

**ARALDITE® AW 8595 US**

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	01/27/2016	400001012594	Date of first issue: 01/27/2016

**SECTION 1. IDENTIFICATION**

Product name : ARALDITE® AW 8595 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  
 Telephone : Non-Emergency: (800) 257-5547  
 E-mail address of person responsible for the SDS : MSDS@huntsman.com  
 Emergency telephone : Chemtrec: (800) 424-9300 or (703) 527-3887

**Recommended use of the chemical and restrictions on use**

Recommended use : Epoxy constituents

**SECTION 2. HAZARDS IDENTIFICATION****GHS Classification**

Skin irritation : Category 2  
 Eye irritation : Category 2A  
 Skin sensitization : Category 1  
 Acute aquatic toxicity : Category 2  
 Chronic aquatic toxicity : Category 2

**GHS Label element**

Hazard pictograms :



Signal Word : Warning

Hazard Statements : H315 Causes skin irritation.  
 H317 May cause an allergic skin reaction.  
 H319 Causes serious eye irritation.  
 H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**  
 P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
 P264 Wash skin thoroughly after handling.

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Concepts**  
 Our expertise is your solution.  
 chemical-concepts.com  
**800.220.1966**  
 410 Pike Road • Huntingdon Valley, PA 19006

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P272 Contaminated work clothing must not be allowed out of the workplace.

P273 Avoid release to the environment.

P280 Wear eye protection/ face protection.

P280 Wear protective gloves.

**Response:**

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before reuse.

P391 Collect spillage.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

None known.

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

Substance / Mixture : Mixture

**Hazardous ingredients**

Chemical Name	CAS-No.	Concentration (%)
Bisphenol A epoxy resin	25068-38-6	>= 60 - <= 100
1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane	17557-23-2	>= 3 - <= 7

**SECTION 4. FIRST AID MEASURES**

General advice : Move out of dangerous area.  
Show this material 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 : If skin irritation persists, call a physician.  
If on skin, rinse well with water.  
If on clothes, remove clothes.

In case of eye contact : Immediately flush eye(s) with plenty of water.  
Remove contact lenses.  
Protect unharmed eye.  
Keep eye wide open while rinsing.  
If eye irritation persists, consult a specialist.

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If swallowed : Keep respiratory tract clear.  
Do not give milk or alcoholic beverages.  
Never give anything by mouth to an unconscious person.  
If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed : None known.

**SECTION 5. FIRE-FIGHTING MEASURES**

Suitable extinguishing media : No data is available on the product itself.

Unsuitable extinguishing media : High volume water jet

Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : No data is available on the product itself.

Specific extinguishing methods : No data is available on the product itself.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters : 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.

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- Advice on safe handling : Do not breathe vapors/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 sensitization 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.  
Electrical installations / working materials must comply with the technological safety standards.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Ingredients with workplace control parameters**

Contains no substances with occupational exposure limit values.

**Personal protective equipment**

- Respiratory protection : No personal respiratory protective equipment normally required.
- 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 : paste
- Color : white

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Odor	:	No data is available on the product itself.
Odor Threshold	:	No data is available on the product itself.
pH	:	No data is available on the product itself.
Flash point	:	> 93.33 °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.
Upper explosion limit	:	No data is available on the product itself.
Lower explosion limit	:	No data is available on the product itself.
Vapor pressure	:	No data is available on the product itself.
Relative vapor density	:	No data is available on the product itself.
Relative density	:	No data is available on the product itself.
Density	:	1.25 - 1.32 g/cm <sup>3</sup>
Solubility(ies)		
Water solubility	:	negligible
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.
Autoignition temperature	:	No data is available on the product itself.
Thermal decomposition	:	No data is available on the product itself.
Viscosity	:	No data is available on the product itself.
Self-Accelerating decomposition temperature (SADT)	:	No data is available 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

**SECTION 11. TOXICOLOGICAL INFORMATION**

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

Acute oral toxicity - Product : Acute toxicity estimate : > 5,000 mg/kg  
Method: Calculation method

Acute inhalation toxicity : No data available

Acute dermal toxicity - Product : Acute toxicity estimate : > 5,000 mg/kg  
Method: Calculation method

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

**Skin corrosion/irritation****Product:**

Remarks: May cause skin irritation and/or dermatitis.

