

SAFETY DATA SHEET

ARALDITE® AW 8680 US

Section 1. Identification

GHS product identifier : ARALDITE® AW 8680 US
Product code : 00066433
Other means of identification : Not available.
Product type : Liquid.
Material uses : Isocyanate for adhesive systems
Supplier's details : Huntsman Advanced Materials Americas LLC
P.O. Box 4980
The Woodlands, TX 77387

Non-Emergency phone: (800) 257-5547

e-mail address of person responsible for this SDS : MSDS@huntsman.com

Emergency telephone number (24h/7day) : Chemtrec: (800) 424-9300 or (703) 527-3887




Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : ACUTE TOXICITY (inhalation) - Category 4
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B
RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

GHS label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements : Harmful if inhaled.
Causes skin and eye irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause respiratory irritation.



Section 2. Hazards identification

Precautionary statements : Wear protective gloves: > 8 hours (breakthrough time): butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL). Wear eye or face protection. In case of inadequate ventilation wear respiratory protection. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. If experiencing respiratory symptoms: Call a POISON CENTER or physician. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. Store locked up. Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
1,2,3-Propanetriol, polymer with 1,1'-methylenebis [4-isocyanatobenzene], methyloxirane and oxirane	60 - 100	59675-67-1

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. In the event of any complaints or symptoms, avoid further exposure.
- Skin contact** : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Harmful if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : No specific treatment. Treat symptomatically. Call medical doctor or poison control center immediately if large quantities have been ingested.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

- Flash point** : Closed cup: >93°C (>199.4°F) [Estimated]
- Extinguishing media**
- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.
- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods and materials for containment and cleaning up** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store between the following temperatures: 2 to 40°C (35.6 to 104°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Section 8. Exposure controls/personal protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. > 8 hours (breakthrough time): butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL)
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Thermal hazards** : Not available.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Color** : milky white, White.
- Odor** : Slight
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point/Freezing point** : Not available.
- Boiling/condensation point** : Not available.
- Flash point** : Closed cup: >93°C (>199.4°F) [Estimated]
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : 1.14
- Solubility in water** : Reacts with water
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Not available.

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Test	Endpoint	Species	Result
1,2,3-Propanetriol, polymer with 1,1'-methylenebis [4-isocyanatobenzene], methyloxirane and oxirane	-	LD50 Oral	Rat	>2000 mg/kg

Irritation/Corrosion

Conclusion/Summary

- Skin** : 1,2,3-Propanetriol, polymer with 1,1'-methylenebis [4-isocyanatobenzene], methyloxirane and oxirane No additional information.
- Eyes** : 1,2,3-Propanetriol, polymer with 1,1'-methylenebis [4-isocyanatobenzene], methyloxirane and oxirane No additional information.
- Respiratory** : 1,2,3-Propanetriol, polymer with 1,1'-methylenebis [4-isocyanatobenzene], methyloxirane and oxirane No additional information.

Sensitization

Section 11. Toxicological information

Product/ingredient name	Test	Route of exposure	Species	Result
1,2,3-Propanetriol, polymer with 1,1'-methylenebis[4-isocyanatobenzene], methyloxirane and oxirane	-	skin	Guinea pig	Sensitizing
		Respiratory	Human	Sensitizing

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
1,2,3-Propanetriol, polymer with 1,1'-methylenebis[4-isocyanatobenzene], methyloxirane and oxirane	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Harmful if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma

Section 11. Toxicological information

- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

- General** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Inhalation (dusts and mists)	1.579 mg/l

- Other information** : Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Not available.

- Other adverse effects** : No known significant effects or critical hazards.

Section 12. Ecological information

Other ecological information

BOD5 : Not determined.

COD : Not determined.

TOC : Not determined.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14. Transport information

Proper shipping name

DOT : Not regulated.

TDG : Not regulated.

IMDG : Not regulated.

IATA : Not regulated.

