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SDS Number:

400001012680

## **RENLAM® 569 US**

Version Revision Date: 1.1 11/14/2018

Product name

**SECTION 1. IDENTIFICATION** 

Manufacturer or supplier's details				
Company name of supplier Address	<ul> <li>Huntsman Advanced Materials Americas LLC</li> <li>P.O. Box 4980 The Woodlands, TX 77387 United States of America (USA)</li> </ul>			
Telephone	: Non-Emergency: (800) 257-5547			
E-mail address of person responsible for the SDS	: SDS@huntsman.com			
Emergency telephone number	: Chemtrec: (800) 424-9300 or (703) 527-3887			
Recommended use of the chemical and restrictions on use				
Recommended use	: Component for special laminating systems Adhesives			

: RENLAM® 569 US

## **SECTION 2. HAZARDS IDENTIFICATION**

GHS classification in accord Skin irritation	lance with 29 CFR 1910.1200 : Category 2
Eye irritation	: Category 2A
Skin sensitisation	: Category 1
Reproductive toxicity	: Category 1B
Short-term (acute) aquatic hazard	: Category 2
Long-term (chronic) aquatic hazard	: Category 2
GHS label elements Hazard pictograms	
Signal word	: Danger
Hazard statements	<ul> <li>H315 Causes skin irritation.</li> <li>H317 May cause an allergic skin reaction.</li> <li>H319 Causes serious eye irritation.</li> </ul>





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		nage fertility or the unborn child. aquatic life with long lasting effects.
Precautionary statements	P202 Do not ha and understood P261 Avoid bre P264 Wash sk P272 Contamin the workplace. P273 Avoid rel P280 Wear pro face protection <b>Response:</b> P302 + P352 II P305 + P351 + for several min to do. Continue P308 + P313 II attention. P337 + P313 II attention. P337 + P313 II attention. P362 Take off P391 Collect s <b>Storage:</b> P405 Store loc <b>Disposal:</b> P501 Dispose	eathing dust/ fume/ gas/ mist/ vapours/ spray. in thoroughly after handling. nated work clothing should not be allowed out of lease to the environment. otective gloves/ protective clothing/ eye protection F ON SKIN: Wash with plenty of soap and water P338 IF IN EYES: Rinse cautiously with water nutes. Remove contact lenses, if present and eas e rinsing. F exposed or concerned: Get medical advice/ f skin irritation or rash occurs: Get medical advice/ f eye irritation persists: Get medical advice/ contaminated clothing and wash before reuse. pillage.

## Other hazards

None known.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture :	Mixture
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#### Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
2,2'-[(1-methylethylidene)bis(4,1-	1675-54-3	13 - 30
phenyleneoxymethylene)]bisoxirane		
dibutyl phthalate	84-74-2	3 - 7
The specific chemical identity and/or exact withheld as a trade secret.	ct percentage (concentratio	n) of composition may be
2,2'-[(1-methylethylidene)bis(4,1- phenyleneoxymethylene)]bisoxirane	1675-54-3	13 - 30
dibutyl phthalate	84-74-2	3 - 7
The specific chemical identity and/or exact withheld as a trade secret.	t percentage (concentratio	n) of composition may be
barium sulfate	7727-43-7	30 - 50





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2,2'-[(1-methylethylidene)bis(4,1- phenyleneoxymethylene)]bisoxirane	1675-54-3	25 - 30
dibutyl phthalate	84-74-2	5 - 10
cellulose	9004-34-6	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

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

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

General advice	<ul> <li>Move out of dangerous area.</li> <li>Show this safety data sheet to the doctor in attendance.</li> <li>Treat symptomatically.</li> <li>Get medical attention if symptoms occur.</li> </ul>
If inhaled	: If inhaled, remove to fresh air. Get medical attention if symptoms occur.
In case of skin contact	<ul> <li>If skin irritation persists, call a physician.</li> <li>If on skin, rinse well with water.</li> <li>If on clothes, remove clothes.</li> </ul>
In case of eye contact	<ul> <li>Immediately flush eye(s) with plenty of water. Remove contact lenses.</li> <li>Protect unharmed eye.</li> <li>Keep eye wide open while rinsing.</li> <li>If eye irritation persists, consult a specialist.</li> </ul>
If swallowed	<ul> <li>Induce vomiting immediately and call a physician.</li> <li>Keep respiratory tract clear.</li> <li>Never give anything by mouth to an unconscious person.</li> <li>If symptoms persist, call a physician.</li> <li>Take victim immediately to hospital.</li> </ul>
Most important symptoms and effects, both acute and delayed	: None known.
Notes to physician	: Treat symptomatically.

#### SECTION 4. FIRST AID MEASURES

#### **SECTION 5. FIREFIGHTING MEASURES**

Suitable extinguishing media :

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





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	Unsuita media	ble extinguishing	:	High volume wate	er jet
	Specific firefight	hazards during ing	:	Do not allow run-o courses.	off from fire fighting to enter drains or water
	Hazardo product	ous combustion s	:	Carbon oxides Halogenated com Sulphur oxides Metal oxides	pounds
	Specific method	extinguishing s	:	No data is availab	le on the product itself.
	Further	information	:	must not be disch Fire residues and	ated fire extinguishing water separately. This arged into drains. contaminated fire extinguishing water must accordance with local regulations.
	Special for firefi	protective equipment ghters	:	Wear self-contain necessary.	ed breathing apparatus for firefighting if

#### SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment.
Environmental precautions	<ul> <li>Prevent product from entering drains.</li> <li>Prevent further leakage or spillage if safe to do so.</li> <li>If the product contaminates rivers and lakes or drains inform respective authorities.</li> </ul>
Methods and materials for containment and cleaning up	<ul> <li>Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).</li> <li>Keep in suitable, closed containers for disposal.</li> </ul>

#### SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Advice on safe handling	:	Do not breathe vapours/dust. Avoid 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. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being





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Co	nditions for safe storage	Container upright to Observe la	tainer tightly closed in a dry and well-ventilated place. s which are opened must be carefully resealed and kept prevent leakage. abel precautions. roperly labelled containers.
	rther information on rage stability	: Stable ur	nder normal conditions.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
barium sulfate	7727-43-7	TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA (respirable fraction)	5 mg/m3	OSHA Z-1
		TWA (Inhalable fraction)	5 mg/m3	ACGIH
dibutyl phthalate	84-74-2	TWA	5 mg/m3	ACGIH
		TWA	5 mg/m3	OSHA Z-1
cellulose	9004-34-6	TWA	10 mg/m3	ACGIH
		TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA (respirable fraction)	5 mg/m3	OSHA Z-1

#### Components with workplace control parameters

#### Personal protective equipment

Respiratory protection	:	In the case of vapour formation use a respirator with an approved filter.
Hand protection Remarks	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Eye protection	:	Eye wash bottle with pure water Tightly fitting safety goggles Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures	:	When using do not eat or drink. When using do not smoke.



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Wash hands before breaks and at the end of workday.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	paste
Colour	:	off-white
Odour	:	slight
Odour Threshold	:	No data is available on the product itself.
рН	:	No data is available on the product itself.
Freezing point	:	No data is available on the product itself.
Melting point	:	No data is available on the product itself.
Boiling point	:	No data is available on the product itself.
Flash point	:	> 201 °F / > 94 °C Method: estimated, closed cup
Evaporation rate	:	No data is available on the product itself.
Flammability (solid, gas)	:	No data is available on the product itself.
Flammability (liquids)	:	No data is available on the product itself.
Upper explosion limit / Upper flammability limit	:	No data is available on the product itself.
Lower explosion limit / Lower flammability limit	:	No data is available on the product itself.
Vapour pressure	:	No data is available on the product itself.
Relative vapour density	:	No data is available on the product itself.
Relative density	:	1.3 - 1.9
Density	:	No data is available on the product itself.
Solubility(ies) Water solubility	:	insoluble
Solubility in other solvents	:	No data is available on the product itself.
Partition coefficient: n- octanol/water Auto-ignition temperature	:	No data is available on the product itself. No data is available on the product itself.
Thermal decomposition	:	No data is available on the product itself.





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	Accelerating mposition temperature )T)	1 :	No data is availa	ble on the product itself.
Visco	osity	: 1	lo data is availa	ble on the product itself.

Explosive properties	: No data is available on the product itself.
Oxidizing properties	: No data is available on the product itself.
Particle size	: No data is available on the product itself.

## SECTION 10. STABILITY AND REACTIVITY

Reactivity Chemical stability Possibility of hazardous reactions	: St	o dangerous reaction known under conditions of normal use. table under normal conditions. o hazards to be specially mentioned.
Conditions to avoid	: N	one known.
Incompatible materials	: N	one known.
Hazardous decomposition	: ca	arbon dioxide
products	Ca	arbon monoxide
	H	alogenated compounds
		ulphur oxides letal oxides

#### SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of : No data is available on the product itself. exposure

#### Acute toxicity

#### **Components:**

	phenyleneoxymethylene)]bisoxirane: LD50 (Rat, female): > 2,000 mg/kg Method: OECD Test Guideline 420 Assessment: The substance or mixture has no acute oral toxicity
dibutyl phthalate: Acute oral : toxicityComponents	LD50 (Rat, male and female): 6,279 mg/kg Method: OECD Test Guideline 401

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane: Acute oral : LD50 (Rat, female): > 2,000 mg/kg





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toxicil	tyComponents			est Guideline 420 substance or mixture has no acute oral
Acute	/l phthalate: oral tyComponents	:		and female): 6,279 mg/kg est Guideline 401
Acute	(1-methylethylidene)bis oral tyComponents		LD50 (Rat, femal Method: OECD T	nylene)]bisoxirane: e): > 2,000 mg/kg est Guideline 420 e substance or mixture has no acute oral
Acute	/l phthalate: e oral tyComponents	:		and female): 6,279 mg/kg est Guideline 401
cellulo Acute toxicit		:	LD50 (Rat): > 5,0	000 mg/kg
dibuty	oonents: /l phthalate: e inhalation toxicity	:	Exposure time: 4 Test atmosphere	: dust/mist substance or mixture has no acute
	/l phthalate: hinhalation toxicity	:	Exposure time: 4 Test atmosphere	: dust/mist substance or mixture has no acute
•	/l phthalate:	:	Exposure time: 4 Test atmosphere	: dust/mist e substance or mixture has no acute
cellule Acute	ose: inhalation toxicity	:	LC50 (Rat): > 5.8 Exposure time: 4 Test atmosphere	h





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		Assessmen inhalation to		mixture has no acute
2,2'-[(	<u>ponents:</u> 1-methylethylidene)bis( dermal toxicity	: LD50 (Rat, Method: OE	male and female): > ECD Test Guideline	2,000 mg/kg
	<pre>rl phthalate:   dermal toxicity</pre>	: LD50 (Rabl	oit): > 20,000 mg/kg	
	1-methylethylidene)bis( dermal toxicity	: LD50 (Rat, Method: OE	male and female): >	2,000 mg/kg
	l phthalate: dermal toxicity	: LD50 (Rabl	bit): > 20,000 mg/kg	
	1-methylethylidene)bis( dermal toxicity	: LD50 (Rat, Method: OE	male and female): > ECD Test Guideline	2,000 mg/kg
	d phthalate: dermal toxicity	: LD50 (Rabl	oit): > 20,000 mg/kg	
cellulo Acute	ose: dermal toxicity		bit): > 2,000 mg/kg it: The substance or	mixture has no acute dermal
	toxicity (other routes of histration)	f : No data ava	ailable	
Skin	corrosion/irritation			
2,2'-[( Speci Asses Metho	oonents: 1-methylethylidene)bis( es: Rabbit ssment: Mild skin irritan od: OECD Test Guidelir t: Irritating to skin.	t	ymethylene)]bisoxira	ine:





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dibutyl phthalate: Species: Rabbit Assessment: No skin irritation Method: OECD Test Guideline 404 Result: No skin irritation

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane: Species: Rabbit Assessment: Mild skin irritant Method: OECD Test Guideline 404 Result: Irritating to skin.

dibutyl phthalate: Species: Rabbit Assessment: No skin irritation Method: OECD Test Guideline 404 Result: No skin irritation

barium sulfate: Species: human skin Assessment: No skin irritation Result: No skin irritation

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane: Species: Rabbit Assessment: Mild skin irritant Method: OECD Test Guideline 404 Result: Irritating to skin.

dibutyl phthalate: Species: Rabbit Assessment: No skin irritation Method: OECD Test Guideline 404 Result: No skin irritation

cellulose: Assessment: No skin irritation Result: No skin irritation

#### Serious eye damage/eye irritation

#### Components:

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

dibutyl phthalate: Species: Rabbit Result: Normally reversible injuries Assessment: No eye irritation Method: OECD Test Guideline 405

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





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Species: Rabbit Result: Irritating to eyes. Assessment: Mild eye irritant Method: OECD Test Guideline 405

dibutyl phthalate: Species: Rabbit Result: Normally reversible injuries Assessment: No eye irritation Method: OECD Test Guideline 405

barium sulfate: Species: Rabbit Result: No eye irritation Assessment: No eye irritation Method: OECD Test Guideline 405

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

dibutyl phthalate: Species: Rabbit Result: Normally reversible injuries Assessment: No eye irritation Method: OECD Test Guideline 405

cellulose: Result: No eye irritation Assessment: No eye irritation

#### Respiratory or skin sensitisation

#### Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane: Exposure routes: Skin Species: Mouse Assessment: May cause sensitisation by skin contact. Method: OECD Test Guideline 429 Result: Causes sensitisation.

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

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane: Exposure routes: Skin Species: Mouse Assessment: May cause sensitisation by skin contact. Method: OECD Test Guideline 429 Result: Causes sensitisation.





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

barium sulfate: Exposure routes: Skin Species: Mouse Method: OECD Test Guideline 429 Result: Does not cause skin sensitisation.