**Serious eye damage/eye irritation****Product:**

Remarks: May cause irreversible eye damage.

**Respiratory or skin sensitization****Product:**

Remarks: Causes sensitization.

Assessment: No data available

**Germ cell mutagenicity****Ingredients:**

Bisphenol A epoxy resin:  
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

1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane:  
Genotoxicity in vitro : Metabolic activation: negative  
Method: OECD Test Guideline 471  
Result: positive

**Ingredients:**

Bisphenol A epoxy resin:  
Genotoxicity in vivo : Cell type: Germ  
Application Route: Oral  
Method: OECD Test Guideline 478

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Result: negative

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

1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane:  
Genotoxicity in vivo : Method: OECD Test Guideline 474  
Result: negative

**Ingredients:**

Bisphenol A epoxy resin:  
Germ cell mutagenicity-  
Assessment : Weight of evidence does not support classification as a germ  
cell mutagen.

Germ cell mutagenicity-  
Assessment : No data available

**Carcinogenicity****Ingredients:**

Bisphenol A epoxy resin:  
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

1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane:  
Species: Mouse, (male and female)  
Application Route: Dermal  
Exposure time: 24 month(s)  
Dose: 30 mg/kg  
Frequency of Treatment: 3 daily

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Result: Not classified due to inconclusive data.  
Target Organs: Skin

Carcinogenicity - Assessment : No data available

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

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

**NTP** No ingredient 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****Ingredients:**

Bisphenol A epoxy resin:  
Effects on fertility : Test Type: Two-generation study  
Species: Rat, male and female  
Application Route: Oral  
Dose: >750 milligram per kilogram  
General Toxicity Parent: No-observed-effect level: 540 mg/kg body weight  
General Toxicity F1: No-observed-effect level: 540 mg/kg body weight  
Symptoms: No adverse effects.  
Method: OECD Test Guideline 416  
Result: No effects on fertility and early embryonic development were detected.

**Ingredients:**

Bisphenol A epoxy resin:  
Effects on fetal development : Species: Rabbit, female  
Application Route: Dermal  
General Toxicity Maternal: NOAEL (No observed adverse effect level): 30 mg/kg body weight  
Method: Other guidelines  
Result: No teratogenic effects.

Species: Rabbit, female  
Application Route: Oral  
General Toxicity Maternal: NOAEL (No observed adverse effect level): 60 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No teratogenic effects.

Species: Rat, female  
Application Route: Oral  
General Toxicity Maternal: NOAEL (No observed adverse effect level): 180 mg/kg body weight



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Method: OECD Test Guideline 414  
Result: No teratogenic effects.

Reproductive toxicity - Assessment : No data available

**STOT-single exposure**

No data available

**STOT-repeated exposure**

No data available

**Repeated dose toxicity****Ingredients:**

Bisphenol A epoxy resin:  
Species: Rat, male and female  
NOAEL (No observed adverse effect level): 50 mg/kg  
Application Route: Ingestion  
Exposure time: 14 Weeks  
Number of exposures: 7 d  
Method: Subchronic toxicity

Species: Rat, male and female  
No-observed-effect level: 10 mg/kg  
Application Route: Skin contact  
Exposure time: 13 Weeks  
Number of exposures: 5 d  
Method: Subchronic toxicity

Species: Mouse, male  
NOAEL (No observed adverse effect level): 100 mg/kg  
Application Route: Skin contact  
Exposure time: 13 Weeks  
Number of exposures: 3 d  
Method: Subchronic toxicity

1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane:  
Species: Mouse, male and female  
Lowest observable effect level: 30 mg/kg  
Application Route: Skin contact  
Exposure time: 17,280 h  
Number of exposures: 3 d  
Method: Chronic toxicity

Repeated dose toxicity - Assessment : No data available

**Aspiration toxicity**

No data available

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**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

**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Ingredients:**

Bisphenol A epoxy resin:

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

**Ingredients:**

Bisphenol A epoxy resin:

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 2.7 mg/l  
aquatic invertebrates : Exposure time: 48 h  
Test Type: static test  
Test substance: Fresh water

**Ingredients:**

Bisphenol A epoxy resin:

Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 9.4 mg/l  
Exposure time: 72 h  
Test Type: static test  
Test substance: Fresh water