Regulatory information	UN number	Classes	PG*	Label	Additional information
DOT Classification	Not regulated.	-	-		-
TDG Classification	Not regulated.	-	-		-
IMDG Classification	Not regulated.	-	-		-
IATA Classification	Not regulated.	-	-		-

PG* : Packing group

Section 15. Regulatory information

Safety, health and environmental regulations specific for the product

United States Regulations

- TSCA 8(b) inventory** : All components are listed or exempted.
- TSCA 5(a)2 final significant new use rule (SNUR)** : No ingredients listed.
- TSCA 5(e) substance consent order** : No ingredients listed.
- TSCA 12(b) export notification** : No ingredients listed.
- SARA 311/312** : Immediate (acute) health hazard
- Clean Air Act - Ozone Depleting Substances (ODS)** : This product does not contain nor is it manufactured with ozone depleting substances.
- SARA 313** : No ingredients listed.
- CERCLA Hazardous substances** : No ingredients listed.

State regulations

- PENNSYLVANIA - RTK** : No ingredients listed.
- California Prop 65** : This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

Canadian regulations

- CEPA DSL** : All components are listed or exempted.
- WHMIS Classes** : Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Brazil Regulations

- Classification system used** : Norma ABNT-NBR 14725-2:2012

International lists

- Australia inventory (AICS)**: All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: Not determined.
Korea inventory: At least one component is not listed.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): At least one component is not listed.
Philippines inventory (PICCS): At least one component is not listed.
Taiwan inventory (CSNN): Not determined.

Section 16. Other information

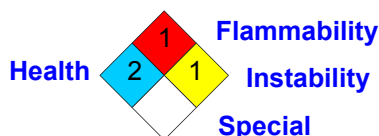
**Hazardous Material
Information System (U.S.A.)** :

Health	*	2
Flammability		1
Physical hazards		1
Personal protection		

The customer is responsible for determining the PPE code for this material.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

**National Fire Protection
Association (U.S.A.)** :



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Further information :

Date of printing : 3/3/2015.
Date of issue : 3/3/2015.
Date of previous issue : No previous validation.
Version : 1

▣ Indicates information that has changed from previously issued version.

ARALDITE® is a registered trademark of Huntsman Corporation or an affiliate thereof in one or more countries, but not all countries.

Notice to reader

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 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.

Section 16. Other information

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.

HARDENER HW 8685 US

Version 1.0 Revision Date: 08/06/2015 SDS Number: 400001012857 Date of last issue: -
Date of first issue: 08/06/2015

SECTION 1. IDENTIFICATION

Product name : HARDENER HW 8685 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 : Component of a Polyurethane System.

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Skin corrosion/irritation : Category 2

Serious eye damage/eye irritation : Category 1

Skin sensitization : Category 1

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.

Precautionary Statements : **Prevention:**
P280 Wear protective gloves/ eye protection/ face protection.
P273 Avoid release to the environment.
P264 Wash hands thoroughly after handling.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P362 + P364 Take off contaminated clothing and wash it before

HARDENER HW 8685 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	08/06/2015	400001012857	Date of first issue: 08/06/2015

reuse.

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

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 or doctor/ physician.

Disposal:

P501 Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
limestone	1317-65-3	13 - 30
1,1'-phenyliminodipropan-2-ol	3077-13-2	7 - 13
2-ethylhexane-1,3-diol	94-96-2	3 - 7
Terphenyl, hydrogenated	61788-32-7	1 - 3
cyclohex-1,2-ylenediamine	694-83-7	1 - 3
terphenyl	26140-60-3	0.1 - 1
phenylmercury acetate	62-38-4	0.1 - 1

SECTION 4. FIRST AID MEASURES

- General advice : No hazards which require special first aid measures.
- If inhaled : Move to fresh air in case of accidental inhalation of dust or fumes from overheating or combustion.
If symptoms persist, call a physician.
- In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
- In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
- Most important symptoms and effects, both acute and delayed : None known.

HARDENER HW 8685 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	08/06/2015	400001012857	Date of first issue: 08/06/2015

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : No data is available on the product itself.
- Specific extinguishing methods : No data is available on the product itself.
- Further information : Standard procedure for chemical fires.
- Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Not applicable for product as supplied.
- Environmental precautions : No special environmental precautions required.
- Methods and materials for containment and cleaning up : Wipe up with absorbent material (e.g. cloth, fleece).
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 : For personal protection see section 8.
No special handling advice required.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
- Materials to avoid : No special restrictions on storage with other products.