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane: Exposure routes: Skin Species: Mouse Assessment: May cause sensitisation by skin contact. Method: OECD Test Guideline 429 Result: Causes sensitisation.

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

cellulose: Exposure routes: Skin Result: Does not cause skin sensitisation.

Assessment:

No data available

## Germ cell mutagenicity

#### **Components:**

components.	
	phenyleneoxymethylene)]bisoxirane: Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: positive
	Concentration: 0 - 5000 ug/plate Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: positive
dibutyl phthalate:	
Genotoxicity in vitro :	Concentration: 100 - 2000 ug/plate Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative
	phenyleneoxymethylene)]bisoxirane: Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: positive
	Concentration: 0 - 5000 ug/plate

Concentration: 0 - 5000 ug/plate





RENLAM® 569 US         Version       Revision Date:       SDS Number:       Date of last issue: 11/30/2017         1.1       11/14/2018       400001012680       Date of first issue: 11/30/2017         Metabolic activation: with and without metabolic activati       Metabolic activation: with and without metabolic activati         Metabolic activation: 100 - 2000 ug/plate       Metabolic activation: with and without metabolic activati         Metabolic activation: with and without metabolic activati       Metabolic activation: with and without metabolic activati         Metabolic activation: with and without metabolic activati       Metabolic activation: with and without metabolic activati         barium sulfate:       Genotoxicity in vitro       I Metabolic activation: with and without metabolic activati         Metabolic activation: with and without metabolic activati       Metabolic activation: with and without metabolic activati         Metabolic activation: with and without metabolic activati       Metabolic activation: with and without metabolic activati         Metabolic activation: with and without metabolic activati       Method: OECD Test Guideline 473         Result: negative       Concentration: 0 - 2000 ug/plate         Metabolic activation: with and without metabolic activati       Method: OECD Test Guideline 471         Result: positive       Concentration: 0 - 2000 ug/plate         Metabolic activation: with and without metabolic activati       <			www.freemansupply.com	800-321-8511 FREEMAN	Enriching lives through innova
1.1       11/14/2018       400001012680       Date of first issue: 11/30/2017         Metabolic activation: with and without metabolic activati Method: OECD Test Guideline 471 Result: positive       Metabolic activation: with and without metabolic activati Method: OECD Test Guideline 471 Result: negative         barium sulfate: Genotoxicity in vitro       E       Concentration: with and without metabolic activati Method: OECD Test Guideline 476 Result: negative         barium sulfate: Genotoxicity in vitro       Metabolic activation: with and without metabolic activati Method: OECD Test Guideline 477 Result: negative         Metabolic activation: with and without metabolic activati Method: OECD Test Guideline 471 Result: negative         Metabolic activation: with and without metabolic activati Method: OECD Test Guideline 471 Result: negative         2,2*-[(1-methylethylidene)bis(4, 1-phenyleneoxymethylene)]bisoxirane: Genotoxicity in vitro         2,2*-[(1-methylethylidene)bis(4, 1-phenyleneoxymethylene)]bisoxirane: Genotoxicity in vitro         2,2*-[(1-methylethylidene)bis(4, 1-phenyleneoxymethylene)]bisoxirane: Method: OECD Test Guideline 476 Result: positive         dibutyl phthalate: Genotoxicity in vitro       Concentration: 100 - 2000 ug/plate Method: OECD Test Guideline 471 Result: negative         dibutyl phthalate: Genotoxicity in vitro       Concentration: 00 - 2000 ug/plate Method: OECD Test Guideline 471 Result: negative         Components: Genotoxicity in vitro       Cel type: Germ Application R	RENLAN	1® 569 US			
Method: OECD Test Guideline 471 Result: positive         dibutyl phthalate:         Genotoxicity in vitro       : Concentration: 100 - 2000 ug/plate Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative         barium sulfate:       Genotoxicity in vitro       : Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative         barium sulfate:       Genotoxicity in vitro       : Metabolic activation: with and without metabolic activati Method: OECD Test Guideline 471 Result: negative         Metabolic activation: with and without metabolic activati Method: OECD Test Guideline 473 Result: negative       2,2*-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:         Genotoxicity in vitro       : Metabolic activation: with and without metabolic activati Method: OECD Test Guideline 476 Result: positive         Concentration: 0 - 5000 ug/plate Metabolic activation: with and without metabolic activati Method: OECD Test Guideline 471 Result: positive         dibutyl phthalate:       Genotoxicity in vitro         2,2*-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:         Genotoxicity in vitro       : Concentration: 100 - 2000 ug/plate Metabolic activation: with and without metabolic activati Method: OECD Test Guideline 471 Result: negative         dibutyl phthalate:       Cell type: Germ Application Route: Oral Method: OECD Test Guideline 478 Result: negative         Cell type: Somatic Application Route: Oral Method: OECD Test Guideline 478 Result: negative <td></td> <td></td> <td></td> <td></td> <td></td>					
Genotoxicity in vitro       : Concentration: 100 - 2000 ug/plate Metabolic activation: with and without metabolic activati Method: OECD Test Guideline 471 Result: negative         barium sulfate:       : Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative         Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 477 Result: negative         Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473 Result: negative         2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:         Genotoxicity in vitro       : Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative         2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:       : Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: positive         Concentration: 0 - 5000 ug/plate Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: positive         dibutyl phthalate:       : Concentration: 100 - 2000 ug/plate Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative         Components:       : Cell type: Germ Application Route: Oral Method: OECD Test Guideline 478 Result: negative         Cell type: Somatic Application Route: Oral Method: OEPTS 870.5395 Result: negative         Cell type: Somatic Application Route: Oral Dose: 0 - 5000 mg/kg Method: OPPTS 870.5395 Result: negative         dibutyl phthalate: Genotoxi			Method: OE	ECD Test Guideline 47	
Genotoxicity in vitro       : Metabolic activation: with and without metabolic activation: Method: OECD Test Guideline 476         Result: negative       Metabolic activation: with and without metabolic activation: Method: OECD Test Guideline 471         Result: negative       Metabolic activation: with and without metabolic activation: Method: OECD Test Guideline 473         Result: negative       Metabolic activation: with and without metabolic activation: Method: OECD Test Guideline 473         Result: negative       : Metabolic activation: with and without metabolic activation: Method: OECD Test Guideline 476         Genotoxicity in vitro       : Metabolic activation: with and without metabolic activation: Method: OECD Test Guideline 476         Result: positive       Concentration: 0 - 5000 ug/plate         Method: OECD Test Guideline 471       Result: positive         Concentration: 0 - 5000 ug/plate       Method: OECD Test Guideline 471         Result: positive       Concentration: 100 - 2000 ug/plate         Method: OECD Test Guideline 471       Result: negative         dibutyl phthalate:       Genotoxicity in vitro         Components:       : Cell type: Germ         Application Route: Oral       Method: OECD Test Guideline 478         Result: negative       Cell type: Somatic         Application Route: Oral       Method: OPPTS 870.5395         Result: negative       Cell type: Somatic			Metabolic a Method: OE	ctivation: with and with ECD Test Guideline 47	hout metabolic activation
Method: OECD Test Guideline 471 Result: negative         Metabolic activation: with and without metabolic activati Method: OECD Test Guideline 473 Result: negative         2,2*-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:         Genotoxicity in vitro       : Metabolic activation: with and without metabolic activati Method: OECD Test Guideline 476 Result: positive         Concentration: 0 - 5000 ug/plate Metabolic activation: with and without metabolic activati Method: OECD Test Guideline 471 Result: positive         dibutyl phthalate: Genotoxicity in vitro       : Concentration: 100 - 2000 ug/plate Metabolic activation: with and without metabolic activati Method: OECD Test Guideline 471 Result: negative         Components: 2,2*-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane: Genotoxicity in vivo       : Cell type: Germ Application Route: Oral Method: OECD Test Guideline 478 Result: negative         Cell type: Somatic Application Route: Oral Dose: 0 - 5000 mg/kg Method: OPTS 870.5395 Result: negative         dibutyl phthalate: Genotoxicity in vivo       : Exposure time: 13 Weeks			Method: OE	ECD Test Guideline 47	
Method: OECD Test Guideline 473 Result: negative         2.2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane: Genotoxicity in vitro         :       Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: positive         :       Concentration: 0 - 5000 ug/plate Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: positive         :       Concentration: 100 - 2000 ug/plate Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: positive         :       Components:         :       2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane: Genotoxicity in vivo         :       Cell type: Germ Application Route: Oral Method: OECD Test Guideline 473 Result: negative         :       Cell type: Somatic Application Route: Oral Dose: 0 - 5000 mg/kg Method: OPPTS 870.5395 Result: negative         :       Genotoxicity in vivo         :       Exposure time: 13 Weeks			Method: OE	ECD Test Guideline 47	
Genotoxicity in vitro       : Metabolic activation: with and without metabolic activation: With and without metabolic activation: O = 5000 ug/plate         Metabolic activation: 0 - 5000 ug/plate       Metabolic activation: with and without metabolic activation: with and without metabolic activation: With and without metabolic activation: OECD Test Guideline 471         dibutyl phthalate:       Genotoxicity in vitro       : Concentration: 100 - 2000 ug/plate         Metabolic activation: with and without metabolic activation: Wethod: OECD Test Guideline 471         Result: negative       Components:         2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:         Genotoxicity in vivo       : Cell type: Germ         Application Route: Oral       Method: OECD Test Guideline 478         Result: negative       Cell type: Somatic         Application Route: Oral       Dose: 0 - 5000 mg/kg         Method: OPPTS 870.5395       Result: negative         dibutyl phthalate:       Genotoxicity in vivo         Genotoxicity in vivo       : Exposure time: 13 Weeks			Method: OE	ECD Test Guideline 47	
Metabolic activation: with and without metabolic activation:         Metabolic activation: with and without metabolic activation:         Method:         OECD Test Guideline 471         Result:         Result:         Method:         OECD Test Guideline 471         Result:         Method:         OECD Test Guideline 478         Result:         Method:         OECD Test Guideline 478         Result:         Method:         OPECD Test Guideline 478         Result:         Method:         OPETS 870.5395         Result: <t< td=""><td></td><td></td><td>: Metabolic a Method: OE</td><td>ctivation: with and with ECD Test Guideline 47</td><td>hout metabolic activation</td></t<>			: Metabolic a Method: OE	ctivation: with and with ECD Test Guideline 47	hout metabolic activation
Genotoxicity in vitro       : Concentration: 100 - 2000 ug/plate         Metabolic activation: with and without metabolic activation: with and without metabolic activation: Wethod: OECD Test Guideline 471         Result: negative         Components:         2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:         Genotoxicity in vivo       : Cell type: Germ         Application Route: Oral         Method: OECD Test Guideline 478         Result: negative         Cell type: Somatic         Application Route: Oral         Dose: 0 - 5000 mg/kg         Method: OPPTS 870.5395         Result: negative         dibutyl phthalate:         Genotoxicity in vivo       : Exposure time: 13 Weeks			Metabolic a Method: OE	ctivation: with and with ECD Test Guideline 47	
2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:         Genotoxicity in vivo       : Cell type: Germ         Application Route: Oral         Method: OECD Test Guideline 478         Result: negative         Cell type: Somatic         Application Route: Oral         Dose: 0 - 5000 mg/kg         Method: OPPTS 870.5395         Result: negative         dibutyl phthalate:         Genotoxicity in vivo       : Exposure time: 13 Weeks			Metabolic a Method: OE	ctivation: with and with ECD Test Guideline 47	hout metabolic activation
Application Route: Oral Dose: 0 - 5000 mg/kg Method: OPPTS 870.5395 Result: negative dibutyl phthalate: Genotoxicity in vivo : Exposure time: 13 Weeks	2,2'-[(1-	methylethylidene)bis	: Cell type: G Application Method: OF	Germ Route: Oral ECD Test Guideline 47	
Genotoxicity in vivo : Exposure time: 13 Weeks			Application Dose: 0 - 5 Method: OF	Route: Oral 000 mg/kg PPTS 870.5395	





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		Result: negative	9
	(1-methylethylidene)bi toxicity in vivo	s(4,1-phenyleneoxyme : Cell type: Germ Application Rou Method: OECD Result: negative	te: Oral Test Guideline 478
		Cell type: Soma Application Rou Dose: 0 - 5000 Method: OPPTS Result: negative	ite: Oral mg/kg S 870.5395
	/l phthalate: toxicity in vivo	: Exposure time: Dose: 163 - 427 Result: negative	78 mg/kg
	(1-methylethylidene)bia toxicity in vivo	s(4,1-phenyleneoxyme : Cell type: Germ Application Rou Method: OECD Result: negative	ite: Oral Test Guideline 478
		Cell type: Soma Application Rou Dose: 0 - 5000 Method: OPPTS Result: negative	ite: Oral mg/kg S 870.5395
	/l phthalate: toxicity in vivo	: Exposure time: Dose: 163 - 427 Result: negative	78 mg/kg
Carci	nogenicity		

## Components:

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

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





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Species: Rat, female Application Route: Dermal Exposure time: 24 month(s) Dose: 1 mg/kg Frequency of Treatment: 5 days/week Method: OECD Test Guideline 453 Result: negative

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

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

Species: Rat, female Application Route: Dermal Exposure time: 24 month(s) Dose: 1 mg/kg Frequency of Treatment: 5 days/week Method: OECD Test Guideline 453 Result: negative

barium sulfate: Species: Rat, male and female Application Route: Oral Exposure time: 104 weeks Dose: 60 - 75 mg/kg Method: OPPTS 870.4200 Result: negative

Species: Mouse, male and female Application Route: Oral Dose: 160 - 200 mg/kg Method: OPPTS 870.4200 Result: negative