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Method: EPA-660/3-75-009

M-Factor (Acute aquatic toxicity) : No data available

Toxicity to fish (Chronic toxicity) : No data available

**Ingredients:**

Bisphenol A epoxy resin:  
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.3 mg/l  
Exposure time: 21 d  
Test Type: semi-static test  
Test substance: Fresh water  
Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity) : No data available

**Ingredients:**

Bisphenol A epoxy resin:  
Toxicity to bacteria : IC50 (activated sludge): > 100 mg/l  
Exposure time: 3 h  
Test Type: static test  
Test substance: Fresh water

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 the environment : No data available

Further information:  
No data available**Persistence and degradability****Ingredients:**

Bisphenol A epoxy resin:  
Biodegradability : Inoculum: Sewage (STP effluent)

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Concentration: 20 mg/l  
 Result: Not readily biodegradable.  
 Biodegradation: 5 %  
 Exposure time: 28 d  
 Method: OECD Test Guideline 301F

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****Ingredients:**

Bisphenol A epoxy resin:  
 Bioaccumulation : Bioconcentration factor (BCF): 31  
 Remarks: Does not bioaccumulate.

**Ingredients:**

Bisphenol A epoxy resin:  
 Partition coefficient: n-octanol/water : log Pow: 3.242 (25 °C)  
 pH: 7.1  
 Method: OECD Test Guideline 117

**Mobility in soil**

Mobility : No data available

**Ingredients:**

Bisphenol A epoxy resin:  
 Distribution among environmental compartments : Koc: 445.  
 Stability in soil : No data available

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**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.  
Toxic to aquatic life with long lasting effects.

Global warming potential (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 Regulation****IATA**

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

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Class	: 9
Packing group	: III
Labels	: Miscellaneous
Packing instruction (cargo aircraft)	: 964
Packing instruction (passenger aircraft)	: 964

**IMDG**

UN number	: UN 3082
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BISPHENOL A EPOXY RESIN)
Class	: 9
Packing group	: III
Labels	: 9
EmS Code	: F-A, S-F
Marine pollutant	: yes

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

Not applicable for product as supplied.

**Domestic regulation****DOT Classification**

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

**SECTION 15. REGULATORY INFORMATION**

**TSCA - 5(a) Significant New Use Rule List of Chemicals** : Not relevant

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

1-CHLORO-2,3-EPOXYPROPANE	106-89-8	100	
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**SARA 311/312 Hazards** : Acute Health Hazard

**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.

**Clean Air Act**

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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).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

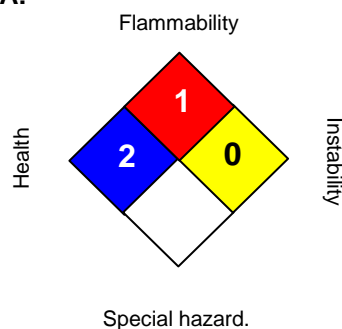
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

**California Prop 65**

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

**The ingredients of this product are reported in the following inventories:**

CH INV	:	The mixture contains substances listed on the Swiss Inventory
TSCA	:	On TSCA 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
ISHL	:	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

**SECTION 16. OTHER INFORMATION****Further information****NFPA:****HMIS III:**

<b>HEALTH</b>	<b>2</b>
<b>FLAMMABILITY</b>	<b>1</b>
<b>PHYSICAL HAZARD</b>	<b>0</b>

0 = not significant, 1 = Slight,

2 = Moderate, 3 = High

4 = Extreme, \* = Chronic

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While 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

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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.

**NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE. NO PART OF THIS DATA SHEET MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM, OR BY ANY MEANS, WITHOUT PERMISSION IN WRITING FROM HUNTSMAN. ALL REQUESTS FOR PERMISSION TO REPRODUCE MATERIAL FROM THIS DATA SHEET SHOULD BE DIRECTED TO HUNTSMAN, MANAGER, PRODUCT SAFETY AT THE ABOVE ADDRESS.**



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**SECTION 1. IDENTIFICATION**

Product name : HARDENER HW 8595 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  
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 : Hardener

**SECTION 2. HAZARDS IDENTIFICATION****GHS Classification**

Flammable liquids : Category 4  
Acute toxicity (Inhalation) : Category 4  
Skin corrosion : Category 1B  
Serious eye damage : Category 1  
Skin sensitisation : Category 1  
Reproductive toxicity : Category 2  
Acute aquatic toxicity : Category 3  
Chronic aquatic toxicity : Category 3

**GHS label elements**

Hazard pictograms : 

Signal word : Danger

Hazard statements : H227 Combustible liquid.  
H314 Causes severe skin burns and eye damage.

