organs Assessment	 Inhalation Respiratory Trac Causes damage exposure. 	t to organs through prolonged or repeated
R	Repeated dose toxicity		
<u>C</u>	Components:		
tı	rientine:		
S N A E N D M T R	Species IOAEL Application Route Exposure time Iumber of exposures Oose Aethod Farget Organs Remarks	 Rat, male and fet 350 mg/kg Oral 28 d 7 d 100/350/1000 mg OECD Test Guid Lungs Information given substances. 	male g/kg bw/day eline 407 n is based on data obtained from similar
S N A T R	Species IOAEL Application Route Farget Organs Remarks	 Dog, male and fe 125 mg/kg Oral Lungs Information giver substances. 	male is based on data obtained from similar
S A R R	Species IOAEL Application Route Aethod Remarks	 Dog, male and fe 50 mg/kg Oral Subchronic toxici Information giver substances. 	male ty i is based on data obtained from similar
S N A E D M T R	Species IOAEL Application Route Exposure time Dose Method Farget Organs Remarks	 Rat, male and fet 50 mg/kg Oral 26 weeks 50/175/600 mg/k OECD Test Guid Lungs Information given substances. 	male g bw/day eline 408 n is based on data obtained from similar





Version 2.1	Revision Date: 06/14/2023	SDS Number: 400001008591	Date of last issue: 06/09/2022 Date of first issue: 11/08/2016
NOAE Applic Expos Metho Rema	EL cation Route sure time od arks	: 92 mg/kg, 60 : Oral : 120/600/3000 : OECD Test 0 : Information g substances.	Print Date 07/14/2023 0 ppm O ppm Guideline 408 iven is based on data obtained from similar
m-ph	enylenebis(methylaı	nine):	
Speci NOEL Applic Expos Numb Dose Metho GLP	es cation Route sure time per of exposures	 Rat, male and 150 mg/kg oral (gavage) 28 d 7 days/week 0, 10, 40, 150 OECD Test 0 yes 	d female)) and 600 mg/kg/d Guideline 407
Speci NOEC Applic Expos Numb Dose Metho GLP Targe	es C cation Route sure time ber of exposures od ot Organs	 Rat, male and 0.6 mg/m3 Inhalation 13 weeks 6 h 5 days/week 0, 0.64, 5.1, 3 OECD Test 0 yes Lungs 	d female 31 mg/m3 Guideline 413
Repea Asses	ated dose toxicity - ssment	: Harmful if sw and eye dam No adverse e	allowed or if inhaled., Causes severe skin burns age., Corrosive to the respiratory tract. affect has been observed in chronic toxicity tests.
1-met	thylimidazole:		
Speci NOAE Applic Dose Metho	es EL cation Route od	: Rat, male and : 90 mg/kg : oral (gavage) : 10,30,90 mg/ : OECD Test 0	d female / kg bw/day Guideline 408
2-(2-a	minoethylamino)eth	anol:	
Speci NOAE Applic Expos Numb Dose Metho GLP	es EL cation Route sure time per of exposures od	 Rat, male and > 1000 mg/kg Skin contact 28 d daily 0, 100, 300, 7 OECD Test C yes 	d female g/d 1000 mg/kg bw/d Guideline 410
Speci NOEL Applic Expos Dose Metho	es - cation Route sure time od	: Rat, male and : 60 mg/kg/d : oral (gavage) : 28 d : 0, 60; 250; 10 : OECD Test 0	d female 000 mg/kg bw/d Guideline 407





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	GLP		: yes	Print Date 07/14/2023				
			,					
	2-pipe	razin-1-ylethylamin	e:					
	Specie	es .	: Rat, male an	d female				
	Applie	L ation Bouto	: 152 mg/kg/d	water				
	Expos	ure time	· 28 d	water)				
	Metho	d	: OECD Test (Guideline 422				
	Specie	es	: Rat, male an	d female				
	NOAE	L	: > 1000 mg/kg	g/d				
	Applica	ation Route	: Dermal					
	Expos	ure time	: 290 : 6b/d 5d/w					
	Metho	d	: OECD Test (Guideline 410				
	Specie	es	: Rat, male an	d female				
	NOEC		: 0.2 mg/m3					
	Applica	ation Route	: Inhalation					
	Expos	ure time	: 90 a : 6b/d 5d/w					
	Metho	d	: OECD Test (Guideline 413				
	Target	Organs	: Respiratory 1	ract				
	Asses	sment	: The substand	e or mixture is classified as specific target organ				
			toxicant, repe	eated exposure, category 1.				
	Specie	es	: Rat, male an	d female				
	NOEC		: 53.3 mg/m3					
	Applica	ation Route	: Inhalation					
	Expos	ure time	: 90 a : 6b/d 5d/w	: 90 0 : 6b/d 5d/w				
	Metho	d	: OECD Test (Guideline 413				
	3,6,9-t	riazaundecamethyle	enediamine:					
	Specie	es I	: Rat, male and	d female				
		L ation Route	· Oral					
	Expos	ure time	: 28 d					
	Dose		: 100/350/1200) mg/kg bw/day				
	Metho	d	: OECD Test 0	Guideline 407				
	Target	Organs	: Lungs					
	Remai	rks	: Information g substances.	iven is based on data obtained from similar				
	Specie	es	: Rat, female					
	NOAE	L	: 50 mg/kg					
	Applica	ation Route	: Oral					
	Expos	ure time	: 90 d	<i>a</i> . <i>i</i> .				
	Dose	-1	: 50/175/600 n	ng/kg bw/d				
	Metho	a Organa	: UECD lest (Suideline 408				
	Remai	. Organs rks	. LUNYS	iven is based on data obtained from similar				
	Toma		substances.					
	Specie	es	: Dog, male ar	d female				





