

SAFETY DATA SHEET

HUNTSMAN

Enriching lives through innovation

ARADUR® 2979 US

Version
1.1

Revision Date:
11/03/2017

SDS Number:
40000005901

Date of last issue: 06/30/2017
Date of first issue: 06/30/2017

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

This product is subject under TSCA 5(a) to Significant New Use Restrictions (SNUR).
 Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.'-[1,4-cyclohexanediylbis(methylene)]bis[.omega.-(2-aminomethylethoxy)- 1220986-58-2

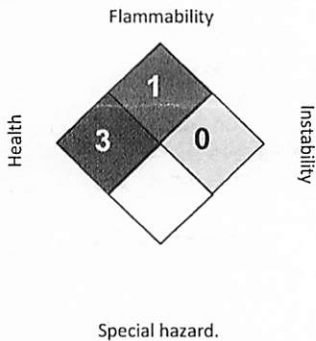
US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

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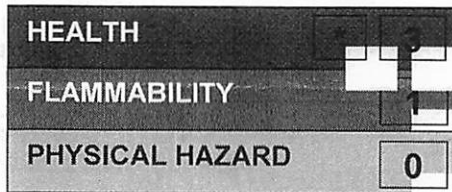
SECTION 16. OTHER INFORMATION

Further information

NFPA:



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 : 11/03/2017

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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.

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 cyclohexanediylbis(methylene)]bis[.omega.-(2-
 aminomethylethoxy)-

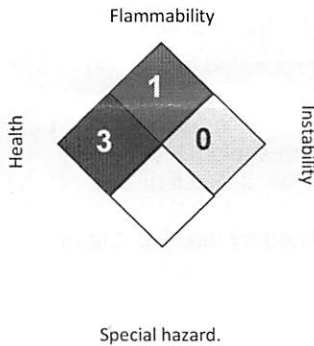
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 cyclohexanediylbis(methylene)]bis[.omega.-(2-
 aminomethylethoxy)-

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS® IV:

HEALTH	1	3
FLAMMABILITY	1	1
PHYSICAL HAZARD	0	

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

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(AMINE-TERMINATED CYCLOALIPHATIC PROPOXYLATE, 1,4-BIS(AMINOMETHYL)CYCLOHEXANE)

Class : 8
 Packing group : II
 Labels : CORROSIVE
 ERG Code : 153
 Marine pollutant : yes(AMINE-TERMINATED CYCLOALIPHATIC PROPOXYLATE)

SECTION 15. REGULATORY INFORMATION

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

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
toluene	108-88-3	1000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 311/312 Hazards : Acute toxicity (any route of exposure)
 Skin corrosion or irritation
 Serious eye damage or eye irritation
 Specific target organ toxicity (single or repeated exposure)

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

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

California Prop. 65

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

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

CH INV : Not in compliance with the inventory
 DSL : This product contains one or several components that are not on the Canadian DSL nor NDSL.
 AICS : Not in compliance with the inventory
 NZIoC : Not in compliance with the inventory
 ENCS : Not in compliance with the inventory
 KECI : Not in compliance with the inventory
 PICCS : Not in compliance with the inventory
 IECSC : Low volume exemption, Not in compliance with the inventory
 TCSI : Not 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)

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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****IATA**

- UN/ID No.** : UN 2735
Proper shipping name : Amines, liquid, corrosive, n.o.s.
 (AMINE-TERMINATED CYCLOALIPHATIC PROPOXYLATE,
 1,4-BIS(AMINOMETHYL)CYCLOHEXANE)
Class : 8
Packing group : II
Labels : Corrosive
Packing instruction (cargo aircraft) : 855
Packing instruction (passenger aircraft) : 851

IMDG

- UN number** : UN 2735
Proper shipping name : AMINES, LIQUID, CORROSIVE, N.O.S.
 (AMINE-TERMINATED CYCLOALIPHATIC PROPOXYLATE,
 1,4-BIS(AMINOMETHYL)CYCLOHEXANE)
Class : 8
Packing group : II
Labels : 8
EmS Code : F-A, S-B
Marine 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 : AMINES, LIQUID, CORROSIVE, N.O.S.

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- Class : 8
- Packing group : II
- Labels : Corrosive
- Packing instruction (cargo aircraft) : 855
- Packing instruction (passenger aircraft) : 851

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- Class : 8
- Packing group : II
- Labels : 8
- EmS Code : F-A, S-B
- Marine pollutant : yes

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

Not applicable for product as supplied.