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H317 May cause an allergic skin reaction.  
H332 Harmful if inhaled.  
H361 Suspected of damaging fertility or the unborn child.  
H412 Harmful to aquatic life with long lasting effects.

## Precautionary statements

: **Prevention:**

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P264 Wash skin thoroughly after handling.  
P271 Use only outdoors or in a well-ventilated area.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**

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.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
P363 Wash contaminated clothing before reuse.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

**Storage:**

P403 + P235 Store in a well-ventilated place. Keep cool.  
P405 Store locked up.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

None known.

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

Substance / Mixture : Mixture

**Hazardous components**

Chemical name	CAS-No.	Concentration (% w/w)
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2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperaziny)ethyl]amino]butyl-terminated	68683-29-4	30 - 60
benzyl dimethylamine	103-83-3	3 - 7
Diethylenetriamine	111-40-0	3 - 7
Aminoethylpiperazine	140-31-8	3 - 7
4,4'-isopropylidenediphenol	80-05-7	1 - 3
Tetraethylenepentamine	112-57-2	1 - 3

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

**SECTION 4. FIRST AID MEASURES**

- General advice : Move out of dangerous area.  
 Consult a physician.  
 Show this safety data sheet to the doctor in attendance.  
 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.

**SECTION 5. FIREFIGHTING MEASURES**

- Suitable extinguishing media : No data is available on the product itself.

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- Carbon dioxide (CO<sub>2</sub>)
- Unsuitable extinguishing media : High volume water jet
- No data is available on the product itself.
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : No data is available on the product itself.
- Specific extinguishing methods : No data is available on the product itself.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.  
For safety reasons in case of fire, cans should be stored separately in closed containments.  
Use a water spray to cool fully closed containers.
- 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 : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).  
Keep in suitable, closed containers for disposal.

**SECTION 7. HANDLING AND STORAGE**

- Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material.  
Keep away from open flames, hot surfaces and sources of ignition.
- Advice on safe handling : Avoid formation of aerosol.  
Do not breathe vapours/dust.  
Avoid exposure - obtain special instructions before use.

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Avoid contact with skin and eyes.  
For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
Provide sufficient air exchange and/or exhaust in work rooms.  
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 : No smoking.  
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.  
Electrical installations / working materials must comply with the technological safety standards.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters****Personal protective equipment**

Respiratory protection : No personal respiratory protective equipment normally required.

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 : amber

Odour : amine-like

Odour Threshold : No data is available on the product itself.

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pH : No data is available on the product itself.

Flash point : ca. 79 °C Method: Pensky-Martens closed cup, 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 : No data is available on the product itself.

Lower explosion 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 : 0.94

Density : No data is available on the product itself.

Solubility(ies)

Water solubility : partly soluble

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.

**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.

Vapours may form explosive mixture with air.

Conditions to avoid : Heat, flames and sparks.

**SECTION 11. TOXICOLOGICAL INFORMATION**

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

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exposure

**Acute toxicity**

Acute oral toxicity - Product : Acute toxicity estimate : > 5,000 mg/kg  
Method: Calculation method

Acute inhalation toxicity - Product : Acute toxicity estimate: 3.86 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Calculation method

Acute dermal toxicity - Product : Acute toxicity estimate : > 5,000 mg/kg  
Method: Calculation method

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

**Skin corrosion/irritation****Product:**

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:**

benzyl dimethylamine:  
Genotoxicity in vitro

: Test Type: Ames test  
Concentration: 5000 ug/plate  
Metabolic activation: with and without metabolic activation  
Method: reverse mutation assay  
Result: negative  
GLP: yes

Test Type: Chromosome aberration test in vitro  
Species: Chinese hamster cells  
Concentration: .213 mg/ml  
Metabolic activation: with and without metabolic activation  
Method: Chromosome aberration test in vitro  
Result: positive  
GLP: yes