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NOA	EL	: 125 mg/kg	Print Date 07/14/2023				
Appli	cation Route	: Oral					
Expo	sure time	: 28 d					
Rema	arks	 Lungs Information given is based on data obtained from similar substances. 					
Spec	ies El	: Rat, male and	female				
Annli	cation Route	· Oral					
Expo	sure time	: 4 weeks					
Num	ber of exposures	: daily					
Dose) 	: 100/350/1200	mg/kg bw/d				
Rem	00 arks	: OECD Test G	UIDEIINE 408 (en is based on data obtained from similar				
Kenne	ains	substances.					
Spec NOA	ies Fl	: Rat, male and	female m				
Appli	cation Route	: oral (drinking v	vater)				
Expo	sure time	: 92 days	,				
Dose		: 120/600/3000	ppm				
Meth	od	: OECD Test G	uideline 408				
Rema	arks	substances.	en is based on data obtained from similar				
Spec	ies	: Mouse, male a	and female				
NOA Appli	EL cation Pouto	: 600 ppm : oral (drinking)	water)				
Ехро	sure time	: 92 davs	valer)				
Dose))	: 120/600/3000	ppm				
Meth	od	: OECD Test G	uideline 408				
Rema	arks	: Information giv substances.	ven is based on data obtained from similar				
Spec	ies	: Rabbit, male a	ind female				
NOE	L cation Pouto	: >= 200 mg/kg					
Ехро	sure time	: 20 days 6 h					
Numl	ber of exposures	: 5 days/week					
Dose		: 50/100/200 mg	g/kg bw/day				
Meth	od	: OECD Test G	uideline 410				
Dieth	ylenetriamine:						
Spec	ies	: Rat, male and	female				
	EL =1	: 70 - 80 mg/kg : 530 - 620 mg/l					
Annli	-∟ cation Route	: oral (feed)	<u>у</u> 9				
Expo	sure time	: 90 days					
Num	ber of exposures	: 7 days/week					
Dose		: 1000, 7500, or	15000 ppm				
Meth GLP	00	: OECD Test Gi : yes	uideline 451				
Spec	ies	: Rat, male and	female				
NOE	С	: 0.55 mg/l					





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Vers 2.1	sion	Revision Date: 06/14/2023	SDS Number: 400001008591	Date of last issue: 06/09/2022 Date of first issue: 11/08/2016
	Applica Exposu Numbe Dose Species NOAEL Applica Numbe Dose	ation Route are time for of exposures s - tion Route for of exposures	 inhalation (vapore) 15 days 6 h 7 days/week 0/130 ppm Rat, male and feeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeee	Print Date 07/14/202 emale) mg/cc solutio
	2.2.4(o	r 2.4.4)-trimethylhex	ane-1.6-diamine:	
	Species NOAEL Applica Exposu Numbe Dose Target Species LOAEL Applica Exposu Numbe Dose Target Aspira No data	r 2, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4,	 Rat, male and fe 10 mg/kg bw/da Ingestion 13 Weeks Daily 10, 60, 180mg/k Liver Rat, male and fe 60 mg/kg bw/da Ingestion 13 Weeks Daily 10, 60, 180mg/k Liver 	emale vy kg bw emale vy kg bw
	Experie	ence with human ex	posure	
	No data Toxico No data No data Furthe No data	a available logy, Metabolism, D a available ogical effects a available r information a available	istribution	
SEC	CTION 1	2. ECOLOGICAL INF	ORMATION	
	Ecotox <u>Compo</u> trientir	kicity onents: ne:		

Toxicity to fish : LC50 (Poecilia reticulata (guppy)): 570 mg/l Exposure time: 96 h Test Type: semi-static test Test substance: Fresh water Method: Directive 67/548/EEC, Annex V, C.1.