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





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Applic Expos Dose: Freque Metho	es: Mouse, male ation Route: Dermal ure time: 24 month(s) 0.1 mg/kg ency of Treatment: 3 da d: OECD Test Guideline :: negative		
Applic Expos Dose: Freque Metho	es: Rat, female ation Route: Dermal ure time: 24 month(s) 1 mg/kg ency of Treatment: 5 da d: OECD Test Guideline :: negative		
Carcin Asses	ogenicity - sment	: No data available	
IARC			is product present at levels greater than or ntified as probable, possible or confirmed by IARC.
ACGI	н		is product present at levels greater than or ntified as a carcinogen or potential H.
OSHA			s product present at levels greater than or OSHA's list of regulated carcinogens.
NTP			is product present at levels greater than or ntified as a known or anticipated carcinogen
•	oductive toxicity		
2,2'-[(2	<u>onents:</u> 1-methylethylidene)bis(4 s on fertility	<ul> <li>Test Type: Two-g Species: Rat, ma Application Route Dose: &gt;750 millig General Toxicity - mg/kg body weigh General Toxicity I body weight Symptoms: No ac Method: OECD T</li> </ul>	eneration study le and female e: Oral ram per kilogram - Parent: No-observed-effect level: 540 ht F1: No-observed-effect level: 540 mg/kg dverse effects est Guideline 416 s on fertility and early embryonic
dibutyl	l phthalate:	Species: Rat, ma Application Route General Toxicity 385 mg/kg body v	e: Oral - Parent: No observed adverse effect level:

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/ersion I.1	Revision Date: 11/14/2018	SDS Number: 400001012680		issue: 11/30/2017 issue: 11/30/2017
		Target Organs	: Reproductive c	organs
2,2'-[(1	-methylethylidene)bis	Test Type: Tw Species: Rat, Application Rc Dose: >750 m General Toxic mg/kg body w General Toxic body weight Symptoms: No Method: OECI	o-generation stu male and female oute: Oral illigram per kilog ity - Parent: No-o eight ity F1: No-observ o adverse effects O Test Guideline ects on fertility ar	dy ram observed-effect level: 540 ved-effect level: 540 mg/kg
dibutyl	phthalate:			
		Application Ro General Toxic 385 mg/kg boo	ity - Parent: No c	bserved adverse effect level:
2,2'-[(1	-methylethylidene)bis	Test Type: Tw Species: Rat, Application Rc Dose: >750 m General Toxic mg/kg body w General Toxic body weight Symptoms: No Method: OECI	o-generation stu male and female oute: Oral illigram per kilog ity - Parent: No-o eight ity F1: No-observ o adverse effects O Test Guideline ects on fertility ar	dy ram observed-effect level: 540 ved-effect level: 540 mg/kg
dibutyl	phthalate:			
		Application Ro General Toxic 385 mg/kg boo	ity - Parent: No c	bserved adverse effect level:
<u>Comp</u>	onents:			
Effects	-methylethylidene)bis s on foetal pment	: Species: Rabb Application Ro General Toxic 30 mg/kg body Method: Other	bit, female bute: Dermal ity Maternal: No y weight guidelines atogenic effects bit, female	ane: observed adverse effect level:

Application Route: Oral





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		General Toxicit 60 mg/kg body Method: OECD Result: No terat	weight Test Guideline	observed adverse effect level: 414
		Species: Rat, fe Application Rou General Toxicit 180 mg/kg body Method: OECD Result: No terat	ite: Oral y Maternal: No o y weight Test Guideline	observed adverse effect level: 414
dibut	yl phthalate:			
		Species: Rat, m Application Rou General Toxicit level: 10,000 pp Result: Teratog	ite: Oral y Maternal: Low om	est observed adverse effect
		Species: Mouse Application Rou General Toxicit 100 mg/kg body Result: Teratog	ite: Oral y Maternal: No o y weight	observed adverse effect level:
2,2'-[	(1-methylethylidene)bis	s(4,1-phenyleneoxyme	thylene)]bisoxir	ane:
		Species: Rabbi Application Rou General Toxicit 30 mg/kg body Method: Other g Result: No terat	ite: Dermal y Maternal: No o weight guidelines	observed adverse effect level:
		Species: Rabbin Application Rou General Toxicity 60 mg/kg body Method: OECD Result: No terat	ite: Oral y Maternal: No o weight Test Guideline	observed adverse effect level: 414
		Species: Rat, fe Application Rou General Toxicity 180 mg/kg body Method: OECD Result: No terat	ite: Oral y Maternal: No o y weight Test Guideline	observed adverse effect level: 414
dibut	yl phthalate:	Species: Rat, m Application Rou General Toxicit level: 10,000 pp Result: Teratog	ite: Oral y Maternal: Low om	est observed adverse effect
		Species: Mouse Application Rou		





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ersion 1	Revision Date: 11/14/2018	SDS Number: 400001012680		ssue: 11/30/2017 issue: 11/30/2017
		General Toxici 100 mg/kg boo Result: Terato	ly weight	observed adverse effect leve
2,2'-[(	1-methylethylidene)b	bis(4,1-phenyleneoxym	ethylene)]bisoxira	ane:
		Species: Rabb Application Ro		
		••	ty Maternal: No c v weight	bbserved adverse effect leve
			atogenic effects	
		Species: Rabb Application Ro	ute: Oral	observed adverse effect leve
		60 mg/kg body Method: OECI		
		180 mg/kg boo Method: OECI	ute: Oral ty Maternal: No c	observed adverse effect leve
dibuty	l phthalate:	_		
		Application Ro	ty Maternal: Low	est observed adverse effect
		Species: Mous Application Ro General Toxici 100 mg/kg boo Result: Terato	ute: Oral ty Maternal: No c ly weight	observed adverse effect leve
Comp	onents:			
Repro	l phthalate: ductive toxicity - sment			cts on sexual function and , based on animal experimer
Repro	l phthalate: ductive toxicity - sment			cts on sexual function and , based on animal experimer
dibuty	l phthalate: ductive toxicity -	· Clear evidence	e of adverse effec	cts on sexual function and





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## STOT - repeated exposure

No data available

#### **Repeated dose toxicity**

#### Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane: Species: Rat, male and female NOAEL: 50 mg/kg Application Route: Ingestion Exposure time: 14 Weeks Number of exposures: 7 d Method: Subchronic toxicity

Species: Rat, male and female NOEL: 10 mg/kg Application Route: Skin contact Exposure time: 13 Weeks Number of exposures: 5 d Method: Subchronic toxicity

Species: Mouse, male NOAEL: 100 mg/kg Application Route: Skin contact Exposure time: 13 Weeks Number of exposures: 3 d Method: Subchronic toxicity

dibutyl phthalate: Species: Rat, male and female NOEC: 509 mg/m3 Application Route: Ingestion Test atmosphere: dust/mist Exposure time: 4 Weeks Number of exposures: 6 h Method: OECD Test Guideline 412

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane: Species: Rat, male and female NOAEL: 50 mg/kg Application Route: Ingestion Exposure time: 14 Weeks Number of exposures: 7 d Method: Subchronic toxicity

Species: Rat, male and female NOEL: 10 mg/kg Application Route: Skin contact Exposure time: 13 Weeks Number of exposures: 5 d Method: Subchronic toxicity

Species: Mouse, male NOAEL: 100 mg/kg





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Application Route: Skin contact Exposure time: 13 Weeks Number of exposures: 3 d Method: Subchronic toxicity

dibutyl phthalate: Species: Rat, male and female NOEC: 509 mg/m3 Application Route: Ingestion Test atmosphere: dust/mist Exposure time: 4 Weeks Number of exposures: 6 h Method: OECD Test Guideline 412

barium sulfate: Species: Rat LOEC: >= 104 mg/kg, 40 mg/m3 Application Route: Ingestion Test atmosphere: dust/mist Exposure time: 5 h Number of exposures: 5 d Method: Subchronic toxicity

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane: Species: Rat, male and female NOAEL: 50 mg/kg Application Route: Ingestion Exposure time: 14 Weeks Number of exposures: 7 d Method: Subchronic toxicity

Species: Rat, male and female NOEL: 10 mg/kg Application Route: Skin contact Exposure time: 13 Weeks Number of exposures: 5 d Method: Subchronic toxicity

Species: Mouse, male NOAEL: 100 mg/kg Application Route: Skin contact Exposure time: 13 Weeks Number of exposures: 3 d Method: Subchronic toxicity

dibutyl phthalate: Species: Rat, male and female NOEC: 509 mg/m3 Application Route: Ingestion Test atmosphere: dust/mist Exposure time: 4 Weeks Number of exposures: 6 h





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Method: OECD Test Guideline 412

Repeated dose toxicity - : No data available Assessment

## Aspiration toxicity

No data available

Experience with human exposure						
General Information:	No data available					
Inhalation:	No data available					
Skin contact:	No data available					
Eye contact:	No data available					
Ingestion:	No data available					

### **Toxicology, Metabolism, Distribution** No data available

## Neurological effects

No data available

## **Further information**

Ingestion: No data available

## SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity	
<u>Components:</u>	
	phenyleneoxymethylene)]bisoxirane:
Toxicity to fish :	LC50 (Oncorhynchus mykiss (rainbow trout)): 1.5 mg/l Exposure time: 96 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 203
dibutyl phthalate: Toxicity to fish :	LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.48 mg/l Exposure time: 96 h Test Type: static test





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Ve 1.	ersion 1	Revision Date: 11/14/2018	SDS Number: 400001012680		t issue: 11/30/2017 t issue: 11/30/2017
				ance: Fresh water ECD Test Guideline	∋ 203
	2,2'-[(1- Toxicity	methylethylidene)bis(4 to fish	: LC50 (Ond Exposure t Test Type: Test subst	corhynchus mykiss time: 96 h	(rainbow trout)): 1.5 mg/l
	dibutyl p Toxicity	ohthalate: to fish	Exposure f Test Type: Test subst	time: 96 h	Bluegill sunfish)): 0.48 mg/l e 203
	barium : Toxicity			time: 96 h	∋ 203
	2,2'-[(1- Toxicity	methylethylidene)bis(4 to fish	: LC50 (Ond Exposure f Test Type: Test subst	corhynchus mykiss time: 96 h	(rainbow trout)): 1.5 mg/l
	dibutyl p Toxicity	ohthalate: to fish	Exposure t Test Type: Test subst	time: 96 h	Bluegill sunfish)): 0.48 mg/l e 203
	cellulos Toxicity		: LC50: > 10 Exposure t		
	Toxicity	nents: methylethylidene)bis( to daphnia and other invertebrates	EC50 (Dap Exposure f Test Type:	ohnia magna (Wate time: 48 h	
	Toxicity	ohthalate: to daphnia and other invertebrates	Exposure t Test Type: Test subst		





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Version 1.1	Revision Date: 11/14/2018		OS Number: 0001012680			e: 11/30/2017 e: 11/30/2017	
			Exposure til Test Type: Test substa	me: 96 h	water	r shrimp)): 0.5 mg/l	
Toxic	(1-methylethylidene)bis city to daphnia and othe tic invertebrates		EC50 (Dapl Exposure ti Test Type:	hnia magna me: 48 h	(Water flea)	): 2.7 mg/l	
Toxic	yl phthalate: city to daphnia and other tic invertebrates	r:		me: 48 h	vater	-	
			Exposure til Test Type: Test substa	me: 96 h	water	r shrimp)): 0.5 mg/l	
Toxic	m sulfate: city to daphnia and other tic invertebrates	r:		me: 48 h	vater	): 14.5 mg/l	
Toxic	(1-methylethylidene)bis city to daphnia and other tic invertebrates		EC50 (Dapl Exposure ti Test Type:	hnia magna me: 48 h	(Water flea)	): 2.7 mg/l	
Toxic	yl phthalate: city to daphnia and other tic invertebrates	r :	Exposure til Test Type: Test substa		vater	-	
			Exposure til Test Type: Test substa	me: 96 h	water	r shrimp)): 0.5 mg/l	
	lose: city to daphnia and othe tic invertebrates	r:	EC50: > 10 Exposure ti				

Toxicity to algae

dibutyl phthalate: Toxicity to algae

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2,2'-[	<b>ponents:</b> (1-methylethylidene)bis ity to algae		rum capricornutum (green algae)): 9.4 mg/l 72 h c test Fresh water
	yl phthalate: ity to algae	: EC50 (Selenast Exposure time: Test Type: static Test substance:	c test
	(1-methylethylidene)bis ity to algae		rum capricornutum (green algae)): 9.4 mg/l 72 h c test Fresh water
	yl phthalate: ity to algae	: EC50 (Selenast Exposure time: Test Type: static Test substance:	c test
	m sulfate: ity to algae	: EC50: > 100 mg Exposure time: Test Type: static Test substance: Method: OECD	72 h c test
		NOEC: > 1.15 n Exposure time: Test Type: statio Test substance: Method: OECD	72 h c test

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

Exposure time: 72 h Test Type: static test Test substance: Fresh water Method: EPA-660/3-75-009

Exposure time: 240 h Test Type: static test Test substance: Fresh water

: EC50 (Selenastrum capricornutum (green algae)): 9.4 mg/l

: EC50 (Selenastrum capricornutum (green algae)): 0.75 mg/l

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toxic dibut	actor (Acute aquatic ity) tyl phthalate: actor (Acute aquatic	: 1 : 1	
toxic dibut	ity) tyl phthalate: actor (Acute aquatic	: 1	
dibut	<b>iponents:</b> tyl phthalate: city to fish (Chronic ity)	: NOEC (Oncorh Exposure time:	ynchus mykiss (rainbow trout)): 0.1 mg/l 99 d
	tyl phthalate: city to fish (Chronic ity)	: NOEC (Oncorh Exposure time:	ynchus mykiss (rainbow trout)): 0.1 mg/l 99 d
	tyl phthalate: city to fish (Chronic ity)	: NOEC (Oncorh Exposure time:	ynchus mykiss (rainbow trout)): 0.1 mg/l 99 d
2,2'-  Toxio aqua	<b>ponents:</b> [(1-methylethylidene)bis( city to daphnia and other atic invertebrates onic toxicity)	: NOEC (Daphnia Exposure time: Test Type: sem Test substance	a magna (Water flea)): 0.3 mg/l 21 d i-static test
Toxic aqua (Chr	atic invertebrates onic toxicity)	Exposure time:	
Toxi aqua	[(1-methylethylidene)bis(4 city to daphnia and other atic invertebrates onic toxicity)	: NOEC (Daphnia Exposure time: Test Type: sem Test substance	a magna (Water flea)): 0.3 mg/l 21 d i-static test
Toxi aqua	tyl phthalate: city to daphnia and other atic invertebrates onic toxicity)	: NOEC (Daphnia Exposure time:	a pulex (Water flea)): 0.1 mg/l 10 d
Toxi aqua	um sulfate: city to daphnia and other atic invertebrates onic toxicity)	Exposure time: Test Type: sem Test substance	i-static test
Toxi aqua	[(1-methylethylidene)bis(4 city to daphnia and other atic invertebrates onic toxicity)		a magna (Water flea)): 0.3 mg/l 21 d