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Test Type: Ames test  
 Species: Salmonella typhimurium  
 Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 471  
 Result: negative

Test Type: In vitro mammalian cell gene mutation test  
 Species: Chinese hamster lung cells  
 Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 476  
 Result: negative

Aminoethylpiperazine:  
 Genotoxicity in vitro

: Concentration: 5000 ug/plate  
 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 476  
 Result: negative

Metabolic activation: negative  
 Method: OECD Test Guideline 482  
 Result: negative

4,4'-isopropylidenediphenol:  
 Genotoxicity in vitro

: Metabolic activation: with and without metabolic activation  
 Result: negative

Tetraethylenepentamine:  
 Genotoxicity in vitro

: Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 479  
 Result: positive

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

Metabolic activation: negative  
 Method: OECD Test Guideline 482  
 Result: negative

**Components:**

benzylidimethylamine:  
 Genotoxicity in vivo

: Test Type: In vivo micronucleus test  
 Species: Mouse  
 Cell type: Somatic  
 Application Route: Oral  
 Exposure time: 24 h  
 Dose: 150 mg/kg  
 Result: negative

Diethylenetriamine:



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Genotoxicity in vivo : Cell type: Somatic  
 Application Route: Oral  
 Dose: 85 - 850 mg/kg  
 Method: OECD Test Guideline 474  
 Result: negative

Application Route: Oral  
 Result: negative

Aminoethylpiperazine:  
 Genotoxicity in vivo : Application Route: Intraperitoneal injection  
 Dose: 175 - 560 mg/kg  
 Method: OECD Test Guideline 474  
 Result: negative

4,4'-isopropylidenediphenol:  
 Genotoxicity in vivo : Method: OECD Test Guideline 474  
 Result: negative

Tetraethylenepentamine:  
 Genotoxicity in vivo : Application Route: Intraperitoneal injection  
 Method: OECD Test Guideline 474  
 Result: negative

**Carcinogenicity****Components:**

Diethylenetriamine:  
 Species: Mouse, (male)  
 Application Route: Dermal  
 Dose: 56.3 mg/kg  
 Frequency of Treatment: 3 daily  
 Result: negative

4,4'-isopropylidenediphenol:  
 Species: Rat, (male and female)  
 Application Route: Oral  
 Exposure time: 103 weeks  
 Frequency of Treatment: 7 daily  
 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.

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

**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.

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**Reproductive toxicity****Components:**

Diethylenetriamine:  
Effects on fertility

: Species: Rat, male and female  
Application Route: Oral  
General Toxicity - Parent: No observed adverse effect level:  
30 mg/kg wet weight  
Method: OECD Test Guideline 421

Aminoethylpiperazine:

Species: Rat, male and female  
Application Route: Oral  
Method: OECD Test Guideline 422  
Result: No effects on fertility and early embryonic  
development were detected.

4,4'-isopropylidenediphenol:

Species: Rat, male and female  
Application Route: Oral  
Method: OECD Test Guideline 416  
Result: Embryotoxic effects and adverse effects on the  
offspring were detected.

**Components:**

benzyl dimethylamine:  
Effects on foetal  
development

: Species: Rat  
Application Route: Oral  
Teratogenicity: No observed adverse effect level: 150 mg/kg  
body weight  
Method: OECD Test Guideline 414  
Result: No teratogenic effects

Diethylenetriamine:

Species: Rat  
Application Route: Oral  
General Toxicity Maternal: No observed adverse effect level:  
100 mg/kg body weight  
Method: OECD Test Guideline 421

Aminoethylpiperazine:

Species: Rat, male and female  
Application Route: Oral  
General Toxicity Maternal: No observed adverse effect level:  
224 - 285 mg/kg body weight  
Method: OECD Test Guideline 422  
Result: No teratogenic effects

4,4'-isopropylidenediphenol:

Species: Rat, female  
Application Route: Oral  
General Toxicity Maternal: No observed adverse effect level:  
< 160 mg/kg body weight  
Method: OECD Test Guideline 416  
Result: No teratogenic effects

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## Tetraethylenepentamine:

Species: Rabbit, female  
Application Route: Dermal  
General Toxicity Maternal: No-observed-effect level: 50 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No teratogenic effects

Species: Rat, female  
Application Route: Oral  
General Toxicity Maternal: No observed adverse effect level: 750 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No teratogenic effects

**Components:**

4,4'-isopropylidenediphenol:  
Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

**STOT - single exposure****Components:**

Diethylenetriamine:  
Target Organs: Respiratory Tract  
Assessment: May cause respiratory irritation.