Versi 2.1	on	Revision Date: 06/14/2023	SD 40	S Number: 0001008591	Date of last issue: 06/09/2022 Date of first issue: 11/08/2016
				LC50 (Leuciscus i Exposure time: 96	Print Date 07/14/2023 idus (Golden orfe)): 200 - 500 mg/l 3 h
				LC50 (Pimephales End point: mortali Exposure time: 96 Test Type: static t Test substance: F Method: Fish Acu	s promelas (fathead minnow)): 330 mg/l ty 5 h est fresh water te Toxicity Test
Ē	Foxicity aquatic	to daphnia and other invertebrates	:	EC50 (Daphnia m End point: Immob Exposure time: 48 Test Type: static t Test substance: F Method: Directive	agna (Water flea)): 31.1 mg/l ilization 3 h rest resh water 67/548/EEC, Annex V, C.2.
ţ	Foxicity plants	v to algae/aquatic	:	ErC50 (Selenastru Exposure time: 72 Test Type: semi-s Test substance: F Method: OECD Te	um capricornutum (green algae)): 20mg/l 2 h static test fresh water est Guideline 201
				EC10 (Selenastru Exposure time: 72 Test Type: semi-s Test substance: F Method: OECD Te	m capricornutum (green algae)): 1.34 mg/l 2 h static test fresh water est Guideline 201
: (Toxicity aquatic Chroni	to daphnia and other invertebrates c toxicity)	:	EC10 (Daphnia m Exposure time: 21 Test Type: semi-s Test substance: F Method: OECD Te	agna (Water flea)): 1.9 mg/l d static test fresh water est Guideline 202
Ţ	Foxicity	to microorganisms	:	NOEC (Bacteria): Exposure time: 28 Method: OECD Te	>= 100 mg/l 3 d est Guideline 216
				EC50 (Bacteria): Exposure time: 28 Method: OECD Te	> 100 mg/l 3 h est Guideline 216
				EC50 (Bacteria): Exposure time: 2 Test Type: static t Test substance: F	15.7 mg/l h rest resh water
				NOEC (Bacteria): Exposure time: 2 Test Type: static t Test substance: F	1.3 mg/l h rest resh water
	Foxicity organis	v to soil dwelling ms	:	NOEC (Eisenia fe Exposure time: 56 Method: OECD Te	tida (earthworms)): ca. 62.5 mg/kg 5 d est Guideline 222





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				Print Date 07/14/2023	
			EC50 (Eisenia feti Exposure time: 56 Method: OECD Te	da (earthworms)): > 1,000 mg/kg d est Guideline 222	
Ecot	oxicology Assessment				
Chro	nic aquatic toxicity	:	Harmful to aquatic	life with long lasting effects.	
m-ph	enylenebis(methylamii	n e) :			
Toxic	ity to fish	:	LC50 (Oryzias lati End point: mortalit Exposure time: 96 Test Type: semi-s Test substance: F Method: OECD Te GLP: yes	pes (Orange-red killifish)): 87.6 mg/l y h tatic test resh water est Guideline 203	
Toxic aqua	ity to daphnia and other tic invertebrates	:	EC50 (Daphnia m End point: Immobil Exposure time: 48 Test Type: static to Analytical monitori Test substance: F Method: OECD Te GLP: yes	agna (Water flea)): 15.2 mg/l lization h est ing: yes resh water est Guideline 202	
Toxic plants	ity to algae/aquatic s	:	ErC50 (Selenastru Exposure time: 72 Test Type: static to Analytical monitori Test substance: F Method: OECD Te GLP: yes	um capricornutum (green algae)): 32.1 mg/l h est ing: yes resh water est Guideline 201	
			NOEC (Selenastru Exposure time: 72 Test Type: static to Analytical monitori Test substance: F Method: OECD Te GLP: yes	um capricornutum (green algae)): 10.5 mg/l h est ing: yes resh water est Guideline 201	
Toxic aqua (Chrc	ity to daphnia and other tic invertebrates onic toxicity)	:	NOEC (Daphnia n Exposure time: 21 Test Type: semi-s Analytical monitori Test substance: F Method: OECD Te GLP: yes	nagna (Water flea)): 4.7 mg/l d tatic test ing: yes resh water est Guideline 211	
Toxic	ity to microorganisms	:	EC50 (activated s Exposure time: 0.9 Test Type: static to Analytical monitor Test substance: F	ludge): > 1,000 mg/l 5 h est ing: no resh water	