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			Test substa Method: OE		resh water est Guideline 2	211	
Toxic aqua	yl phthalate: ity to daphnia and other tic invertebrates onic toxicity)	:	NOEC (Dap Exposure tir		ulex (Water fle d	∋a)): 0.1 mg/l	
	ctor (Chronic aquatic	:	No data ava	ailable			
2,2'-[	<b>ponents:</b> (1-methylethylidene)bis(4 ity to microorganisms			ated slu me: 3 h static te	udge): > 100 m n est		
	yl phthalate: ity to microorganisms	:	EC50 (Bacto Exposure tir				
	(1-methylethylidene)bis(4 ity to microorganisms	۱,1-۱ :		ated slu me: 3 h static te	udge): > 100 m n est		
	yl phthalate: ity to microorganisms	:	EC50 (Bacto Exposure tir				
	(1-methylethylidene)bis(4 ity to microorganisms			ated slu me: 3 h static te	ıdge): > 100 m า est		
	yl phthalate: ity to microorganisms	:	EC50 (Bacto Exposure tir				
dibut <u>y</u> Toxic	<b>ponents:</b> yl phthalate: ity to soil dwelling nisms	:	LC50: 10 m Exposure tir		4 h		
			NOEC: 0.5 Exposure tir		4 h		
Toxic	yl phthalate: sity to soil dwelling nisms	:	LC50: 10 m Exposure tir		4 h		
			NOEC: 0.5 Exposure tir		4 h		





		www.freemansupply.com 800-32	1-8511 FREEMAN Enriching lives through innovat
Version	M® 569 US Revision Date:	SDS Number:	Date of last issue: 11/30/2017
1.1	11/14/2018	400001012680	Date of first issue: 11/30/2017
Toxic	yl phthalate: ity to soil dwelling hisms	: LC50: 10 mg/kg Exposure time: 5	i04 h
		NOEC: 0.5 mg/k Exposure time: 5	
dibut	<b>ponents:</b> yl phthalate: toxicity	: NOEC: 200 mg/l Exposure time: 3 Test substance:	3 Weeks
		EC50: 387 mg/kg Exposure time: 1 Method: Terrestr Seedling Growth	68 h ial Plants Test: Seedling Emergence and
	yl phthalate: toxicity	: NOEC: 200 mg/l Exposure time: 3 Test substance:	3 Weeks
		EC50: 387 mg/kg Exposure time: 1 Method: Terrestr Seedling Growth	68 h ial Plants Test: Seedling Emergence and
	yl phthalate: toxicity	: NOEC: 200 mg/l Exposure time: 3 Test substance:	3 Weeks
		EC50: 387 mg/kg Exposure time: 1 Method: Terrestr Seedling Growth	68 h ial Plants Test: Seedling Emergence and
dibut	ponents: yl phthalate: nent toxicity	: (Gammarus pule Study: Acute Test Type: Other Water: Fresh wa Exposure duratic	ter
		100 mg/kgsedim Study: Chronic Water: Marine w Exposure duratic	ater
	yl phthalate: nent toxicity	: (Gammarus pule Study: Acute	ex (Amphipod)): 826 mg/kgsedimentdw





		Freeman Manufacturing www.freemansupply.com		hrough
RENLA	M® 569 US			
ersion 1	Revision Date: 11/14/2018	SDS Number: 400001012680	Date of last issue: 11/30/2017 Date of first issue: 11/30/2017	
		Test Type: C Water: Fresh Exposure du		
		100 mg/kgse Study: Chror Water: Marin Exposure du	nic	
dibutyl phthalate: Sediment toxicity		Study: Acute	other guidelines Ni water	mentdv
		100 mg/kgse Study: Chror Water: Marin Exposure du	nic	
Comp	onents:			
dibutyl	phthalate: y to terrestrial	: NOEC: 0.472 Exposure tim		
	phthalate: y to terrestrial sms	: NOEC: 0.472 Exposure tim		
	phthalate: y to terrestrial sms	: NOEC: 0.472 Exposure tim		
	icology Assessment aquatic toxicity	: No data avai	lable	
Chroni	c aquatic toxicity	: No data avai	lable	
Toxicit	y Data on Soil	: No data avai	lable	
	organisms relevant to vironment	: No data avai	lable	
Persis	tence and degradabil	ity		





RENL	AM® 569 U	IS

Version 1.1	Revision Date: 11/14/2018	SDS Number: 400001012680	Date of last issue: 11/30/2017 Date of first issue: 11/30/2017
	ו phthalate: gradability	Biodegradatic Exposure tim Method: Direc Inoculum: act	n: 21.7 mg/l ily biodegradable. on: 81 % e: 28 d ctive 67/548/EEC Annex V, C.4.C. iivated sludge ily biodegradable. on: > 97 %
	1-methylethylidene)bis( gradability	: Inoculum: Se Concentration Result: Not re Biodegradation Exposure time	wage (STP effluent) n: 20 mg/l eadily biodegradable. on: 5 %
	l phthalate: gradability	Biodegradatic Exposure tim Method: Direc Inoculum: act	n: 21.7 mg/l ily biodegradable. on: 81 % e: 28 d ctive 67/548/EEC Annex V, C.4.C. iivated sludge ily biodegradable. on: > 97 %
	1-methylethylidene)bis( gradability	: Inoculum: Se Concentration Result: Not re Biodegradatio Exposure time	wage (STP effluent) n: 20 mg/l eadily biodegradable. on: 5 %
	ו phthalate: gradability	Biodegradatic Exposure tim Method: Direc Inoculum: act	n: 21.7 mg/l ily biodegradable. on: 81 % e: 28 d ctive 67/548/EEC Annex V, C.4.C. ivated sludge ily biodegradable. on: > 97 %
Bioch	emical Oxygen	: No data avail	able





RENLAM® 569 US				
Vers 1.1	sion	Revision Date: 11/14/2018	SDS Number: 400001012680	Date of last issue: 11/30/2017 Date of first issue: 11/30/2017
	Deman	d (BOD)		
	Chemic (COD)	cal Oxygen Demand	: No data available	e
	BOD/C	OD	: No data available	e
	ThOD		: No data available	e
	BOD/TI	hOD	: No data available	e
	Dissolv (DOC)	ed organic carbon	: No data available	e
	Physico remova	o-chemical Ibility	: No data available	e
		onents: -methylethylidene)bis(4 y in water	: Degradation half Method: OECD Remarks: Fresh Degradation half Method: OECD Remarks: Fresh Degradation half	Filfe(DT50): 4.83 d (77 °F / 25 °C) pH: 4 Fest Guideline 111 water Filfe(DT50): 7.1 d (77 °F / 25 °C) pH: 9 Fest Guideline 111 water Filfe(DT50): 3.58 d (77 °F / 25 °C) pH: 7 Fest Guideline 111
		-methylethylidene)bis(4 y in water	: Degradation half Method: OECD <sup>-</sup> Remarks: Fresh Degradation half Method: OECD <sup>-</sup> Remarks: Fresh Degradation half	Filfe(DT50): 4.83 d (77 °F / 25 °C) pH: 4 Fest Guideline 111 water Filfe(DT50): 7.1 d (77 °F / 25 °C) pH: 9 Fest Guideline 111 water Filfe(DT50): 3.58 d (77 °F / 25 °C) pH: 7 Fest Guideline 111
		-methylethylidene)bis(4 y in water	4,1-phenyleneoxymet : Degradation half Method: OECD <sup>-</sup> Remarks: Fresh	hylene)]bisoxirane: <sup>;</sup> life(DT50): 4.83 d (77 °F / 25 °C) pH: 4 Fest Guideline 111 water
				<sup>:</sup> life(DT50): 7.1 d (77 °F / 25 °C) pH: 9 Fest Guideline 111 water

Degradation half life(DT50): 3.58 d (77 °F / 25 °C) pH: 7





# RENLAM® 569 US

Version 1.1	Revision Date: 11/14/2018	SDS Number: 400001012680	Date of last issue: 11/30/2017 Date of first issue: 11/30/2017
		Method: OECE Remarks: Fres	) Test Guideline 111 h water
	oonents:		
	/l phthalate: odegradation	: Test Type: Air Rate constant:	< .00001
	/l phthalate: odegradation	: Test Type: Air Rate constant:	< .00001
	/l phthalate: odegradation	: Test Type: Air Rate constant:	< .00001
Impac Treat	ct on Sewage ment	: No data availa	ble
Bioad	ccumulative potentia	I	
Com	ponents:		
2,2'-[(	(1-methylethylidene)bis cumulation	: Bioconcentration	ethylene)]bisoxirane: on factor (BCF): 31 s not bioaccumulate.
	/l phthalate: cumulation		on factor (BCF): 0.81 e: Marine water
		Bioconcentratio	on factor (BCF): < 1
<b>D</b> <sup>1</sup>	(1-methylethylidene)bis cumulation	: Bioconcentration	ethylene)]bisoxirane: on factor (BCF): 31 s not bioaccumulate.
	/l phthalate: cumulation		on factor (BCF): 0.81 e: Marine water
		Bioconcentratio	on factor (BCF): < 1
	(1-methylethylidene)bis cumulation	: Bioconcentration	ethylene)]bisoxirane: on factor (BCF): 31 s not bioaccumulate.
	/l phthalate: cumulation		on factor (BCF): 0.81 e: Marine water
		Bioconcentratio	on factor (BCF): < 1

## Components:

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





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	on coefficient: n- ol/water	: log Pow: 3.242 (7 pH: 7.1 Method: OECD T	7 °F / 25 °C) est Guideline 117
Partiti	/l phthalate: on coefficient: n- ol/water	: log Pow: 4.46 (86 pH: 5 - 8 Method: Partition	
Partiti	1-methylethylidene)bis(4 on coefficient: n- ol/water	: log Pow: 3.242 (7 pH: 7.1	
Partiti	/l phthalate: on coefficient: n- ol/water	: log Pow: 4.46 (86 pH: 5 - 8 Method: Partition	
Partiti	1-methylethylidene)bis(4 on coefficient: n- ol/water	: log Pow: 3.242 (7 pH: 7.1	
Partiti	/l phthalate: on coefficient: n- ol/water	: log Pow: 4.46 (86 pH: 5 - 8 Method: Partition	·
<b>Mobil</b> Mobili	l <b>ity in soil</b>	: No data available	
_	oonents:		
Distrik enviro	1-methylethylidene)bis(4 oution among onmental compartments /l phthalate:	I,1-phenyleneoxymeth : Koc: 445	ylene)]bisoxirane:
enviro 2,2'-[( Distrib enviro	oution among onmental compartments 1-methylethylidene)bis(4 oution among onmental compartments	: Koc: 1.4 I,1-phenyleneoxymeth : Koc: 445	ylene)]bisoxirane:
Distrik enviro 2,2'-[( Distrik	/l phthalate: oution among onmental compartments 1-methylethylidene)bis(4 oution among onmental compartments	: Koc: 1.4 I,1-phenyleneoxymeth : Koc: 445	ylene)]bisoxirane:
dibuty Distrit	I phthalate: pution among pomental compartments	: Koc: 1.4	
	ity in soil	: No data available	

## Other adverse effects





## **RENLAM® 569 US**

Vers 1.1	sion	Revision Date: 11/14/2018		f last issue: 11/30/2017 f first issue: 11/30/2017
	Enviror pathwa	nmental fate and ays	: No data available	
	Results assess	s of PBT and vPvB ment	: No data available	
	Endocr potenti	ine disrupting al	: No data available	
		ed organic bound ns (AOX)	: No data available	
	Hazaro	lous to the ozone lay	r	
		-Depletion Potential	: Regulation: 40 CFR Prote Protection of Stratospheri Substances Remarks: This product ne manufactured with a Clas	ection of Environment; Part 82 c Ozone - CAA Section 602 Class I either contains, nor was s I or Class II ODS as defined by the n 602 (40 CFR 82, Subpt. A, App.A +
		nal ecological ation - Product	: An environmental hazard unprofessional handling c Toxic to aquatic life with le	
	Global (GWP)	warming potential	: No data available	

## SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods	
Waste from residues	<ul> <li>The product should not be allowed to enter drains, water courses or the soil.</li> <li>Do not contaminate ponds, waterways or ditches with chemical or used container.</li> <li>Send to a licensed waste management company.</li> </ul>
Contaminated packaging	<ul> <li>Empty remaining contents.</li> <li>Dispose of as unused product.</li> <li>Do not re-use empty containers.</li> </ul>

## SECTION 14. TRANSPORT INFORMATION

## International Regulations

ΙΑΤΑ

UN/ID No.	: UN 3082
Proper shipping name	: Environmentally hazardous substance, liquid, n.o.s.
	(BISPHENOL A EPOXY RESIN, DIBUTYL PHTHALATE)





Version 1.1	Revision Date: 11/14/2018	SDS Number: 400001012680	Date of last issue: 11/30/2017 Date of first issue: 11/30/2017
		. 0	
	ISS	: 9	
Pa	cking group	: 111	
La	bels	: Miscellaneou	S
	cking instruction (cargo craft)	: 964	
	cking instruction assenger aircraft)	: 964	
	vironmentally hazardous	: yes	
IM	DG		
UN	l number	: UN 3082	
Pro	oper shipping name	: ENVIRONME N.O.S.	NTALLY HAZARDOUS SUBSTANCE, LIQUID,
		(BISPHENOL	A EPOXY RESIN, DIBUTYL PHTHALATE)
Cla	ass	: 9	· · · · · · · · · · · · · · · · · · ·
Pa	cking group	: 111	
La	bels	: 9	
En	1S Code	: F-A, S-F	
Ma	arine pollutant	: yes	

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

Not applicable for product as supplied.