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**

No data available

**Repeated dose toxicity****Components:**

benzyl dimethylamine:  
Species: Rat, male and female  
NOEL: 50 mg/kg  
Application Route: Ingestion  
Exposure time: 672 h  
Number of exposures: 7 d  
Method: Subacute toxicity

Species: Rat, male and female  
NOAEL: ca. 150 mg/kg  
Application Route: Ingestion  
Exposure time: 672 h  
Number of exposures: 7 d  
Method: Subacute toxicity

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Diethylenetriamine:  
Species: Rat, male and female  
: 70 - 80 mg/m<sup>3</sup>  
Application Route: Ingestion  
Test atmosphere: vapour  
Exposure time: 360 h  
Number of exposures: 7 d  
Method: Subchronic toxicity

Species: Rat, male and female  
NOAEL: 114 mg/kg/d  
Application Route: Skin contact  
Exposure time: 9,600 h  
Number of exposures: 6 d  
Method: Chronic toxicity

Aminoethylpiperazine:  
Species: Rat, male and female  
NOAEL: 151 - 285 mg/kg/d  
Application Route: Ingestion  
Exposure time: 672 h  
Method: Subacute toxicity

Species: Rat, male and female  
NOAEL: > 1000 mg/kg/d  
Application Route: Skin contact  
Exposure time: 696 h  
Number of exposures: 5 d  
Method: Subacute toxicity

4,4'-isopropylidenediphenol:  
Species: Dog, male and female  
: 75 mg/kg, 10 mg/m<sup>3</sup>  
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

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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

Repeated dose toxicity - Assessment : No data available

**Aspiration toxicity****Components:**

benzyltrimethylamine:  
May be harmful if swallowed and enters airways.

**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

**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Components:**

benzyltrimethylamine:  
Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 37.8 mg/l  
Exposure time: 96 h

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Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 203

Diethylenetriamine:  
Toxicity to fish : LC50: 430 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

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.

**Components:**

2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated:  
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1,000 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202

benzyl dimethylamine:  
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l  
Exposure time: 48 h  
Test Type: static test  
Test substance: Fresh water  
Method: Directive 67/548/EEC, Annex V, C.2.

Diethylenetriamine:  
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 32 mg/l  
Exposure time: 48 h  
Test Type: static test  
Test substance: Fresh water

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  
Remarks: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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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.

**Components:**

2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated:  
Toxicity to algae : EC50 (No information available.): > 1,000 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

benzyl dimethylamine:  
Toxicity to algae : ErC50 (Desmodesmus subspicatus (Scenedesmus  
subspicatus)): 1.34 mg/l  
Exposure time: 72 h  
Test Type: static test  
Test substance: Fresh water  
Method: Directive 67/548/EEC, Annex V, C.3.

EC10 (Desmodesmus subspicatus (Scenedesmus  
subspicatus)): 0.24 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: Directive 67/548/EEC, Annex V, C.3.

Diethylenetriamine:  
Toxicity to algae : EbC50 (Senastrum capricornutum (green algae)): 1,164  
mg/l  
Exposure time: 72 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 201

Aminoethylpiperazine:  
Toxicity to algae : EC50 (Senastrum capricornutum (green algae)): > 1,000  
mg/l  
Exposure time: 72 h  
Test substance: Fresh water  
Method: OECD Test Guideline 201

4,4'-isopropylidenediphenol:  
Toxicity to algae : EC50 (Senastrum capricornutum (green algae)): 2.5 - 3.1  
mg/l  
Exposure time: 96 h

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Tetraethylenepentamine:  
Toxicity to algae : ErC50 (Selenastrum capricornutum (green algae)): 6.8 mg/l  
Exposure time: 72 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : No data available

**Components:**

Diethylenetriamine:  
Toxicity to fish (Chronic toxicity) : NOEC: 10 mg/l  
Exposure time: 28 d  
Test Type: semi-static test  
Test substance: Fresh water  
Method: OECD Test Guideline 210

4,4'-isopropylidenediphenol:  
Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 0.016 mg/l  
Exposure time: 444 d  
Test Type: flow-through test  
Test substance: Fresh water  
Method: Fish Life Cycle Toxicity  
Remarks: Toxic to aquatic organisms.