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				Method: OECD T GLP: yes	Print Date 07/14/2023 est Guideline 209
	1-moth	vlimidazole:			
	Toxicity	to fish	:	LC50 (Leuciscus Exposure time: 9 Test Type: static Test substance: I Method: DIN 384	idus (Golden orfe)): > 100 - < 215 mg/l 6 h test Fresh water 12
	Toxicity aquatic	to daphnia and other invertebrates	:	EC50 (Daphnia n Exposure time: 4 Test Type: static Test substance: I Method: Directive	nagna (Water flea)): 267.9 mg/l 8 h test Fresh water 9 67/548/EEC, Annex V, C.2.
	Toxicity plants	to algae/aquatic	:	EC50 (Desmodes Exposure time: 7 Test Type: static Test substance: I Method: OECD T	smus subspicatus (green algae)): 202.5 mg/l 2 h test Fresh water rest Guideline 201
	Toxicity	to microorganisms	:	EC50 (activated s Exposure time: 7 Test Type: static Test substance: I Method: DIN 38 4	sludge): 1,050 mg/l h test Fresh water 12 Part 8
	2-(2-an	ninoethylamino)ethan	ol:		
	Toxicity	r to fish	:	LC50 (Pimephale Exposure time: 9 Test substance: I Method: Calculat GLP: no	es promelas (fathead minnow)): 640 mg/l 6 h Fresh water ion method
	Toxicity aquatic	r to daphnia and other invertebrates	:	EC50: 140 mg/l Exposure time: 4	8 h
				EC50 (Daphnia n End point: Immot Exposure time: 4 Test Type: static Test substance: I Method: OECD T GLP: yes	nagna (Water flea)): 22 mg/l bilization 8 h test Fresh water rest Guideline 202
				NOEC (Daphnia End point: Immol Exposure time: 4 Test Type: static Test substance: I Method: OECD T GLP: yes	magna (Water flea)): 10 mg/l bilization 8 h test Fresh water rest Guideline 202
	Toxicity	to algae/aquatic	:	EC50 (Desmode	smus subspicatus (green algae)): 358 mg/l





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Version 2.1	Revision Date: 06/14/2023	SDS 400	S Number: 001008591	Date of last issue: 06/09/2022 Date of first issue: 11/08/2016		
pla	nts	-	Exposure time: 72 Test Type: static t Analytical monitor Test substance: F Method: DIN 3841 GLP: no	Print Date 07/14/2023 est ing: no fresh water 2		
			ErC10 (Desmodes Exposure time: 72 Test Type: static t Analytical monitor Test substance: F Method: DIN 3841 GLP: no	smus subspicatus (green algae)): 156 mg/l 2 h est ing: no fresh water 12		
То	kicity to microorganisms	:	EC50 (activated s Exposure time: 0.4 Test Type: static t Analytical monitor Test substance: F Method: ISO Meth GLP: no	ludge): > 1,003 mg/l 5 h est ing: no iresh water nod, other		
			EC50 (Bacteria): Exposure time: 17 Test Type: static t Analytical monitor Test substance: F Method: DIN 3841 GLP: no	134.8 mg/l 7 h est ing: no fresh water 12		
2-р	iperazin-1-ylethylamine:					
То	kicity to fish	:	LC50 (Pimephales End point: mortali Exposure time: 96 Test Type: static t Test substance: F	s promelas (fathead minnow)): 2,190 mg/l ty 5 h est resh water		
To> aqu	kicity to daphnia and other Jatic invertebrates	:	EC50 (Daphnia m End point: Immob Exposure time: 48 Test Type: static t Test substance: F Method: OECD Te Remarks: Harmfu adverse effects in	agna (Water flea)): 58 mg/l ilization 3 h est resh water est Guideline 202 I to aquatic organisms, may cause long-term the aquatic environment.		
To» pla	kicity to algae/aquatic nts	:	EC50 (Selenastru mg/l Exposure time: 72 Test substance: F Method: OECD Te	m capricornutum (green algae)): > 1,000 2 h Tresh water est Guideline 201		
То	kicity to microorganisms	:	EC50 (Bacteria): : mg/kg Exposure time: 28	> 100 mg/l 3 d		