#### **National Regulations**

#### **DOT Classification**

UN/ID/NA number	: UN 3082
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
	(BISPHENOL A EPOXY RESIN, DIBUTYL PHTHALATE)
Class	: 9
Packing group	: III
Labels	: CLASS 9
ERG Code	: 171
Marine pollutant	: yes(BISPHENOL A EPOXY RESIN, DIBUTYL PHTHALATE)
Remarks	<ul> <li>Above applies only to containers over 119 gallons or 450 liters. Not regulated if shipped in packages less than or equal to 119 gallons (450 liters).</li> </ul>

#### Special precautions for user

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

#### **SECTION 15. REGULATORY INFORMATION**

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

#### **CERCLA Reportable Quantity**

Components	CAS-No.	Component RQ	Calculated product RQ
		(lbs)	(lbs)





Version	Revision Date:	SDS Number:	Date of last issue	e: 11/30/2017
1.1	11/14/2018	400001012680	Date of first issue	e: 11/30/2017
dibut	/l phthalate	84-74-2	10	173
	pro-2,3-epoxypropane	106-89-8	100	*
*: Cal	culated RQ exceeds rea	asonably attainable ι	upper limit.	
		Serious eye da Respiratory or	mage or eye irritation	n
		Reproductive to		
SAR	A 313	Reproductive to : The following c	oxicity	ect to reporting levels on 313:

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

dibutyl phthalate	84-74-2
-------------------	---------

#### California Prop. 65

WARNING: This product can expose you to chemicals including 1-chloro-2,3-epoxypropane, which is/are known to the State of California to cause cancer and 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:

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

#### Inventories

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

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

No substances are subject to a Significant New Use Rule.

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

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





# **RENLAM® 569 US**

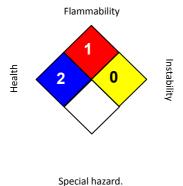
Version	Revi
1.1	11/1

ision Date: 4/2018 SDS Number: 400001012680 Date of last issue: 11/30/2017 Date of first issue: 11/30/2017

# **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	:	11/14/2018
ACGIH OSHA Z-1		USA. ACGIH Threshold Limit Values (TLV) USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA OSHA Z-1 / TWA		8-hour, time-weighted average 8-hour time weighted average

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.

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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





# **RENLAM® 569 US**

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Date of last issue: 11/30/2017 Date of first issue: 11/30/2017

PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE.





Version Revision Date: 1.2 06/26/2017

Product name

te: SDS Number: 400001012681 Date of last issue: 12/07/2016 Date of first issue: 07/06/2016

# SECTION 1. IDENTIFICATION

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 of person responsible for the SDS	:	MSDS@huntsman.com					
Emergency telephone number	:	Chemtrec: (800) 424-9300 or (703) 527-3887					
Recommended use of the chemical and restrictions on use							

: REN® 569-1 US

# Recommended use of the chemical and restrictions on t

Recommended	duse	:	Н	lardener	

# SECTION 2. HAZARDS IDENTIFICATION

# GHS classification in accordance with 29 CFR 1910.1200 Skin corrosion : Category 1B Serious eye damage : Category 1 Skin sensitisation : Category 1 Reproductive toxicity : Category 1B : Category 1 (Respiratory Tract) Specific target organ toxicity repeated exposure (Inhalation) Acute aquatic toxicity : Category 2 Chronic aquatic toxicity : Category 2 GHS label elements Hazard pictograms Signal word : Danger Hazard statements : H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H360 May damage fertility or the unborn child.





REN® 569-1 US		
ersion Revision Date: .2 06/26/2017	SDS Number: 400001012681	Date of last issue: 12/07/2016 Date of first issue: 07/06/2016
	prolonged or re	damage to organs (Respiratory Tract) through peated exposure if inhaled. aquatic life with long lasting effects.
Precautionary statements	: <b>Prevention:</b> P201 Obtain sp P202 Do not ha and understood P260 Do not bu P264 Wash ski P270 Do not ea P272 Contamin the workplace. P273 Avoid rel P280 Wear pro face protection <b>Response:</b> P301 + P330 + induce vomiting P303 + P361 + all contaminate P304 + P340 + and keep comf CENTER/docto P305 + P351 + water for sever and easy to do CENTER/docto P308 + P313 If attention. P363 Wash co P391 Collect sp <b>Storage:</b> P405 Store loc <b>Disposal:</b>	<ul> <li>becial instructions before use.</li> <li>andle until all safety precautions have been read.</li> <li>reathe dust/ fume/ gas/ mist/ vapours/ spray.</li> <li>in thoroughly after handling.</li> <li>at, drink or smoke when using this product.</li> <li>hated work clothing should not be allowed out of ease to the environment.</li> <li>tective gloves/ protective clothing/ eye protection.</li> <li>P331 IF SWALLOWED: Rinse mouth. Do NOT g.</li> <li>P353 IF ON SKIN (or hair): Take off immediated clothing. Rinse skin with water/shower.</li> <li>P310 IF INHALED: Remove person to fresh ai ortable for breathing. Immediately call a POISO or.</li> <li>P338 + P310 IF IN EYES: Rinse cautiously with al minutes. Remove contact lenses, if present a continue rinsing. Immediately call a POISON or.</li> <li>Fexposed or concerned: Get medical advice/</li> <li>skin irritation or rash occurs: Get medical advice intaminated clothing before reuse.</li> <li>pillage.</li> </ul>

#### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture

: Mixture

#### Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Triethylenetetramine, propoxylated	26950-63-0	13 - 30
trientine	112-24-3	13 - 30
4,4'-isopropylidenediphenol	80-05-7	3 - 7





	vision Date: SDS Nu 26/2017 4000010		
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Tetraethylenepentamine	112-57-2	1 - 3
Aminoethylpiperazine	140-31-8	1 - 3
The second	· · · · / · · · · · · · · · · · · · / · · · /	101 I I I I I I I I I I I I I I I I I I

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

General advice	<ul> <li>Move out of dangerous area.</li> <li>Consult a physician.</li> <li>Show this safety data sheet to the doctor in attendance.</li> <li>Do not leave the victim unattended.</li> </ul>
If inhaled	<ul> <li>If unconscious, place in recovery position and seek medical advice.</li> <li>If symptoms persist, call a physician.</li> </ul>
In case of skin contact	<ul> <li>Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.</li> <li>If on skin, rinse well with water.</li> <li>If on clothes, remove clothes.</li> </ul>
In case of eye contact	<ul> <li>Small amounts splashed into eyes can cause irreversible tissue damage and blindness.</li> <li>In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.</li> <li>Continue rinsing eyes during transport to hospital.</li> <li>Remove contact lenses.</li> <li>Protect unharmed eye.</li> <li>Keep eye wide open while rinsing.</li> <li>If eye irritation persists, consult a specialist.</li> </ul>
If swallowed	<ul> <li>Clean mouth with water and drink afterwards plenty of water. Keep respiratory tract clear.</li> <li>Do NOT induce vomiting.</li> <li>Do not give milk or alcoholic beverages.</li> <li>Never give anything by mouth to an unconscious person.</li> <li>If symptoms persist, call a physician.</li> <li>Take victim immediately to hospital.</li> </ul>
Most important symptoms and effects, both acute and delayed	: None known.

#### SECTION 4. FIRST AID MEASURES

#### SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	High volume water jet





Vers 1.2	sion	Revision Date: 06/26/2017		OS Number: 0001012681	Date of last issue: 12/07/2016 Date of first issue: 07/06/2016
	Specifi firefight	c hazards during ting	:	Do not allow run- courses.	off from fire fighting to enter drains or water
	Hazard produc	lous combustion ts	:	No data is availat	ble on the product itself.
	Specifi method	c extinguishing Is	:	No data is availat	ble on the product itself.
	Further	r information	:	must not be disch Fire residues and	ated fire extinguishing water separately. This arged into drains. contaminated fire extinguishing water must accordance with local regulations.
	Specia for firef	l protective equipment ighters	:	Wear self-contain necessary.	ed breathing apparatus for firefighting if

# SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Jse personal protective equipment.	
Environmental precautions	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. f the product contaminates rivers and lakes or dra espective authorities.	
Methods and materials for containment and cleaning up	Soak up with inert absorbent material (e.g. sand, s acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.	ilica gel,

#### SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Advice on safe handling	:	Do not breathe vapours/dust. Avoid 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. Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
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.





Version 1.2	Revision Date: 06/26/2017	SDS Number: 400001012681	Date of last issue: 12/07/2016 Date of first issue: 07/06/2016
Electrica			precautions. llations / working materials must comply with the afety standards.
Mater	rials to avoid	: No materials	to be especially mentioned.

# SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters					
Contains no substances with	Contains no substances with occupational exposure limit values.				
Personal protective equipr	ent				
Respiratory protection	: In the case of vapour formation use a respirator with an approved filter.				
Hand protection					
Remarks	<ul> <li>The suitability for a specific workplace should be discussed with the producers of the protective gloves.</li> </ul>				
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	<ul> <li>Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.</li> </ul>				
Hygiene measures	<ul> <li>When using do not eat or drink.</li> <li>When using do not smoke.</li> <li>Wash hands before breaks and at the end of workday.</li> </ul>				

# SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	blue, clear
Odour	:	amine-like
Odour Threshold	:	No data is available on the product itself.
pH	:	No data is available on the product itself.
Freezing point	:	No data is available on the product itself.
Melting point		No data is available on the product itself.
Boiling point		No data is available on the product itself.
Flash point	:	> 113 °C Method: closed cup





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Evap	oration rate		No data is availa	ble on the product itself.			
				-			
	mability (solid, gas)			ble on the product itself.			
Flam	mability (liquids)	:	: No data is available on the product itself.				
Uppe	r explosion limit	:	: No data is available on the product itself.				
Lowe	r explosion limit	:	No data is availa	ble on the product itself.			
Vapo	ur pressure	:	0.018662 hPa (2	5 °C)			
Relat	ive vapour density	:	No data is availa	ble on the product itself.			
Relat	ive density	:	0.96 - 0.99				
Dens	itv	:	No data is availa	ble on the product itself.			
		-					
	pility(ies) ater solubility	:	completely misci	ble			
So	lubility in other solvents	:	No data is availa	ble on the product itself.			
	ion coefficient: n- ool/water	:	No data is availa	ble on the product itself.			
	ignition temperature	:	No data is availa	ble on the product itself.			
Therr	mal decomposition	:	No data is availa	ble on the product itself.			
	Accelerating mposition temperature T)	:	No data is availa	ble on the product itself.			
Visco	osity	:	No data is availa	ble on the product itself.			
Explo	osive properties	:	No data is availa	ble on the product itself.			
Oxidi	zing properties	:	No data is availa	ble on the product itself.			
Partic	cle size	:	No data is availa	ble on the product itself.			

#### SECTION 10. STABILITY AND REACTIVITY

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





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# SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	: No data is available on the product itself.	
Acute toxicity Acute oral toxicity - Product	: Acute toxicity estimate : > 5,000 mg/kg Method: Calculation method	
Components: 4,4'-isopropylidenediphenol: Acute inhalation toxicity	<ul> <li>LC50 (Rat, male and female): &gt; 170 mg/r Exposure time: 6 h Test atmosphere: dust/mist</li> </ul>	m3
Acute dermal toxicity - Product	: Acute toxicity estimate : 4,438 mg/kg Method: Calculation method	

Acute toxicity (other routes of : No data available administration)

#### Skin corrosion/irritation

#### Product:

Remarks: Extremely corrosive and destructive to tissue.

#### Serious eye damage/eye irritation

#### Product:

Remarks: May cause irreversible eye damage.

#### Respiratory or skin sensitisation

#### Product:

Remarks: Causes sensitisation.