**Components:**

benzyltrimethylamine:  
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.789 mg/l  
Exposure time: 21 d  
Test Type: semi-static test  
Test substance: Fresh water  
Method: Directive 67/548/EEC, Annex V, C.20

Diethylenetriamine:  
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 5.6 mg/l  
Exposure time: 21 d  
Test Type: semi-static test  
Test substance: Fresh water  
Method: Directive 67/548/EEC, Annex V, C.20

M-Factor (Chronic aquatic toxicity) : No data available

**Components:**

benzyltrimethylamine:  
Toxicity to bacteria : EC50 (Pseudomonas putida): 749.6 mg/l  
Exposure time: 17 h  
Test Type: static test  
Test substance: Fresh water  
Method: DIN 38 412 Part 8



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: EC10 (Pseudomonas putida): 534 mg/l  
 Exposure time: 17 h  
 Test Type: static test  
 Test substance: Fresh water  
 Method: DIN 38 412 Part 8

Tetraethylenepentamine:  
 Toxicity to bacteria

: EC50: 97.3 mg/l  
 Exposure time: 2 h  
 Test Type: static test  
 Test substance: Fresh water

**Components:**

Diethylenetriamine:  
 Toxicity to soil dwelling  
 organisms

: EC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg  
 Exposure time: 56 d  
 Method: OECD Test Guideline 222

Plant toxicity

: No data available

Sediment toxicity

: No data available

Toxicity to terrestrial  
 organisms

: No data available

Ecotoxicology Assessment

**Components:**

benzyl dimethylamine:  
 Acute aquatic toxicity

: Harmful to aquatic organisms.

Diethylenetriamine:  
 Acute aquatic toxicity

: This product has no known ecotoxicological effects.

**Components:**

benzyl dimethylamine:  
 Chronic aquatic toxicity

: Toxic to aquatic life with long lasting effects.

4,4'-isopropylidenediphenol:  
 Chronic aquatic toxicity

: Toxic to aquatic life with long lasting effects.

Toxicity Data on Soil

: No data available

Other organisms relevant to  
 the environment

: No data available

Further information:  
 No data available

**Persistence and degradability****Components:**

2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated:

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Biodegradability : Result: Not readily biodegradable.

benzyl dimethylamine:  
Biodegradability : Inoculum: activated sludge  
Concentration: 30 mg/l  
Result: Not readily biodegradable.  
Biodegradation: 0 - 2 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301C

Diethylenetriamine:  
Biodegradability : Inoculum: activated sludge  
Result: Readily biodegradable  
Biodegradation: 87 %  
Exposure time: 21 d  
Method: OECD Test Guideline 301D

Aminoethylpiperazine:  
Biodegradability : Inoculum: activated sludge  
Result: Not readily biodegradable.  
Biodegradation: 0 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F

4,4'-isopropylidenediphenol:  
Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 1 - 2 %  
Exposure time: 28 d

Tetraethylenepentamine:  
Biodegradability : Inoculum: activated sludge  
Result: Not biodegradable  
Biodegradation: 17 %  
Exposure time: 84 d  
Method: Inherent Biodegradability: Modified SCAS Test

**Components:**

Aminoethylpiperazine:  
Biochemical Oxygen Demand (BOD) : 5 mg/l  
Incubation time: 5 d

**Components:**

Aminoethylpiperazine:  
Chemical Oxygen Demand (COD) : 560 mg/l  
BOD/COD : No data available

ThOD : No data available

BOD/ThOD : No data available

Dissolved organic carbon (DOC) : No data available

Physico-chemical : No data available

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removability

Stability in water : No data available

**Components:**

Diethylenetriamine:

Photodegradation

: Test Type: Air  
 Rate constant: 500000  
 Degradation (direct photolysis): 50 %

Aminoethylpiperazine:

Photodegradation

: Test Type: Air  
 Degradation (direct photolysis): 50 %

Test Type: Water

Impact on Sewage Treatment

: No data available

**Bioaccumulative potential****Components:**

benzyltrimethylamine:

Bioaccumulation

: Species: Cyprinus carpio (Carp)  
 Bioconcentration factor (BCF): 2.1 - 22  
 Exposure time: 42 d  
 Test substance: Fresh water  
 Method: flow-through test  
 Remarks: Bioaccumulation is unlikely.