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				Method: OECD Te	est Guideline 216	Print Date 07/14/2023
				EC50 (activated s Exposure time: 2 Test Type: static t Test substance: F Method: ISO Meth	ludge): 511 mg/l h est resh water nod, other	
	Toxicity organis	/ to soil dwelling sms	:	LC50 (Eisenia feti Exposure time: 56 Method: OECD Te	da (earthworms)): 712 3 d est Guideline 222	2 mg/kg
				NOEC (Eisenia fe Exposure time: 56 Method: OECD To	tida (earthworms)): 50 5 d əst Guideline 222	00 mg/kg
	3,6,9-tr	iazaundecamethylen	edia	amine:		
	Toxicity	/ to fish	:	LC50 (Poecilia ref End point: mortali Exposure time: 96 Test Type: semi-s Test substance: F Method: Directive GLP: yes	iculata (guppy)): 420 r ty h tatic test resh water 67/548/EEC, Annex \	mg/l /, C.1.
	Toxicity aquatic	/ to daphnia and other invertebrates	:	EC50 (Daphnia m End point: Immob Exposure time: 48 Test Type: static t Test substance: F Method: Tested a 67/548/EEC.	agna (Water flea)): 24 ilization h est resh water ccording to Annex V o	I.1 mg/l f Directive
	Toxicity plants	/ to algae/aquatic	:	ErC50 (Selenastru Exposure time: 72 Test Type: static t Test substance: F Method: OECD Te	um capricornutum (gre ? h est resh water est Guideline 201	een algae)): 6.8 mg/l
				NOEC (Selenastri Exposure time: 72 Test Type: static t Test substance: F Method: OECD Te	um capricornutum (gre ? h est resh water est Guideline 201	een algae)): 0.5 mg/l
	Toxicity aquatic (Chroni	y to daphnia and other invertebrates ic toxicity)	:	EC10 (Daphnia m Exposure time: 21 Test substance: F Method: OECD To Remarks: Informa similar substance:	agna (Water flea)): 1.9 d resh water est Guideline 202 tion given is based on s.	9 mg/l a data obtained from
	Toxicity	/ to microorganisms	:	EC50 (Bacteria): 9 Exposure time: 2 Test Type: static t Test substance: F	97.3 mg/l h est resh water	





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				Print Date 07/14/2023		
			NOEC: 500 mg/l Exposure time: 28 Method: OECD Te	d est Guideline 216		
Toxic orga	city to soil dwelling nisms	:	NOEC (Eisenia fe Exposure time: 55 Method: OECD Te	tida (earthworms)): 125 mg/kg 5 d est Guideline 222		
Dietl	hylenetriamine:					
Τοχία	city to fish	:	LC50 (Poecilia ret End point: mortalii Exposure time: 96 Test Type: semi-s Analytical monitor Test substance: F Method: Directive GLP: yes	iculata (guppy)): 430 mg/l ty 5 h tatic test ing: no fresh water 67/548/EEC, Annex V, C.1.		
Toxid aqua	city to daphnia and other atic invertebrates	:	EC50 (Daphnia m Exposure time: 48 Test Type: static t Test substance: F Method: Regulatic EC50 (Daphnia m Exposure time: 48 Test Type: static t	agna (Water flea)): 64.6 mg/l est fresh water on (EC) No. 440/2008, Annex, C.2 agna (Water flea)): 16 mg/l 8 h est		
			Test substance: F Method: DIN 3841	resh water 2		
Toxic plant	city to algae/aquatic ts	:	EbC50 (Selenastr mg/l Exposure time: 72 Test Type: static t Analytical monitor Test substance: F Method: OECD Te GLP: yes	um capricornutum (green algae)): 1,164 ? h est ing: no resh water est Guideline 201		
Toxic toxic	city to fish (Chronic ity)	:	NOEC (Gasterost mg/l Exposure time: 28 Test Type: semi-s Analytical monitor Test substance: F Method: OECD Te GLP: yes	eus aculeatus (threespine stickleback)): 10 3 d itatic test ing: no iresh water est Guideline 210		
Toxic aqua (Chro	city to daphnia and other atic invertebrates onic toxicity)	:	NOEC (Daphnia m Exposure time: 21 Test Type: semi-s Analytical monitor Test substance: F Method: Directive GLP: yes	nagna (Water flea)): 5.6 mg/l d static test ing: no resh water 67/548/EEC, Annex V, C.20		