Assessment:

No data available

#### Germ cell mutagenicity

#### Components:

Triethylenetetramine, propoxylated: Genotoxicity in vitro : T

: Test Type: In vitro mammalian cell gene mutation test Species: Chinese hamster ovary cells Method: OECD Test Guideline 476 Result: negative

Test Type: Ames test Species: Salmonella typhimurium Method: OECD Test Guideline 471 Result: positive

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	00-100				
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		Species: Chin	romosome aberration test in vitro ese hamster ovary cells D Test Guideline 473 ve		
Meta		Metabolic activ Method: OEC	concentration: 0 - 200 μg/L letabolic activation: negative lethod: OECD Test Guideline 482 cesult: negative		
	opropylidenediphenol: toxicity in vitro	: Metabolic acti Result: negati	vation: with and without metabolic activation ve		
	ethylenepentamine: toxicity in vitro		vation: with and without metabolic activation D Test Guideline 479 e		
			vation: with and without metabolic activation D Test Guideline 471 e		
			vation: negative D Test Guideline 482 ve		
	ethylpiperazine: toxicity in vitro		vation: with and without metabolic activation D Test Guideline 471		
			vation: with and without metabolic activation D Test Guideline 476 ve		
			vation: negative D Test Guideline 482 ve		
trientir	oonents: ne: toxicity in vivo	Dose: 0 - 600	D Test Guideline 474		
	opropylidenediphenol: toxicity in vivo	: Method: OECI Result: negati	D Test Guideline 474 ve		
Tetrae	ethylenepentamine:				





Versio 1.2	n Revision Date: 06/26/2017	SDS Number: 400001012681	Date of last issue: 12/07/2016 Date of first issue: 07/06/2016	
G	Senotoxicity in vivo		te: Intraperitoneal injection Test Guideline 474	
	minoethylpiperazine: Genotoxicity in vivo	<ul> <li>Application Route: Intraperitoneal injection</li> <li>Dose: 175 - 560 mg/kg</li> <li>Method: OECD Test Guideline 474</li> <li>Result: negative</li> </ul>		
с	components:			
T G	riethylenetetramine, propoxyl Serm cell mutagenicity- ssessment		al or mammalian cell cultures did not show ts.	
	Germ cell mutagenicity- Assessment	: No data availabl	e	
с	arcinogenicity			
T S A D F M R S A U D F M 4 S A U F	<b>Components:</b> ientine: species: Mouse, (male) spplication Route: Dermal lose: 42 mg/kg requency of Treatment: 3 day dethod: OECD Test Guideline cesult: negative species: Mouse, (male) spplication Route: Dermal exposure time: 104 weeks lose: 16.8 mg/kg requency of Treatment: 3 day dethod: OECD Test Guideline ,4'-isopropylidenediphenol: species: Rat, (male and femal spplication Route: Oral exposure time: 103 weeks requency of Treatment: 7 dai exposure time: 7 dai cesult: negative	9 451 ys/week 9 451 le)		
	Carcinogenicity - ssessment	: No data availabl	e	
L	ARC		nis product present at levels greater than or entified as probable, possible or confirmed by IARC.	
C	OSHA		nis product present at levels greater than or OSHA's list of regulated carcinogens.	
M	NTP	No component of the	nis product present at levels greater than or	





<b>NLIN</b>	303-1 03		
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		equal to 0.1% is i by NTP.	dentified as a known or anticipated carcinogen
Rep	roductive toxicity		
Con	ponents:		
	thylenetetramine, propo cts on fertility	: Test Type: Fer Species: Rat, r Strain: wistar Application Ro Dose: 100, 300 General Toxici 750 mg/kg boo General Toxici mg/kg body we	male and female ute: Ingestion 0 and 750 milligram per kilogram ty - Parent: No-observed-effect level: Measured ly weight ty F1: No-observed-effect level: Measured 750
4,4'-	isopropylidenediphenol:	Species: Rat, I Application Ro Method: OEC	) Test Guideline 416 ptoxic effects and adverse effects on the
Con	iponents:		
	thylenetetramine, propos		
	cts on foetal elopment	General Toxici Measured 300 Developmenta Measured 750	
trien	tine:		
		> 750 mg/kg b Method: OECI	ty Maternal: No observed adverse effect level:
		125 mg/kg boo Method: OEC	ute: Dermal ty Maternal: No observed adverse effect level:
4,4'-	isopropylidenediphenol:	Species: Rat 1	emale

Species: Rat, female





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REN® 569-1	US			
	sion Date: 3/2017	SDS Number: 400001012681		issue: 12/07/2016 issue: 07/06/2016
		General To < 160 mg/k Method: OE	Route: Oral xicity Maternal: No o g body weight CD Test Guideline teratogenic effects	observed adverse effect level: 416
Tetraethylene	epentamine:	Application General To body weigh Method: OE		observed-effect level: 50 mg/kg 414
		General To 750 mg/kg Method: OE	Route: Oral	observed adverse effect level: 414
Components Triethyleneter Reproductive Assessment	tramine, propoxy	: No evidenc	e of adverse effects opment, based on a	on sexual function and fertility, nimal experiments.
4,4'-isopropyl Reproductive Assessment	idenediphenol: toxicity -		nce of adverse effe ed on animal experi	cts on sexual function and iments.
Aminoethylpi Reproductive Assessment				ects on sexual function and , based on animal experiments.
STOT - singl	e exposure			

#### Components:

4,4'-isopropylidenediphenol: Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

#### STOT - repeated exposure

#### Components:

Triethylenetetramine, propoxylated: Exposure routes: Ingestion Target Organs: Kidney Assessment: No significant health effects observed at a concentration of 300mg/kg bw/day.

Aminoethylpiperazine: Exposure routes: Inhalation Target Organs: Respiratory Tract Assessment: Causes damage to organs through prolonged or repeated exposure.





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#### Repeated dose toxicity

#### Components:

Triethylenetetramine, propoxylated: Species: Rat, male and female NOAEL: 300 mg/kg Application Route: Ingestion Exposure time: 43 - 44 Days Method: OECD Test Guideline 422

trientine: Species: Rat, male and female NOAEL: 50 mg/kg/d Application Route: Ingestion Exposure time: 26 Weeks Number of exposures: 7 d Method: Subchronic toxicity

4,4'-isopropylidenediphenol: Species: Dog, male and female : 75 mg/kg, 10 mg/m3 Application Route: Ingestion Test atmosphere: dust/mist Exposure time: 2,160 h Number of exposures: 7 d Method: Subchronic toxicity

Species: Rat, male and female LOAEL: 600 mg/kg Application Route: Ingestion Exposure time: 672 h Number of exposures: 7 d Method: Subchronic toxicity

Tetraethylenepentamine: Species: Rat, male and female NOAEL: 50 mg/kg/d Application Route: Ingestion Exposure time: 26 Weeks Method: Subchronic toxicity

Species: Rabbit, male and female NOAEL: 50 mg/kg/d Application Route: Skin contact Exposure time: 744 h Number of exposures: 5 d Method: Subacute toxicity

Aminoethylpiperazine: Species: Rat, male and female NOAEL: 152 mg/kg/d Application Route: Oral





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Exposure time: 28 d Method: OECD Test Guideline 422

Species: Rat, male and female NOAEL: > 1000 mg/kg/d Application Route: Skin contact Exposure time: 29 d Number of exposures: 6h/application, 5d/week Method: OECD Test Guideline 410

Species: Rat, male and female : 0.2 mg/m3 Application Route: Inhalation Exposure time: 90 d Number of exposures: 6h/d, 5d/week Method: OECD Test Guideline 413 Target Organs: Respiratory Tract Assessment: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

Species: Rat, male and female : 53.3 mg/m3 Application Route: Inhalation Exposure time: 90 d Number of exposures: 6h/d, 5d/week Method: OECD Test Guideline 413

Repeated dose toxicity - : No data available Assessment

#### Aspiration toxicity

No data available

#### Experience with human exposure

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

# Toxicology, Metabolism, Distribution

No data available

#### Neurological effects No data available





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#### Further information

Product:

Remarks: No data available

# SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

# Components:

Triethylenetetramine, propoxylate	d:
Toxicity to fish :	LC50 (Oncorhynchus mykiss (rainbow trout)): Measured > 4.1 mg/l Exposure time: 96 h Test Type: semi-static test Analytical monitoring: yes Method: OECD Test Guideline 203
trientine: Toxicity to fish :	LC50 (Pimephales promelas (fathead minnow)): 330 mg/l Exposure time: 96 h Test Type: static test Test substance: Fresh water Method: Fish Acute Toxicity Test
4,4'-isopropylidenediphenol: Toxicity to fish :	LC50 (Oncorhynchus mykiss (rainbow trout)): 7.5 mg/l Exposure time: 96 h
Tetraethylenepentamine: Toxicity to fish :	LC50 (Poecilia reticulata (guppy)): 420 mg/l Exposure time: 96 h Test Type: semi-static test Test substance: Fresh water Method: Directive 67/548/EEC, Annex V, C.1.
Aminoethylpiperazine: Toxicity to fish :	LC50: 2,190 mg/l Exposure time: 96 h Test Type: static test Test substance: Fresh water
Components: Triethylenetetramine, propoxylate Toxicity to daphnia and other : aquatic invertebrates	d: EC50 (Daphnia magna (Water flea)): Measured 48 mg/l Exposure time: 48 h Test Type: static test

Analytical monitoring: yes

Method: OECD Test Guideline 202





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	tine: city to daphnia and other tic invertebrates	: EC50 (Daphnia magna (Water flea)): 31.1 mg/l Exposure time: 48 h Test Type: static test Test substance: Fresh water Method: Directive 67/548/EEC, Annex V, C.2.	
Toxi	isopropylidenediphenol: city to daphnia and other atic invertebrates	: EC50: 3.9 - 10.2 mg/l Exposure time: 48 h	
		(Ceriodaphnia dubia (Water flea)):	
Toxi	aethylenepentamine: city to daphnia and other atic invertebrates	<ul> <li>EC50 (Daphnia magna (Water flea)): 24.1 mg/l Exposure time: 48 h Test Type: static test Test substance: Fresh water Method: Tested according to Annex V of Directive 67/548/EEC.</li> </ul>	
Toxi	noethylpiperazine: city to daphnia and other atic invertebrates	<ul> <li>EC50 (Daphnia magna (Water flea)): 58 mg/l Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202 Remarks: Harmful to aquatic organisms, may caus adverse effects in the aquatic environment.</li> </ul>	se long-term
Com	ponents:		
Triet	hylenetetramine, propoxy city to algae	<ul> <li>ated:</li> <li>EC50 (Pseudokirchneriella subcapitata (algae)): M mg/l</li> <li>Exposure time: 72 h</li> <li>Test Type: static test</li> <li>Analytical monitoring: yes</li> <li>Method: OECD Test Guideline 201</li> </ul>	leasured 4.1
		ErC10 (Pseudokirchneriella subcapitata (algae)): N 0.11 mg/l Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201	Measured
trien Toxid	tine: city to algae	: ErC50 (Selenastrum capricornutum (green algae)) Exposure time: 72 h Test Type: semi-static test Test substance: Fresh water Method: OECD Test Guideline 201	: 20 mg/l
	isopropylidenediphenol: city to algae	: EC50 (Selenastrum capricornutum (green algae)): mg/l	2.5 - 3.1





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			Exposure time: 96	3 h
	aethylenepentamine: city to algae	:	ErC50 (Selenastri Exposure time: 72 Test Type: static t Test substance: F Method: OECD Te	est resh water
	noethylpiperazine: city to algae	:	EC50 (Selenastru mg/l Exposure time: 72 Test substance: F Method: OECD Te	resh water
M-Fa toxic	actor (Acute aquatic ity)	:	No data available	
4,4'-	nponents: isopropylidenediphenol: city to fish (Chronic sity)	:	Exposure time: 44 Test Type: flow-th Test substance: F Method: Fish Life	rough test resh water
trien Toxi aqua	tine: city to daphnia and other atic invertebrates onic toxicity)	:	EC10 (Daphnia m Exposure time: 21 Test Type: semi-s Test substance: F Method: OECD Te	static test Fresh water
4,4'-	<b>ponents:</b> isopropylidenediphenol: actor (Chronic aquatic sity)	:	1	
Con	nponents:			
	hylenetetramine, propoxy city to microorganisms		d: EC10 (activated s Exposure time: 3 Test Type: static t Test substance: F Method: OECD Te	h lest resh water
trien Toxi	tine: city to microorganisms	:	EC50 (activated s Exposure time: 0. Test Type: static t Test substance: F	5 h jest





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	ethylenepentamine: ity to microorganisms	:	EC50: 97.3 mg/l Exposure time: 2 Test Type: static Test substance: F	test
Amin Toxic	ponents: oethylpiperazine: ity to soil dwelling hisms	:	Exposure time: 5	ida (earthworms)): 712 mg/kg 6 d est Guideline 222
			Exposure time: 5	etida (earthworms)): 500 mg/kg 6 d est Guideline 222
Plant	toxicity	:	No data available	•
Sedir	ment toxicity	:	No data available	•
	tity to terrestrial	:	No data available	
	oxicology Assessment aquatic toxicity	:	No data available	1
4,4'-is	ponents: sopropylidenediphenol: nic aquatic toxicity	:	Toxic to aquatic li	ife with long lasting effects.
Toxic	ity Data on Soil	:	No data available	
	r organisms relevant to nvironment	:	No data available	1
Persi	istence and degradabil	ity		
<u>Com</u> Trieth	ponents: nylenetetramine, propoxy egradability	-	Inoculum: Domes Concentration: 10 Result: Not readil Biodegradation: Exposure time: 20	00 mg/l y biodegradable. 4 %
trient Biode	ine: egradability	:	Inoculum: activate Result: Not readil Biodegradation: Exposure time: 10	y biodegradable. 0 %

Method: OECD Test Guideline 301D





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Version 1.2	Revision Date: 06/26/2017	SDS Nur 4000010		Date of last issue: 12/07/2016 Date of first issue: 07/06/2016
		Resu Biode Expo	egradation: sure time: 8	ly biodegradable. 20 %
	opropylidenediphenol: gradability	Biode	lt: Not readi egradation: sure time: 2	
	ethylenepentamine: gradability	Resu Biode Expo	Ilum: activat Ilt: Not biode egradation: sure time: 8 od: Inherent	egradable 17 %
	ethylpiperazine: gradability	Resu Biode Expo	egradation: sure time: 2	ly biodegradable. 0 %
Amino Bioch	ponents: bethylpiperazine: emical Oxygen ind (BOD)	: 5 mg Incub	/I bation time:	5 d
Amino		: 560 r : No da	ng/l ata available	•
ThOD	1	: No da	ata available	9
BOD/	ThOD	: No da	ata available	•
Dissol (DOC	lved organic carbon )	: No da	ata available	
	co-chemical /ability	: No da	ata available	9
Trieth	oonents: ylenetetramine, propoxy ity in water	: Degra Meth Degra	od: OECD 1 adation half	life(DT50): > 1 yr (25 °C) pH: 4 <sup>-</sup> est Guideline 111 life(DT50): > 1 yr (25 °C) pH: 7 <sup>-</sup> est Guideline 111