Species: Cyprinus carpio (Carp)  
 Bioconcentration factor (BCF): 2.1 - 6.4  
 Exposure time: 14 d  
 Test substance: Fresh water  
 Method: flow-through test  
 Remarks: Bioaccumulation is unlikely.

Diethylenetriamine:

Bioaccumulation

: Species: Cyprinus carpio (Carp)  
 Bioconcentration factor (BCF): 0.3 - 6.3  
 Exposure time: 42 d  
 Test substance: Fresh water  
 Method: flow-through test  
 Remarks: Bioaccumulation is unlikely.

Aminoethylpiperazine:

Bioaccumulation

: Species: Fish  
 Remarks: Does not bioaccumulate.

**Components:**

benzyltrimethylamine:

Partition coefficient: n-octanol/water

: log Pow: 1.98  
 pH: 13

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Diethylenetriamine:  
Partition coefficient: n-octanol/water : log Pow: -1.58 (20 °C)  
pH: 7

Aminoethylpiperazine:  
Partition coefficient: n-octanol/water : log Pow: -1.48 (20 °C)

Tetraethylenepentamine:  
Partition coefficient: n-octanol/water : log Pow: -3.16

**Mobility in soil**

Mobility : No data available

**Components:**

Diethylenetriamine:  
Distribution among environmental compartments : Koc: 19111  
Aminoethylpiperazine:  
Distribution among environmental compartments : Koc: ca. 37000  
Tetraethylenepentamine:  
Distribution among environmental compartments : Koc: 3.2 - 3.7 Method: OECD Test Guideline 106  
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.  
Harmful to aquatic life with long lasting effects.

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Global warming potential (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.  
Do not burn, or use a cutting torch on, the empty drum.

**SECTION 14. TRANSPORT INFORMATION****International Regulation****IATA**

UN/ID No. : UN 2735  
Proper shipping name : Polyamines, liquid, corrosive, n.o.s.  
(BENZYLDIMETHYLAMINE, DIETHYLENE TRIAMINE)  
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 : POLYAMINES, LIQUID, CORROSIVE, N.O.S.  
(BENZYLDIMETHYLAMINE, DIETHYLENE TRIAMINE)  
Class : 8  
Packing group : II  
Labels : 8  
EmS Code : F-A, S-B  
Marine pollutant : no

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

Not applicable for product as supplied.

**National Regulations**

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**DOT Classification**

UN/ID/NA number	: UN 2735
Proper shipping name	: POLYAMINES, LIQUID, CORROSIVE, N.O.S. (BENZYLDMETHYLAMINE, DIETHYLENE TRIAMINE)
Class	: 8
Packing group	: II
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** : No SARA Hazards

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

4,4'-	80-05-7	2.6225 %
isopropylidenediphenol		

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	80-05-7
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**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
TSCA	: On the inventory, or in compliance with the inventory
DSL	: This product contains one or several components listed in the Canadian NDSL.
AICS	: Not in compliance with the inventory
NZIoC	: Not in compliance with the inventory
ENCS	: Not in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory
PICCS	: Not in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory
TCSI	: Not 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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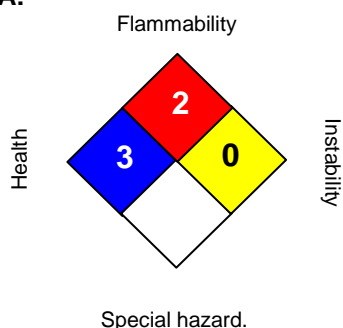
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**TSCA - 5(a) Significant New Use Rule List of Chemicals**

No substances are subject to a Significant New Use Rule.

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

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

**SECTION 16. OTHER INFORMATION****Further information****NFPA:****HMIS III:**

<b>HEALTH</b>	<b>3*</b>
<b>FLAMMABILITY</b>	<b>2</b>
<b>PHYSICAL HAZARD</b>	<b>0</b>

0 = not significant, 1 = Slight,

2 = Moderate, 3 = High

4 = Extreme, \* = Chronic

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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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