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				Print Date 07/14/2023
	Toxicity to microorganisms	:	EC50 (Bacteria): 3 Exposure time: 3 Test Type: static t Test substance: F GLP: yes	32.7 mg/l h est resh water
			NOEC (Bacteria): Exposure time: 3 Test Type: static t Test substance: F GLP: yes	6 mg/l h est resh water
	Toxicity to soil dwelling organisms	:	EC50 (Eisenia fet Exposure time: 56 Method: OECD Te GLP: yes	ida (earthworms)): > 1,000 mg/kg 5 d est Guideline 222
	Ecotoxicology Assessme	nt		
	Acute aquatic toxicity	:	This product has	no known ecotoxicological effects.
	2,2,4(or 2,4,4)-trimethylhe	xane-	1,6-diamine:	
	Toxicity to fish	:	LC50 (Leuciscus Exposure time: 48 Method: DIN 3847	idus (Golden orfe)): 174 mg/l } h I2
	Toxicity to daphnia and othe aquatic invertebrates	er :	EC50 (Daphnia m Exposure time: 24 Method: DIN 384	agna (Water flea)): 31.5 mg/l l h l2
	Toxicity to algae/aquatic plants	:	ErC50 (Pseudokir Exposure time: 72 Method: OECD Te	chneriella subcapitata (algae)): 43.5 mg/l 2 h est Guideline 201
			EC50 (Pseudokiro Exposure time: 72 Method: OECD Te	chneriella subcapitata (algae)): 37.1 mg/l 2 h est Guideline 201
			NOEC (Pseudokin Exposure time: 72 Method: OECD Te	rchneriella subcapitata (algae)): 16 mg/l 2 h est Guideline 201
	Toxicity to fish (Chronic toxicity)	:	NOEC (Brachyda Exposure time: 30 Method: OECD To	nio rerio (zebrafish)): 10.9 mg/l) d est Guideline 210
			Lowest Observed (zebrafish)): 10.9 Exposure time: 30 Method: OECD To	Effect Concentration (Brachydanio rerio mg/l) d est Guideline 210
	Toxicity to daphnia and othe aquatic invertebrates (Chronic toxicity)	er :	NOEC (Daphnia r Exposure time: 21 Method: OECD Te	nagna (Water flea)): 1.02 mg/l I d est Guideline 211





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				Lowest Observed (Water flea)): 1.02 Exposure time: 2 Method: OECD T	Print Date 07/14/2023 Effect Concentration (Daphnia magna 2 mg/l 1 d est Guideline 211
	Toxicity	y to microorganisms	:	IC50 (Pseudomo Exposure time: 1	nas putida): 89 mg/l 7 h
	Toxicity organis	y to soil dwelling sms	:	NOEC (Eisenia fe Exposure time: 50 Method: OECD T	etida (earthworms)): >= 1,000 mg/kg 5 d est Guideline 222
				EC50 (Eisenia fet Exposure time: 50 Method: OECD T	ida (earthworms)): >= 1,000 mg/kg 5 d est Guideline 222
	Persis	tence and degradabi	lity		
	Compo	onents:	•		
	trientir	ne:			
	Biodeg	radability	:	Inoculum: activate Result: Not readil Biodegradation: Exposure time: 10 Method: OECD T Test substance: F	ed sludge y biodegradable. 0 % 62 d est Guideline 301D Fresh water
				aerobic Inoculum: activate Dissolved organic Result: Not inhere Biodegradation: 3 Exposure time: 8 Method: OECD T Test substance: F	ed sludge c carbon (DOC) ently biodegradable. 20 % 4 d est Guideline 302A Fresh water
	m-phe	nylenebis(methylami	ine):	:	
	Biodeg	ıradability	:	aerobic Inoculum: activate Concentration: 14 Result: Not readil Biodegradation: Exposure time: 26 Method: OECD T Test substance: F GLP: yes	ed sludge, non-adapted I.2 mg/l y biodegradable. 49 % 3 d est Guideline 301B Fresh water
	1-meth	ylimidazole:			
	Biodeg	radability	:	aerobic Inoculum: activate Concentration: 10 Result: Not readil Biodegradation: Exposure time: 28	ed sludge 00 mg/l y biodegradable. 0 - 10 % 3 d





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		Method: OECD	Print D Test Guideline 301F	ate 07/14/2023
		aerobic Inoculum: activ Concentration: Result: Inheren Biodegradation Exposure time: Method: ISO M	ated sludge 40 mg/l tly biodegradable. : 79 % 60 d ethod, other	
2-(2	-aminoethylamino)ethai	nol:		
Bioc	legradability	: aerobic Inoculum: activ Result: Readily Biodegradation Exposure time: Method: OECD GLP: yes	ated sludge biodegradable. : > 60 % 28 d Test Guideline 301F	
Bioc Dem	hemical Oxygen nand (BOD)	: 66.3 - 109.6 % Incubation time Method: OECD	: 28 d Test Guideline 301F	
Che (CO	mical Oxygen Demand D)	: 1090 mgO2/g		
2-рі	perazin-1-vlethylamine:			
Bioc	legradability	: aerobic Inoculum: activ Result: Not rea Biodegradation Exposure time: Method: OECD	ated sludge dily biodegradable. : 0 % 28 d Test Guideline 301F	
Bioc Dem	hemical Oxygen nand (BOD)	: 5 mg/l Incubation time	: 5 d	
Che (CO	mical Oxygen Demand D)	: 560 mg/l		
Pho	todegradation	: Test Type: Air Degradation (d	rect photolysis): 50 %	
3,6,9	9-triazaundecamethylen	ediamine:		
Bioc	legradability	: aerobic Inoculum: activ Result: Not inho Biodegradation Exposure time: Method: Inhere Test substance	ated sludge erently biodegradable. : 17 % 84 d nt Biodegradability: Modified SC/ : Fresh water	AS Test
		aerobic Inoculum: activ	ated sludge	