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				life(DT50): > 1 yr (25 °C) pH: 9 est Guideline 111
Com	ponents:			
	oethylpiperazine: odegradation	:	Test Type: Air Degradation (dire	ect photolysis): 50 %
			Test Type: Water	
Impa Treat	ct on Sewage ment	:	No data available	2
Bioa	ccumulative potential			
Amin	ponents: oethylpiperazine: ccumulation	:	Species: Fish Remarks: Does n	ot bioaccumulate.
Com	ponents:			
Trieth Partit	nylenetetramine, propoxy ion coefficient: n- iol/water		d: log Pow: -2.42	
	ine: ion coefficient: n- iol/water	:	log Pow: -2.65 (2 Method: OECD T	0 °C) est Guideline 117
Partit	ethylenepentamine: ion coefficient: n- iol/water	:	log Pow: -3.16	
Partit	oethylpiperazine: ion coefficient: n- iol/water	:	log Pow: -1.48 (2	0 °C)
	lity in soil			
Mobil	lity	:	No data available	•
	ponents:			
envire	bution among onmental compartments	:	Koc: 1584.9 - 501	12Method: OECD Test Guideline 106
Distri envire	ethylenepentamine: bution among onmental compartments		Koc: 3.2 - 3.7Met	hod: OECD Test Guideline 106
Aminoethylpiperazine: Distribution among		:	Koc: ca. 37000	
	onmental compartments lity in soil	:	No data available	•





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	Other adverse effects Environmental fate and pathways	: No data available	
	Components: Triethylenetetramine, pr Results of PBT and vPv assessment	xylated: : This substance is not considered to be pers bioaccumulating and toxic (PBT).	sistent,
	Endocrine disrupting potential	: No data available	
	Adsorbed organic bound halogens (AOX)	: No data available	
	Hazardous to the ozon	ayer	
	Ozone-Depletion Potent	<ul> <li>Regulation: 40 CFR Protection of Environm Protection of Stratospheric Ozone - CAA Se Substances</li> <li>Remarks: This product neither contains, no manufactured with a Class I or Class II OD U.S. Clean Air Act Section 602 (40 CFR 82 B).</li> </ul>	ection 602 Class I r was S as defined by the
	Additional ecological information - Product	<ul> <li>An environmental hazard cannot be exclude unprofessional handling or disposal.</li> <li>Toxic to aquatic life with long lasting effects</li> </ul>	
	Global warming potentia (GWP)	: No data available	

# SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods		
Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

# SECTION 14. TRANSPORT INFORMATION

#### International Regulations

# ΙΑΤΑ





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UN/ID	) No.	: UN 2735			
Proper shipping name		<ul> <li>Polyamines, liquid, corrosive, n.o.s. (AMINOETHYLPIPERAZINE, TETRAETHYLENE PENTAMINE)</li> </ul>			
Class		: 8			
Packi	ng group	: 11			
Labels	S	: Corrosive			
Packi aircra	ng instruction (cargo ft)	: 855			
	ng instruction enger aircraft)	: 851			
IMDG	ì				
UN nu	umber	: UN 2735			
Proper shipping name			, LIQUID, CORROSIVE, N.O.S. IE TETRAMINE, TETRAETHYLENE		
Class		: 8			
	ng group	: 11			
Labels	-	: 8			
EmS (		: F-A, S-B			
Warm	e pollutant	: yes			

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

Not applicable for product as supplied.

# National Regulations

DOT Classification	
UN/ID/NA number	: UN 2735
Proper shipping name	<ul> <li>POLYAMINES, LIQUID, CORROSIVE, N.O.S. (AMINOETHYLPIPERAZINE, TETRAETHYLENE PENTAMINE)</li> </ul>
Class	: 8
Packing group	: 11
Labels	: CORROSIVE
ERG Code	: 153
Marine pollutant	: yes(TRIETHYLENE TETRAMINE PROPOXYLATED, 4,4'- ISOPROPYLIDENEDIPHENOL)

# SECTION 15. REGULATORY INFORMATION

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

SARA 311/312 Hazards	Acute Health Hazard		
SARA 313	The following components are subject to reporting levels established by SARA Title III, Section 313:		
	4,4'- isopropylidenediphenol	80-05-7	5.829 %





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

# California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

4,4'-isopropylidenediphenol

# nol 80-05-7

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

<ul> <li>The formulation contains substances listed on the Swiss Inventory, On the inventory, or in compliance with the inventory</li> </ul>
All components of this product are on the Canadian DSL
: On the inventory, or in compliance with the inventory
Not in compliance with the inventory
: On the inventory, or in compliance with the inventory
: On the inventory, or in compliance with the inventory
Not in compliance with the inventory
: On the inventory, or in compliance with the inventory
: On the inventory, or in compliance with the inventory
: On the inventory, or in compliance with the inventory

#### Inventories

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

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

No substances are subject to a Significant New Use Rule.

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

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





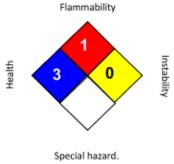
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# SECTION 16. OTHER INFORMATION

# 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

: 06/26/2017

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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.

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Product name

Version Revision Date: 1.2 12/07/2016

n Date: SDS Number: 016 400001012682 Date of last issue: 07/06/2016 Date of first issue: 01/15/2016

# SECTION 1. IDENTIFICATION

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 of person responsible for the SDS	:	MSDS@huntsman.com				
Emergency telephone number	:	Chemtrec: (800) 424-9300 or (703) 527-3887				
Recommended use of the chemical and restrictions on use						

: Hardener

: REN® 569-2 US

# **SECTION 2. HAZARDS IDENTIFICATION**

Recommended use

# GHS classification in accordance with 29 CFR 1910.1200 Skin corrosion : Category 1B Serious eye damage Category 1 Skin sensitisation : Category 1 Reproductive toxicity : Category 2 Specific target organ toxicity : Category 1 (Respiratory Tract) - repeated exposure (Inhalation) Acute aquatic toxicity : Category 3 Chronic aquatic toxicity : Category 3 **GHS** label elements Hazard pictograms Signal word : Danger : H314 Causes severe skin burns and eye damage. Hazard statements H317 May cause an allergic skin reaction. H361 Suspected of damaging fertility or the unborn child.





Product name

Version **Revision Date:** 1.3 07/18/2017

Date of last issue: 12/07/2016 Date of first issue: 01/15/2016

# **SECTION 1. IDENTIFICATION**

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

: Hardener

: REN® 569-2 US

SDS Number:

400001012682

# **SECTION 2. HAZARDS IDENTIFICATION**

Recommended use

# GHS classification in accordance with 29 CFR 1910.1200 Skin corrosion : Category 1B Serious eye damage Category 1 Skin sensitisation : Category 1 Reproductive toxicity : Category 1B Specific target organ toxicity : Category 1 (Respiratory Tract) - repeated exposure (Inhalation) Acute aquatic toxicity : Category 3 Chronic aquatic toxicity : Category 3 **GHS** label elements Hazard pictograms Signal word : Danger : H314 Causes severe skin burns and eye damage. Hazard statements H317 May cause an allergic skin reaction. H360 May damage fertility or the unborn child.

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Version 1.3	Revision Date: 07/18/2017	SDS Number: 400001012682	Date of last issue: 12/07/2016 Date of first issue: 01/15/2016
		prolonged or re	lamage to organs (Respiratory Tract) through peated exposure if inhaled. o aquatic life with long lasting effects.
Preca	autionary statements	<ul> <li>Prevention: P201 Obtain sp P202 Do not ha and understood P260 Do not br P264 Wash ski P270 Do not ea P272 Contamin the workplace. P273 Avoid rela P280 Wear pro face protection <b>Response:</b> P301 + P330 + induce vomiting P303 + P361 + all contaminate P304 + P340 + and keep comf CENTER/docto P305 + P351 + water for sever and easy to do CENTER/docto P308 + P313 If attention. P333 + P313 If attention. P363 Wash con <b>Storage:</b> P405 Store loct <b>Disposal:</b> P501 Dispose of</li> </ul>	<ul> <li>becial instructions before use.</li> <li>andle until all safety precautions have been read</li> <li>eathe dust/ fume/ gas/ mist/ vapours/ spray.</li> <li>n thoroughly after handling.</li> <li>at, drink or smoke when using this product.</li> <li>hated work clothing should not be allowed out of</li> <li>ease to the environment.</li> <li>tective gloves/ protective clothing/ eye protection</li> <li>P331 IF SWALLOWED: Rinse mouth. Do NOT</li> <li>P353 IF ON SKIN (or hair): Take off immediatel</li> <li>d clothing. Rinse skin with water/shower.</li> <li>P310 IF INHALED: Remove person to fresh air ortable for breathing. Immediately call a POISON</li> <li>pr.</li> <li>P338 + P310 IF IN EYES: Rinse cautiously with al minutes. Remove contact lenses, if present</li> <li>Continue rinsing. Immediately call a POISON or.</li> <li>exposed or concerned: Get medical advice/</li> <li>skin irritation or rash occurs: Get medical advice/</li> </ul>

None known.

#### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture

: Mixture

# Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
4,4'-isopropylidenediphenol	80-05-7	7 - 13
Tetraethylenepentamine	112-57-2	3 - 7
Aminoethylpiperazine	140-31-8	3 - 7

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





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#### SECTION 4. FIRST AID MEASURES General advice Move out of dangerous area. 5 Consult a physician. Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended. If inhaled : If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician. 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. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist. If swallowed : Clean mouth with water and drink afterwards plenty of water. Keep respiratory tract clear. Do NOT induce vomiting. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital. Most important symptoms : None known. and effects, both acute and delayed

# SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	1	No data is available on the product itself.
Unsuitable extinguishing media	2	High volume water jet
Specific hazards during firefighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
		No data is available on the product itself.





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Hazardous combustion products		1	No data is available on the product itself.		
				No hazardous cor	nbustion products are known
	Specific extinguishing methods			No data is available on the product itself.	
	Further	information	:	<ul> <li>Collect contaminated fire extinguishing water separately. The must not be discharged into drains.</li> <li>Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.</li> </ul>	
	Special for firef	protective equipment ighters	:	Wear self-contain necessary.	ed breathing apparatus for firefighting if

# SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	1	Use personal protective equipment.
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.
Methods and materials for containment and cleaning up	:	Neutralise with acid. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

# SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	•	Normal measures for preventive fire protection.
Advice on safe handling		Do not breathe vapours/dust. Avoid 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. Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
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.





REN®	569-2	US	

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			precautions. Illations / working materials must comply with the safety standards.
	er information on ge stability	: No decompos	sition if stored and applied as directed.

# SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters				
Contains no substances with c	ccup	bational exposure limit values.		
Personal protective equipme	ent			
Respiratory protection		No personal respiratory protective equipment normally required.		
Respiratory protection		In the case of vapour formation use a respirator with an approved filter.		
Hand protection Remarks		The suitability for a specific workplace should be discussed with the producers of the protective gloves.		
Eye protection	١	Eye wash bottle with pure water Tightly fitting safety goggles Wear face-shield and protective suit for abnormal processing problems.		
Skin and body protection	(	Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.		
Hygiene measures	١	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.		

# SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	blue, clear
Odour	:	No data is available on the product itself.
Odour Threshold	:	No data is available on the product itself.
рН	:	11.4
Freezing point	:	No data is available on the product itself.
Melting point		No data is available on the product itself.
Boiling point		No data is available on the product itself.



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# **REN® 569-2 US**

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Flash	n point	:	113 °C Method: Pens	ky-Martens closed cup, closed cup
Evap	oration rate	:	No data is av	ailable on the product itself.
Flam	mability (solid, gas)	:	No data is av	ailable on the product itself.
Flam	mability (liquids)	:	No data is av	ailable on the product itself.
	er explosion limit / Upper nability limit	:	No data is av	ailable on the product itself.
	er explosion limit / Lower nability limit	:	No data is av	ailable on the product itself.
Vapo	our pressure	:	0.018662 hPa	a (25 °C)
Relat	ive vapour density	:	No data is av	ailable on the product itself.
Relat	tive density	:	0.94 - 0.97	
Dens	ity	:	No data is av	ailable on the product itself.
	bility(ies) ater solubility	:	completely m	scible
So	lubility in other solvents	:	No data is av	ailable on the product itself.
	tion coefficient: n- nol/water	:	No data is av	ailable on the product itself.
	ignition temperature	:	No data is av	ailable on the product itself.
Therr	mal decomposition	:	No data is av	ailable on the product itself.
	Accelerating mposition temperature T)	:	No data is av	ailable on the product itself.
Visco	osity	:	No data is av	ailable on the product itself.
Explo	osive properties	÷	No data is av	ailable on the product itself.
Oxidi	zing properties	:	No data is av	ailable on the product itself.
Partic	cle size	:	No data is av	ailable on the product itself.

# SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No decomposition if stored and applied as directed.
Chemical stability	: No decomposition if stored and applied as directed.
Possibility of hazardous reactions	: No decomposition if stored and applied as directed.
Conditions to avoid	: No data available





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# SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	:	No data is available on the product itself.
Acute toxicity		
Acute oral toxicity - Product		Acute toxicity estimate : > 5,000 mg/kg Method: Calculation method
Components:		
4,4'-isopropylidenediphenol:		

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Acute inhalation toxicity	1	LC50 (Rat, male and female): > 170 mg/m3 Exposure time: 6 h Test atmosphere: dust/mist		
Acute dermal toxicity - Product		Acute toxicity estimate : > 5,000 mg/kg Method: Calculation method		

Acute toxicity (other routes of	ŝ	No data available	
administration)			

# Skin corrosion/irritation

#### Product:

Remarks: Extremely corrosive and destructive to tissue.

#### Serious eye damage/eye irritation

#### Product:

Remarks: May cause irreversible eye damage.

#### Respiratory or skin sensitisation

#### Product:

Remarks: Causes sensitisation.