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

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Terphenyl, hydrogenated	61788-32-7	TWA	0.5 ppm	ACGIH
		TWA	0.5 ppm 5 mg/m ³	NIOSH REL

HARDENER HW 8685 US

Version 1.0	Revision Date: 08/06/2015	SDS Number: 400001012857	Date of last issue: - Date of first issue: 08/06/2015
----------------	------------------------------	-----------------------------	--

		TWA	0.5 ppm 5 mg/m ³	OSHA P0
--	--	-----	--------------------------------	---------

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

Hand protection

Material : butyl-rubber

Break through time : > 8 h

Solvent-resistant gloves (butyl-rubber)

Nitrile rubber

Neoprene gloves

PVC

butyl-rubber

10 - 480 min

Solvent-resistant gloves (butyl-rubber)

Nitrile rubber

Neoprene gloves

PVC

Remarks : For prolonged or repeated contact use protective gloves.

Eye protection : Safety glasses

Skin and body protection : Protective suit

Hygiene measures : General industrial hygiene practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : black

Odor : mild

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

pH : No data is available on the product itself.

Flash point : 96 °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.

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.

HARDENER HW 8685 US

Version 1.0 Revision Date: 08/06/2015 SDS Number: 400001012857 Date of last issue: -
Date of first issue: 08/06/2015

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

Relative density : 1.3 - 1.4

Density : No data is available on the product itself.

Solubility(ies)
Water solubility : slightly 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.

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 : Stable under recommended storage conditions.

Chemical stability : No decomposition if stored and applied as directed.

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

Conditions to avoid : No data available

SECTION 11. TOXICOLOGICAL INFORMATION

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

Acute toxicity**Ingredients:**

limestone:

Acute oral toxicityIngredients : LD50 (Rat): 6,450 mg/kg

1,1'-phenyliminodipropan-2-ol:

Acute oral toxicityIngredients : LD50 (Rat): 3,800 mg/kg

2-ethylhexane-1,3-diol:

Acute oral toxicityIngredients : LD50 (Rat, male and female): 4,636 - 9,281 mg/kg

Terphenyl, hydrogenated:

Acute oral toxicityIngredients : LD50 (Rat): > 10,000 mg/kg

HARDENER HW 8685 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	08/06/2015	400001012857	Date of first issue: 08/06/2015

cyclohex-1,2-ylenediamine:
Acute oral toxicityIngredients : LD50 (Rat, male and female): 1,170 mg/kg
Method: OECD Test Guideline 401
GLP: no

Ingredients:

2-ethylhexane-1,3-diol:
Acute inhalation toxicity : LC50 (Rat): 3.8 mg/l
Exposure time: 4 h
Test atmosphere: vapor

cyclohex-1,2-ylenediamine:
Acute inhalation toxicity : LC50 (Rat, male and female): 4.9 mg/l
Exposure time: 1 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Ingredients:

1,1'-phenyliminodipropan-2-ol:
Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

2-ethylhexane-1,3-diol:
Acute dermal toxicity : LD50 (Rabbit, male and female): 8,960 - 10,521 mg/kg

Terphenyl, hydrogenated:
Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

cyclohex-1,2-ylenediamine:
Acute dermal toxicity : LD50 (Rat): 1,870 mg/kg
Method: OECD Test Guideline 402
GLP: no

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

Skin corrosion/irritation**Product:**

Remarks: According to the classification criteria of the European Union, the product is not considered as being a skin irritant.

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

Remarks: According to the classification criteria of the European Union, the product is not

HARDENER HW 8685 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	08/06/2015	400001012857	Date of first issue: 08/06/2015

considered as being an eye irritant.

Respiratory or skin sensitization**Product:**

Remarks: No data available

Assessment: No data available

Germ cell mutagenicity**Ingredients:**

cyclohex-1,2-ylenediamine:
Genotoxicity in vitro

: Concentration: 15 - 1500 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: yes

Concentration: 33 - 1142 µg/L
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative
GLP: yes

Ingredients:

cyclohex-1,2-ylenediamine:
Genotoxicity in vivo

: Application Route: Inhalation
Exposure time: 13 Weeks
Dose: 1.6 - 160 mg/m³
Method: OECD Test Guideline 474
Result: negative
GLP: yes

Application Route: Oral
Dose: 75 - 750 mg/kg
Method: OECD Test Guideline 475
Result: negative
GLP: yes

Carcinogenicity

No data available

Carcinogenicity - Assessment : No data available

Reproductive toxicity**Ingredients:**

HARDENER HW 8685 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	08/06/2015	400001012857	Date of first issue: 08/06/2015

cyclohex-1,2-ylenediamine:
Effects on fertility : Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 416
GLP: yes

Ingredients:

2-ethylhexane-1,3-diol:
Effects on fetal development : Species: Rat, female
Application Route: Oral
General Toxicity Maternal: NOAEL (No observed adverse effect level): 1,000 mg/kg body weight
Result: No teratogenic effects.