EPC	EPOCAST® 1636 B US						
Versi 2.1	on	Revision Date: 06/14/2023	SI 40	DS Number: 00001008591	Date of last issue: 0 Date of first issue: 1	6/09/2022 1/08/2016	
				Result: Not readil Biodegradation: (Exposure time: 16 Method: OECD T Test substance: F	y biodegradable.) % 52 d est Guideline 301D Fresh water	Print Date 07/14/2023	
ſ	Diethvl	enetriamine:					
E	Biodegi	radability	:	aerobic Inoculum: activate Result: Readily bi Biodegradation: 8 Exposure time: 2 ^o Method: OECD T Test substance: F	ed sludge, non-adapte odegradable. 37 % I d est Guideline 301D Fresh water	ed	
F	Photod	egradation	:	Test Type: Air Rate constant: 50 Degradation (dire	0000 ct photolysis): 50 %		
2	2,2,4(o	r 2,4,4)-trimethylhex	ane-	1,6-diamine:			
E	Biodegi	radability	:	Inoculum: activate Concentration: 11 Result: Not readil Biodegradation: Exposure time: 28	ed sludge .4 mg/l y biodegradable. 7 % 3 d		
E	Bioacc	umulative potential					
<u> </u>	rientin						
F	Partition octanol	n coefficient: n- /water	:	log Pow: -2.08 - 2 Method: QSAR	.90 (68 °F / 20 °C)		
r	m-pher	nylenebis(methylam	ine):				
F	Partition octanol	n coefficient: n- /water	:	log Pow: 0.18 (77 pH: 10.3 - 10.4 Method: OECD T GLP: yes	°F / 25 °C) est Guideline 107		
1	1-meth	ylimidazole:					
F	Partitioi octanol	n coefficient: n- /water	:	log Pow: -0.19 (7 pH: 9.25 - 9.85 Method: OECD T	7 °F / 25 °C) est Guideline 107		
2	2-(2-an	ninoethylamino)etha	nol:				
E	Bioaccu	umulation	:	Species: Cyprinus Bioconcentration Remarks: Does n	s carpio (Carp) factor (BCF): 2.1 - 3.7 ot bioaccumulate.	7	
F	Partition octanol	n coefficient: n- /water	:	log Pow: -1.46 (7 pH: 10.6 - 11 Method: OECD T	7 °F / 25 °C) est Guideline 107		





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				GLP: no		Print Date 07/14/2023
	2-piper	azin-1-ylethylamine:				
	Bioaccu	umulation	:	Species: Fish Remarks: Does n	ot bioaccumulate.	
	Partition octanol	n coefficient: n- /water	:	log Pow: -1.48 (68	3 °F / 20 °C)	
	3,6,9-tr	iazaundecamethylen	edia	amine:		
	Partition octanol	n coefficient: n- /water	:	log Pow: -2.6 (68	°F / 20 °C)	
	Diethyl	enetriamine:				
	Bioaccu	umulation	:	Species: Cyprinus Bioconcentration Exposure time: 42 Concentration: 0. Test substance: F Method: OECD To Remarks: Bioacco	s carpio (Carp) factor (BCF): 0.3 - 6.3 2 d 2 - 2 mg/l fresh water est Guideline 305C umulation is unlikely.	
	Partition octanol	n coefficient: n- /water	:	log Pow: -1.58 (68 pH: > 12 Method: Calculati GLP: no	3 °F / 20 °C) on method	
				log Pow: -5.58 (68 pH: 7 Method: Calculati GLP: no	3 °F / 20 °C) on method	
	2.2.4(0	r 2.4.4)-trimethvlhexa	ne-	1.6-diamine:		
	Partition octanol	n coefficient: n- /water	:	log Pow: -0.3 (77 Method: OECD To	°F / 25 °C) est Guideline 117	
	Mobilit	y in soil				
	Compo	onents:				
	trientin	ie:				
	Distribu environ	ition among mental compartments	:	Koc: 3162.28, log Method: OECD To	Koc: 3.5 est Guideline 106	
	1-meth	ylimidazole:				
	Distribu environ	ition among mental compartments	:	Koc: 27 Method: Calculati	on method	
	2-(2-an	ninoethylamino)ethan	ol:			
	Distribu environ	ition among mental compartments	:	Koc: 4.2		