Assessment:	No data available
o	•

# Germ cell mutagenicity

# **Components:**

4,4'-isopropylidenediphenol: Genotoxicity in vitro	: Metabolic activation: with and without metabolic activa Result: negative	ation
Tetraethylenepentamine: Genotoxicity in vitro	: Metabolic activation: with and without metabolic activa Method: OECD Test Guideline 479 Result: positive	ation





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Version 1.3	Revision Date: 07/18/2017	SDS Number 40000101268		t issue: 12/07/2016 t issue: 01/15/2016
			DECD Test Guideline	without metabolic activation e 471
			activation: negative DECD Test Guideline gative	
	Aminoethylpiperazine: Genotoxicity in vitro	Metabolic	DECD Test Guideline	without metabolic activation e 471
			DECD Test Guideline	without metabolic activation e 476
			activation: negative DECD Test Guideline gative	
Comm	ononto			
4,4'-is	onents: opropylidenediphenol: oxicity in vivo	: Method: 0 Result: ne	DECD Test Guideline	e 474
	thylenepentamine: oxicity in vivo		n Route: Intraperitor DECD Test Guideline gative	
	ethylpiperazine: oxicity in vivo	Dose: 175	n Route: Intraperitor 5 - 560 mg/kg DECD Test Guideline egative	
Carcii	nogenicity			
	onents:			
4,4'-is Specie Applic Expos Freque	opropylidenediphenol: es: Rat, (male and fema ation Route: Oral ure time: 103 weeks ency of Treatment: 7 da :: negative			
	ogenicity - sment	: No data a	vailable	
IARC		equal to 0.19		esent at levels greater than or bable, possible or confirmed





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	ACGIH			is identified as a car	ent at levels greater than or cinogen or potential
	OSHA				ent at levels greater than or regulated carcinogens.
	NTP				ent at levels greater than or own or anticipated carcinogen
I	Reprodu	ctive toxicity			
10	Compon				
	4,4'-isopr Effects or	opylidenediphenol: n fertility	Application Method: OE Result: Eml	at, male and female Route: Oral ECD Test Guideline oryotoxic effects and ere detected.	416 I adverse effects on the
V. <del>.</del>	Compon				
l	4,4'-isopr Effects or developm		General To < 160 mg/k Method: OE	Route: Oral	bserved adverse effect level: 416
Ī	Tetraethy	lenepentamine:			
			Application General To body weigh Method: OE		observed-effect level: 50 mg/kg 414
			General To 750 mg/kg Method: OE	Route: Oral	bserved adverse effect level: 414
	Compon	ents:			
		opylidenediphenol: stive toxicity - ent		nce of adverse effec ed on animal experi	ets on sexual function and ments.
		ylpiperazine: tive toxicity - ent			cts on sexual function and based on animal experiments.





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#### STOT - single exposure

#### Components:

4,4'-isopropylidenediphenol:

Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

#### STOT - repeated exposure

#### Components:

Aminoethylpiperazine: Exposure routes: Inhalation Target Organs: Respiratory Tract Assessment: Causes damage to organs through prolonged or repeated exposure.

#### **Repeated dose toxicity**

#### Components:

4,4'-isopropylidenediphenol: Species: Dog, male and female NOEC: 75 mg/kg, 10 mg/m3 Application Route: Ingestion Test atmosphere: dust/mist Exposure time: 2,160 h Number of exposures: 7 d Method: Subchronic toxicity

Species: Rat, male and female LOAEL: 600 mg/kg Application Route: Ingestion Exposure time: 672 h Number of exposures: 7 d Method: Subchronic toxicity

Tetraethylenepentamine: Species: Rat, male and female NOAEL: 50 mg/kg/d Application Route: Ingestion Exposure time: 26 Weeks Method: Subchronic toxicity

Species: Rabbit, male and female NOAEL: 50 mg/kg/d Application Route: Skin contact Exposure time: 744 h Number of exposures: 5 d Method: Subacute toxicity

Aminoethylpiperazine: Species: Rat, male and female NOAEL: 152 mg/kg/d





# **REN® 569-2 US**

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Application Route: Oral Exposure time: 28 d Method: OECD Test Guideline 422

Species: Rat, male and female NOAEL: > 1000 mg/kg/d Application Route: Skin contact Exposure time: 29 d Number of exposures: 6h/application, 5d/week Method: OECD Test Guideline 410

Species: Rat, male and female NOEC: 0.2 mg/m3 Application Route: Inhalation Exposure time: 90 d Number of exposures: 6h/d, 5d/week Method: OECD Test Guideline 413 Target Organs: Respiratory Tract Assessment: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

Species: Rat, male and female NOEC: 53.3 mg/m3 Application Route: Inhalation Exposure time: 90 d Number of exposures: 6h/d, 5d/week Method: OECD Test Guideline 413

Repeated dose toxicity - : No data available Assessment

# Aspiration toxicity

No data available

#### Experience with human exposure

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

#### **Toxicology, Metabolism, Distribution** No data available

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# Neurological effects

No data available

#### **Further information**

# Product:

Remarks: No data available

#### SECTION 12. ECOLOGICAL INFORMATION

# Ecotoxicity

# Components:

4,4'-isopropylidenediphenol: Toxicity to fish	•	LC50 (Oncorhynchus mykiss (rainbow trout)): 7.5 mg/l Exposure time: 96 h
Tetraethylenepentamine: Toxicity to fish	:	LC50 (Poecilia reticulata (guppy)): 420 mg/l Exposure time: 96 h Test Type: semi-static test Test substance: Fresh water Method: Directive 67/548/EEC, Annex V, C.1.
Aminoethylpiperazine: Toxicity to fish	:	LC50: 2,190 mg/l Exposure time: 96 h Test Type: static test Test substance: Fresh water
<b>Components:</b> 4,4'-isopropylidenediphenol: Toxicity to daphnia and other aquatic invertebrates	:	EC50: 3.9 - 10.2 mg/l Exposure time: 48 h (Ceriodaphnia dubia (Water flea)):
Tetraethylenepentamine: Toxicity to daphnia and other aquatic invertebrates		EC50 (Daphnia magna (Water flea)): 24.1 mg/l Exposure time: 48 h Test Type: static test Test substance: Fresh water Method: Tested according to Annex V of Directive 67/548/EEC.
Aminoethylpiperazine: Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 58 mg/l Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202





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ersion 3	Revision Date: 07/18/2017	SDS Numbe 4000010126		issue: 12/07/2016 issue: 01/15/2016
			s: Harmful to aquatic o effects in the aquatic e	rganisms, may cause long-tern environment.
4,4'-is	oonents: opropylidenediphenol: ty to algae	mg/l	elenastrum capricornu e time: 96 h	itum (green algae)): 2.5 - 3.1
	ethylenepentamine: ty to algae	Exposur Test Typ Test sub	Selenastrum capricorn e time: 72 h be: static test stance: Fresh water OECD Test Guideline	utum (green algae)): 6.8 mg/l 201
	ethylpiperazine: ty to algae	mg/l Exposur Test sub	elenastrum capricornu e time: 72 h stance: Fresh water OECD Test Guideline	itum (green algae)): > 1,000 201
M-Fac toxicit	etor (Acute aquatic y)	: No data	available	
4,4'-is	oonents: opropylidenediphenol: ty to fish (Chronic y)	Exposur Test Typ Test sub Method:	Pimephales promelas ( e time: 444 d se: flow-through test stance: Fresh water Fish Life Cycle Toxicit s: Toxic to aquatic orga	5
aquati	ty to daphnia and other c invertebrates nic toxicity)	: No data	available	
4,4'-is	p <mark>onents:</mark> opropylidenediphenol: ctor (Chronic aquatic y)	: 1		
Tetrae	oonents: ethylenepentamine: ty to microorganisms	Test Typ	7.3 mg/l e time: 2 h be: static test stance: Fresh water	

Aminoethylpiperazine:





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	Toxicity organisr	to soil dwelling ms	:	LC50 (Eisenia feti Exposure time: 56 Method: OECD Te	
				NOEC (Eisenia fe Exposure time: 56 Method: OECD Te	
	Plant to:	xicity	:	No data available	
	Sedime	nt toxicity	:	No data available	
	Toxicity organisr	to terrestrial ms	•	No data available	
		cology Assessment quatic toxicity	:	No data available	
		nents: propylidenediphenol: aquatic toxicity	:	Toxic to aquatic lif	e with long lasting effects.
	Toxicity	Data on Soil	:	No data available	
		rganisms relevant to ronment	•	No data available	
	Persist	ence and degradabili	ty		
	<u>Compo</u>				
		propylidenediphenol: adability	z	Result: Not readily Biodegradation: 1 Exposure time: 28	- 2 %
		nylenepentamine: adability	:	Inoculum: activate Result: Not biodeg Biodegradation: 1 Exposure time: 84 Method: Inherent	gradable 7 %
		thylpiperazine: adability	:	Inoculum: activate Result: Not readily Biodegradation: 0 Exposure time: 28 Method: OECD Te	/ biodegradable. 9 %
	Biochen	<u>nents:</u> thylpiperazine: nical Oxygen d (BOD)	:	5 mg/l Incubation time: 5	d





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	components: minoethylpiperazine:		
C	Chemical Oxygen Demand	: 560 mg/l	
	OD/COD	: No data available	
Т	hOD	: No data available	
В	OD/ThOD	: No data available	
	issolved organic carbon DOC)	: No data available	
	Physico-chemical emovability	: No data available	
S	tability in water	: No data available	
A	<b>components:</b> minoethylpiperazine: hotodegradation	: Test Type: Air Degradation (direct photolysis): 50 %	
		Test Type: Water	
	npact on Sewage Treatment	: No data available	
B	lioaccumulative potential		
20	<u>omponents:</u>		
	minoethylpiperazine: lioaccumulation	: Species: Fish Remarks: Does not bioaccumulate.	
<u>c</u>	components:		
P	etraethylenepentamine: artition coefficient: n- ctanol/water	: log Pow: -3.16	
P	minoethylpiperazine: artition coefficient: n- ctanol/water	: log Pow: -1.48 (20 °C)	
N	lobility in soil		
N	lobility	: No data available	
T C	<b>components:</b> Tetraethylenepentamine: Distribution among nvironmental compartments	: Koc: 3.2 - 3.7 Method: OECD Test Guideline 106	





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	Distribu	ethylpiperazine: ition among imental compartments y in soil	:	Koc: ca. 37000 No data available	
		adverse effects nmental fate and ys	5	No data available	
	Results assess	s of PBT and vPvB ment	:	No data available	
	Endocr potentia	ine disrupting al	:	No data available	
		ed organic bound ns (AOX)	:	No data available	
	Hazard	lous to the ozone lay	ər		
		Depletion Potential	:	Protection of Stra Substances Remarks: This pro manufactured with	R Protection of Environment; Part 82 tospheric Ozone - CAA Section 602 Class I oduct neither contains, nor was n a Class I or Class II ODS as defined by the t Section 602 (40 CFR 82, Subpt. A, App.A +
		nal ecological ation - Product	:	unprofessional ha	hazard cannot be excluded in the event of ndling or disposal. c life with long lasting effects.
	Global (GWP)	warming potential	:	No data available	

# SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods	
Waste from residues	<ul> <li>The product should not be allowed to enter drains, water courses or the soil.</li> <li>Do not contaminate ponds, waterways or ditches with chemical or used container.</li> <li>Send to a licensed waste management company.</li> </ul>
Contaminated packaging	: Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

# SECTION 14. TRANSPORT INFORMATION

#### International Regulations





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ΑΤΑ	
UN/ID No.	: UN 2735
Proper shipping name	<ul> <li>Polyamines, liquid, corrosive, n.o.s.</li> <li>(AMINOETHYLPIPERAZINE, TETRAETHYLENE PENTAMINE)</li> </ul>
Class	: 8
Packing group	: 11
Labels	: Corrosive
Packing instruction (cargo aircraft)	: 855
Packing instruction (passenger aircraft)	: 851
IMDG	
UN number	: UN 2735
Proper shipping name	<ul> <li>POLYAMINES, LIQUID, CORROSIVE, N.O.S. (AMINOETHYLPIPERAZINE, TETRAETHYLENE PENTAMINE)</li> </ul>
Class	: 8
Packing group	: 11
Labels	
EmS Code Marine pollutant	: F-A, S-B : no
	. 110

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

# National Regulations

<b>DOT Classification</b> UN/ID/NA number Proper shipping name	: UN 2735 : POLYAMINES, LIQUID, CORROSIVE, N.O.S. (AMINOETHYLPIPERAZINE, TETRAETHYLENE PENTAMINE)
Class	: 8
Packing group	: 11
Labels	: CORROSIVE
ERG Code	: 153
Marine pollutant	: no

# SECTION 15. REGULATORY INFORMATION

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

SARA 311/312 Hazards	: Skin corrosion or irritation Serious eye damage or eye irritation
	Respiratory or skin sensitisation
	Reproductive toxicity
	Specific target organ toxicity (single or repeated exposure)





REN®	569-2 US			
Version 1.3	Revision Date: 07/18/2017	SDS Number: 400001012682	Date of last issue: 12/07. Date of first issue: 01/15	
SARA 313		: The following components are subject to reporting levels established by SARA Title III, Section 313:		
		4,4'- isopropylidene	80-05-7	8.7 %

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

#### California Prop. 65

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

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

CH INV :	The formulation contains substances listed on the Swiss Inventory, On the inventory, or in compliance with the inventory
DSL :	All components of this product are on the Canadian DSL
AICS :	On the inventory, or in compliance with the inventory
NZIoC :	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
	On the inventory, or in compliance with the inventory
	On the inventory, or in compliance with the inventory
TSCA :	On the inventory, or in compliance with the inventory

#### Inventories

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

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

No substances are subject to a Significant New Use Rule.

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

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



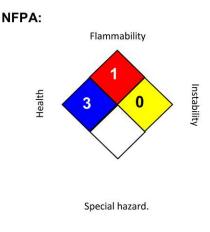


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vision Date: /18/2017 SDS Number: 400001012682 Date of last issue: 12/07/2016 Date of first issue: 01/15/2016

# **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** 

: 07/18/2017

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.

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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.

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