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Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.'-[1,4-cyclohexanediylbis(methylene)]bis[.omega.-(2-aminomethylethoxy)-:

Partition coefficient: n-octanol/water : log Pow: 1.59 - 3.48
pH: 11.5
Method: Regulation (EC) No. 440/2008, Annex, A.8
GLP: yes

benzyl alcohol:
Partition coefficient: n-octanol/water : log Pow: 1.1 (20 °C)

Mobility in soil

Mobility : No data available

Components:

benzyl alcohol:
Distribution among environmental compartments : Koc: 5 - 15
Stability in soil : No data available

Other adverse effects

Environmental fate and pathways : No data available

Results of PBT and vPvB assessment : No data available

Endocrine disrupting potential : No data available

Adsorbed organic bound halogens (AOX) : No data available

Hazardous to the ozone layer

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82
Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information - Product : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

Global warming potential (GWP) : No data available

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the environment

Persistence and degradability**Components:**

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.'-[1,4-cyclohexanediylbis(methylene)]bis[.omega.-(2-aminomethylethoxy)-]:

Biodegradability : Test Type: Zahn-Wellens Test
 Inoculum: activated sludge
 Result: Not inherently biodegradable.
 Biodegradation: 9 % (Dissolved organic carbon (DOC))
 Exposure time: 28 d
 Method: OECD Test Guideline 302B
 GLP: yes

benzyl alcohol:
 Biodegradability : Inoculum: Sewage (STP effluent)
 Concentration: 20 mg/l
 Result: Readily biodegradable.
 Biodegradation: 95 - 97 %
 Exposure time: 21 d
 Method: OECD Test Guideline 301A

Biochemical Oxygen Demand (BOD) : No data available

Chemical Oxygen Demand (COD) : No data available

BOD/COD : No data available

ThOD : No data available

BOD/ThOD : No data available

Dissolved organic carbon (DOC) : No data available

Physico-chemical removability : No data available

Stability in water : No data available

Photodegradation : No data available

Impact on Sewage Treatment : No data available

Bioaccumulative potential**Components:**

benzyl alcohol:
 Bioaccumulation : Bioconcentration factor (BCF): 1

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the environment

Persistence and degradability**Components:**

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Biodegradability : Test Type: Zahn-Wellens Test
 Inoculum: activated sludge
 Result: Not inherently biodegradable.
 Biodegradation: 9 % (Dissolved organic carbon (DOC))
 Exposure time: 28 d
 Method: OECD Test Guideline 302B
 GLP: yes

benzyl alcohol:

Biodegradability : Inoculum: Sewage (STP effluent)
 Concentration: 20 mg/l
 Result: Readily biodegradable.
 Biodegradation: 95 - 97 %
 Exposure time: 21 d
 Method: OECD Test Guideline 301A

Biochemical Oxygen Demand (BOD) : No data available

Chemical Oxygen Demand (COD) : No data available

BOD/COD : No data available

ThOD : No data available

BOD/ThOD : No data available

Dissolved organic carbon (DOC) : No data available

Physico-chemical removability : No data available

Stability in water : No data available

Photodegradation : No data available

Impact on Sewage Treatment : No data available

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benzyl alcohol:
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End point: see user defined free text
Test Type: semi-static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 211
GLP: yes

NOEC (Daphnia pulex (Water flea)): 5 mg/l
Exposure time: 21 d
End point: Immobilization
Test Type: semi-static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 211
GLP: yes

benzyl alcohol:
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 51 mg/l
Exposure time: 21 d
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 211

Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.'-[1,4-cyclohexanediylbis(methylene)]bis[.omega.-(2-aminomethylethoxy)-]:
M-Factor (Chronic aquatic toxicity) : 1

Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.'-[1,4-cyclohexanediylbis(methylene)]bis[.omega.-(2-aminomethylethoxy)-]:
Toxicity to microorganisms : EC50 (activated sludge): 100 - 1,000 mg/l
Exposure time: 3 h
Test Type: Respiration inhibition
Method: OECD Test Guideline 209
GLP: yes

Toxicity to soil dwelling organisms : No data available

Plant toxicity : No data available

Sediment toxicity : No data available

Toxicity to terrestrial organisms : No data available

Ecotoxicology Assessment
Acute aquatic toxicity : No data available

Chronic aquatic toxicity : No data available

Toxicity Data on Soil : No data available

Other organisms relevant to : No data available

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mg/l
 Exposure time: 72 h
 Test Type: static test
 Analytical monitoring: yes
 Test substance: Fresh water
 Method: OECD Test Guideline 201
 GLP: yes

ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.16 mg/l
 Exposure time: 72 h
 Test Type: static test
 Analytical monitoring: yes
 Test substance: Fresh water
 Method: OECD Test Guideline 201
 GLP: yes

benzyl alcohol:
 Toxicity to algae

: EgC50 (Selenastrum capricornutum (green algae)): 770 mg/l
 Exposure time: 72 h
 Test Type: static test
 Test substance: Fresh water
 Method: OECD Test Guideline 201

Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.'-[1,4-cyclohexanediylbis(methylene)]bis[.omega.-(2-aminomethylethoxy)-]:
 M-Factor (Acute aquatic toxicity) : 1
 Toxicity to fish (Chronic toxicity) : No data available

Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.'-[1,4-cyclohexanediylbis(methylene)]bis[.omega.-(2-aminomethylethoxy)-]:
 Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10 (Daphnia pulex (Water flea)): 9.1 mg/l
 Exposure time: 21 d
 End point: see user defined free text
 Test Type: semi-static test
 Analytical monitoring: yes
 Test substance: Fresh water
 Method: OECD Test Guideline 211
 GLP: yes

EC10 (Daphnia pulex (Water flea)): 8.2 mg/l
 Exposure time: 21 d
 End point: Immobilization
 Test Type: semi-static test
 Analytical monitoring: yes
 Test substance: Fresh water
 Method: OECD Test Guideline 211
 GLP: yes

NOEC (Daphnia pulex (Water flea)): 10 mg/l
 Exposure time: 21 d

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mg/l
 Exposure time: 72 h
 Test Type: static test
 Analytical monitoring: yes
 Test substance: Fresh water
 Method: OECD Test Guideline 201
 GLP: yes

ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.16
 mg/l
 Exposure time: 72 h
 Test Type: static test
 Analytical monitoring: yes
 Test substance: Fresh water
 Method: OECD Test Guideline 201
 GLP: yes

benzyl alcohol:
 Toxicity to algae

: EgC50 (Selenastrum capricornutum (green algae)): 770 mg/l
 Exposure time: 72 h
 Test Type: static test
 Test substance: Fresh water
 Method: OECD Test Guideline 201

Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.'-[1,4-cyclohexanediylbis(methylene)]bis[.omega.-
 (2-aminomethylethoxy)-:
 M-Factor (Acute aquatic toxicity) : 1
 Toxicity to fish (Chronic toxicity) : No data available

Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.'-[1,4-cyclohexanediylbis(methylene)]bis[.omega.-
 (2-aminomethylethoxy)-:
 Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10 (Daphnia pulex (Water flea)): 9.1 mg/l
 Exposure time: 21 d
 End point: see user defined free text
 Test Type: semi-static test
 Analytical monitoring: yes
 Test substance: Fresh water
 Method: OECD Test Guideline 211
 GLP: yes

EC10 (Daphnia pulex (Water flea)): 8.2 mg/l
 Exposure time: 21 d
 End point: Immobilization
 Test Type: semi-static test
 Analytical monitoring: yes
 Test substance: Fresh water
 Method: OECD Test Guideline 211
 GLP: yes

NOEC (Daphnia pulex (Water flea)): 10 mg/l
 Exposure time: 21 d

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1.1Revision Date:
11/03/2017SDS Number:
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Date of first issue: 06/30/2017**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Components:**Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.'-[1,4-cyclohexanediylbis(methylene)]bis[.omega.-
(2-aminomethylethoxy)-:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 75 mg/l
 End point: mortality
 Exposure time: 96 h
 Test Type: semi-static test
 Analytical monitoring: yes
 Test substance: Fresh water
 Method: OECD Test Guideline 203
 GLP: yes

benzyl alcohol:

Toxicity to fish : LC50: 460 mg/l
 Exposure time: 96 h
 Test Type: static test
 Test substance: Fresh water
 Method: OPPTS 850.1075

Components:Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.'-[1,4-cyclohexanediylbis(methylene)]bis[.omega.-
(2-aminomethylethoxy)-:

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 7.5 mg/l
 aquatic invertebrates : End point: Immobilization
 Exposure time: 48 h
 Test Type: static test
 Analytical monitoring: yes
 Test substance: Fresh water
 Method: OECD Test Guideline 202
 GLP: yes

benzyl alcohol:

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 230 mg/l
 aquatic invertebrates : Exposure time: 48 h
 Test substance: Fresh water
 Method: OECD Test Guideline 202

Components:Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.'-[1,4-cyclohexanediylbis(methylene)]bis[.omega.-
(2-aminomethylethoxy)-:

Toxicity to algae : NOEC (Pseudokirchneriella subcapitata (green algae)): 0.032
 mg/l
 Exposure time: 72 h
 Test Type: static test
 Analytical monitoring: yes
 Test substance: Fresh water
 Method: OECD Test Guideline 201
 GLP: yes

EbC50 (Pseudokirchneriella subcapitata (green algae)): 0.084

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NOEC: 400 mg/kg, 1072 mg/m³
Application Route: Ingestion
Test atmosphere: dust/mist
Exposure time: 4 Weeks
Number of exposures: 6 h
Method: OECD Test Guideline 412

cyclohex-1,4-ylenebis(methylamine):
Species: Rat, male and female
NOEC: 1 ppm
Test atmosphere: vapour
Exposure time: 672 h

Repeated dose toxicity - Assessment : No data available

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

Product:

Remarks: No data available

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NOEC: 400 mg/kg, 1072 mg/m3
Application Route: Ingestion
Test atmosphere: dust/mist
Exposure time: 4 Weeks
Number of exposures: 6 h
Method: OECD Test Guideline 412

cyclohex-1,4-ylenebis(methylamine):
Species: Rat, male and female
NOEC: 1 ppm
Test atmosphere: vapour
Exposure time: 672 h

Repeated dose toxicity - Assessment : No data available

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

Product:

Remarks: No data available

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Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.'-[1,4-cyclohexanediylbis(methylene)]bis[.omega.-
(2-aminomethylethoxy)-:

Effects on foetal
development

: Test Type: reproductive and developmental toxicity study
Species: Rat, male and female
Application Route: Oral
Embryo-foetal toxicity: No observed adverse effect level: 75
mg/kg body weight
Method: OECD Test Guideline 422
Result: No effects on fertility and early embryonic
development were detected.
GLP: yes

benzyl alcohol:

Species: Mouse, female
Application Route: Oral
General Toxicity Maternal: Lowest observed adverse effect
level: 550 mg/kg body weight
Result: No teratogenic effects

Reproductive toxicity -
Assessment

: No data available

STOT - single exposure

No data available

STOT - repeated exposure**Components:**

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.'-[1,4-cyclohexanediylbis(methylene)]bis[.omega.-
(2-aminomethylethoxy)-:

Exposure routes: Ingestion

Assessment: Shown to produce significant health effects in animals at concentrations of >10 to
100 mg/kg bw.

Repeated dose toxicity**Components:**

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.'-[1,4-cyclohexanediylbis(methylene)]bis[.omega.-
(2-aminomethylethoxy)-:

Species: Rat, male and female

NOAEL: 10 mg/kg

Application Route: oral (gavage)

Method: OECD Test Guideline 422

GLP: yes

Species: Rat, male and female

NOAEL: 10 mg/kg

Application Route: oral (gavage)

Exposure time: 90 d

Method: OECD Test Guideline 408

GLP: yes

benzyl alcohol:

Species: Rat, male and female

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Result: negative
GLP: yes

Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.'-[1,4-cyclohexanediylbis(methylene)]bis[.omega.-(2-aminomethylethoxy)-]
Genotoxicity in vivo

: Test Type: Micronucleus test
Species: Mouse (male and female)
Cell type: Bone marrow
Application Route: Oral
Method: OECD Test Guideline 474
Result: negative
GLP: yes

benzyl alcohol:
Genotoxicity in vivo

: Application Route: Intraperitoneal injection
Dose: 200 mg/kg
Method: OECD Test Guideline 474
Result: negative

Carcinogenicity**Components:**

benzyl alcohol:
Species: Rat, (male and female)
Application Route: Oral
Exposure time: 103 weeks
Dose: 400 mg/kg
Frequency of Treatment: 5 daily
Method: OECD Test Guideline 453
Result: negative

Carcinogenicity - Assessment : No data available

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Effects on fertility : No data available

Components:

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Result: negative
GLP: yes

Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.'-[1,4-cyclohexanediylbis(methylene)]bis[.omega.-
(2-aminomethylethoxy)-:

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (male and female)
Cell type: Bone marrow
Application Route: Oral
Method: OECD Test Guideline 474
Result: negative
GLP: yes

benzyl alcohol:
Genotoxicity in vivo : Application Route: Intraperitoneal injection
Dose: 200 mg/kg
Method: OECD Test Guideline 474
Result: negative

Carcinogenicity**Components:**

benzyl alcohol:
Species: Rat, (male and female)
Application Route: Oral
Exposure time: 103 weeks
Dose: 400 mg/kg
Frequency of Treatment: 5 daily
Method: OECD Test Guideline 453
Result: negative

Carcinogenicity - Assessment : No data available

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Effects on fertility : No data available

Components:

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Components:

benzyl alcohol:
Acute inhalation toxicity : LC50 (Rat, male and female): > 4178 mg/m3
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Acute dermal toxicity - Product : Acute toxicity estimate : 1,690 mg/kg
Method: Calculation method

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

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**Components:**

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.'-[1,4-cyclohexanediylbis(methylene)]bis[.omega.-
(2-aminomethylethoxy)-]:

Remarks: No data available

benzyl alcohol:
Exposure routes: Skin
Species: Guinea pig
Result: Does not cause skin sensitisation.