HUNTSMAN

EPO	DCAS	ST® 1636 B US			
Versi 2.1	on	Revision Date: 06/14/2023	SD 40	9S Number: 0001008591	Date of last issue: 06/09/2022 Date of first issue: 11/08/2016
				Koc: 3.524	Print Date 07/14/2023
	2-piper Distribu environ	azin-1-ylethylamine: Ition among mental compartments	:	Koc: ca. 37000	
;	3,6,9-tr	iazaundecamethylene	edia	mine:	
	Distribu environ	ition among mental compartments	:	Koc: 3.2 - 3.7 Method: OECD To	est Guideline 106
	Diethy l Distribu environ	enetriamine: ution among mental compartments	:	Medium: Soil Koc: 19111 Method: Sedimen	t and Soil Adsorption Isotherm
(Other a	adverse effects			
ļ	Produc	<u>:t:</u>			
	Ozone-	Depletion Potential	:	Regulation: 40 CF Protection of Strat Substances Remarks: This pro manufactured with U.S. Clean Air Ac B).	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 +
i	Additio informa	nal ecological ition	:	An environmental unprofessional ha Harmful to aquatio	hazard cannot be excluded in the event of ndling or disposal. c life with long lasting effects.
<u>(</u>	Compo	onents:			
; i	2-(2-an Addition informa	ninoethylamino)ethan nal ecological ition	iol: :	No data available	

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods	
Waste from residues :	Dispose of contents and container in accordance with all local, regional, national and international regulations. Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container.
Contaminated packaging :	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.



SDS Number:

400001008591



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SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR		
UN/ID No.	:	UN 2735
Proper shipping name	:	Amines, liquid, corrosive, n.o.s. (TRIETHYLENE TETRAMINE, DIETHYLENETRIAMINE)
Class	:	8
Packing group	:	II
Labels	:	Corrosive
Packing instruction (cargo aircraft)	:	855
Packing instruction (passenger aircraft)	:	851
IMDG-Code		
UN number	:	UN 2735
Proper shipping name	:	AMINES, LIQUID, CORROSIVE, N.O.S.
		(TRIETHYLENE TETRAMINE, DIETHYLENETRIAMINE)
Class	:	8
Packing group	:	
Labels	:	8
EmS Code	:	F-A, S-B
Marine pollutant	:	no

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

Not applicable for product as supplied.

National Regulations

49 CFR		
UN/ID/NA number	:	UN 2735
Proper shipping name	:	Amines, liquid, corrosive, n.o.s.
		(TRIETHYLENE TETRAMINE, DIETHYLENETRIAMINE)
Class	:	8
Packing group	:	II
Labels	:	CORROSIVE
ERG Code	:	153
Marine pollutant	:	no

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

CERCLA Reportable Quantity

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

SARA 311/312 Hazards	: Acute toxicity (any route of exposure)
	Respiratory or skin sensitisation
	Skin corrosion or irritation
	Serious eye damage or eye irritation
	Reproductive toxicity



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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) >=0.1%, as defined by the U.S. Clean Air Act Section 112 (40 CFR 61

Distributed By

Freeman Manufacturing & Supply Co. ww.freemansupply.com 800-321-8511

www.freemansupply.com

SDS Number:

400001008591

California Prop. 65

WARNING: This product can expose you to chemicals including toluene, 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 product are reported in the following inventories:

DSL	:	This product contains one or several components that are not on the Canadian DSL nor NDSL.
AIIC	:	Not in compliance with the inventory
ENCS	:	Notified. Allowed to be imported / manufactured only by the notifiers. Please contact your Huntsman sales representative for more information.
KECI	:	Not in compliance with the inventory
PICCS	:	Not in compliance with the inventory
IECSC	:	Notified. Allowed to be imported / manufactured only by the notifiers. Please contact your Huntsman sales representative for more information.
TCSI	:	Not in compliance with the inventory
TSCA	:	All substances listed as active on the TSCA inventory

Inventories

AIIC (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TECI (Thailand), 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.


SAFETY DATA SHEET





EPOCAST® 1636 B US

Revi
06/1

ision Date: 4/2023

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SECTION 16. OTHER INFORMATION

Further information





HMIS® IV:



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

Revision Date	:	06/14/2023
ACGIH NIOSH REL OSHA P0	::	USA. ACGIH Threshold Limit Values (TLV) USA. NIOSH Recommended Exposure Limits USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
ACGIH / TWA ACGIH / C NIOSH REL / TWA	:	8-hour, time-weighted average Ceiling limit Time-weighted average concentration for up to a 10-hour
NIOSH REL / C OSHA P0 / TWA OSHA P0 / C	: : :	Ceiling value not be exceeded at any time. 8-hour time weighted average Ceiling limit

The information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

SAFETY DATA SHEET





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