Assessment: No data available

Germ cell mutagenicity**Components:**

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.'-[1,4-cyclohexanediylbis(methylene)]bis[.omega.-
(2-aminomethylethoxy)-]:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella tryphimurium and E. coli
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes

Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476

SAFETY DATA SHEET

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Vapour pressure : No data is available on the product itself.

Relative vapour density : No data is available on the product itself.

Relative density : 1.02

Density : 1.02 g/cm³

Solubility(ies)

 Water solubility : No data is available on the product itself.

 Solubility in other solvents : No data is available on the product itself.

Partition coefficient: n-octanol/water : No data is available on the product itself.

Auto-ignition temperature : No data is available on the product itself.

Thermal decomposition : No data is available on the product itself.

Self-Accelerating decomposition temperature (SADT) : No data is available on the product itself.

Viscosity : No data is available 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 : No dangerous reaction known under conditions of normal use.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : No hazards to be specially mentioned.

Conditions to avoid : None known.

Incompatible materials : None known.

SECTION 11. TOXICOLOGICAL INFORMATION

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

Acute toxicity

Acute oral toxicity - Product : Acute toxicity estimate : 881.25 mg/kg
Method: Calculation method

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Relative density : 1.02

Density : 1.02 g/cm³

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11/03/2017SDS Number:
400000005901Date of last issue: 06/30/2017
Date of first issue: 06/30/2017**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters****Personal protective equipment**

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.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: light yellow
Odour	: ammoniacal
Odour Threshold	: No data is available on the product itself.
pH	: > 9
Freezing point	: No data is available on the product itself.
Melting point	: No data is available on the product itself.
Boiling point	: > 100 °C
Flash point	: > 93 °C Method: 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.

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Version	Revision Date:	SDS Number:	Date of last issue:
1.1	11/03/2017	400000005901	06/30/2017
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- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : 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 : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.
- Materials to avoid : No materials to be especially mentioned.
- Further information on storage stability : No decomposition if stored and applied as directed.

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- 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 : 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 and effects, both acute and delayed : None known.
- Notes to physician : No information available.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : No hazardous combustion products are known
- Specific extinguishing methods : No data is available on the product itself.

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Date of first issue: 06/30/2017

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

: **Prevention:**

P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
 P264 Wash skin thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P273 Avoid release to the environment.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
 P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
 P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
 P314 Get medical advice/ attention if you feel unwell.
 P363 Wash contaminated clothing before reuse.
 P391 Collect spillage.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**Hazardous components**

Chemical name	CAS-No.	Concentration (% w/w)
Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.-[1,4-cyclohexanediylbis(methylene)]bis[.omega.-(2-aminomethylethoxy)-benzyl alcohol	1220986-58-2	50 - 70
benzyl alcohol	100-51-6	10 - 20
cyclohex-1,4-ylenebis(methylamine)	2549-93-1	10 - 20

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

SECTION 4. FIRST AID MEASURES

General advice

: Move out of dangerous area.
Consult a physician.

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SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product name : ARADUR® 2979 US

Manufacturer or supplier's details

Company name of supplier : Huntsman Advanced Materials Americas LLC
Address : 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

Recommended use : Epoxy curing agent

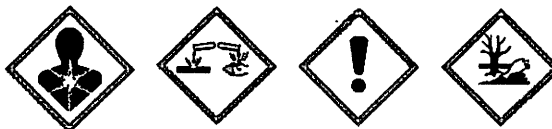
SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Acute toxicity (Oral) : Category 4
Acute toxicity (Dermal) : Category 4
Skin corrosion : Category 1B
Serious eye damage : Category 1
Specific target organ toxicity - repeated exposure (Oral) : Category 2
Acute aquatic toxicity : Category 1
Chronic aquatic toxicity : Category 1

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H302 + H312 Harmful if swallowed or in contact with skin.
H314 Causes severe skin burns and eye damage.
H373 May cause damage to organs through prolonged or repeated exposure if swallowed.