Species: Rat, female
Application Route: Dermal
General Toxicity Maternal: NOAEL (No observed adverse effect level): 1,884 mg/kg body weight
Result: Teratogenic effects.

cyclohex-1,2-ylenediamine:
Species: Rat, male and female
Application Route: Oral
General Toxicity Maternal: NOAEL (No observed adverse effect level): ca. 184 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.
GLP: no

Reproductive toxicity - Assessment : No data available

STOT-single exposure

No data available

STOT-repeated exposure

No data available

Repeated dose toxicity**Ingredients:**

2-ethylhexane-1,3-diol:
Species: Rat, male and female
LOAEL (Lowest observed adverse effect level): 100 mg/kg
Application Route: Ingestion
Exposure time: 696 h
Number of exposures: 5 d
Method: Subacute toxicity

Species: Rat
NOAEL (No observed adverse effect level): 480 mg/kg
Application Route: Ingestion
Exposure time: 2,160 h
Method: Subchronic toxicity

HARDENER HW 8685 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	08/06/2015	400001012857	Date of first issue: 08/06/2015

Species: Rat, male and female
NOAEL (No observed adverse effect level): 3768 mg/kg
Application Route: Skin contact
Exposure time: 13 Weeks
Number of exposures: 5 d
Method: Subchronic toxicity

cyclohex-1,2-ylenediamine:
Species: Rat, male and female
NOEC: 16 mg/m³
Test atmosphere: dust/mist
Exposure time: 13 Weeks
Method: OECD Test Guideline 413

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

HARDENER HW 8685 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	08/06/2015	400001012857	Date of first issue: 08/06/2015

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

limestone:

Toxicity to fish : LC50: > 56,000 mg/l
Exposure time: 96 h

Terphenyl, hydrogenated:

Toxicity to fish : LC50: > 100 mg/l
Exposure time: 96 h

cyclohex-1,2-ylenediamine:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 200 mg/l
Exposure time: 48 h
Test substance: Fresh water
Method: DIN 38412
GLP: yes
Remarks: Toxic to aquatic organisms.

Ingredients:

cyclohex-1,2-ylenediamine:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 19.8 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202
GLP: no

phenylmercury acetate:

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia pulex (Water flea)): 0.005 - 0.6 mg/l
Exposure time: 3 h

Ingredients:

Terphenyl, hydrogenated:

Toxicity to algae : EC50: 56 mg/l
Exposure time: 96 h

cyclohex-1,2-ylenediamine:

Toxicity to algae : EC50: 29.6 mg/l
Exposure time: 72 h

Ingredients:

terphenyl:

M-Factor (Acute aquatic toxicity) : 1

Ingredients:

cyclohex-1,2-ylenediamine:

Toxicity to fish (Chronic toxicity) : GLP: yes

Ingredients:

HARDENER HW 8685 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	08/06/2015	400001012857	Date of first issue: 08/06/2015

limestone:

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC50 (Daphnia magna (Water flea)): > 350 mg/l
 Exposure time: 125 d
 Test Type: semi-static test
 Test substance: Fresh water

cyclohex-1,2-ylenediamine:

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 4.16 mg/l
 Exposure time: 21 d
 Test Type: semi-static test
 Test substance: Fresh water
 Method: OECD Test Guideline 211

phenylmercury acetate:

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.0019 - 0.0032 mg/l
 Exposure time: 21 d

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

Toxicity to bacteria : No data available

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:**

cyclohex-1,2-ylenediamine:

Biodegradability : Result: Readily biodegradable.
 Exposure time: 17 d
 Method: OECD Test Guideline 301D

Biochemical Oxygen Demand (BOD) : No data available

HARDENER HW 8685 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	08/06/2015	400001012857	Date of first issue: 08/06/2015

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

Ingredients:

cyclohex-1,2-ylenediamine:
Photodegradation : Rate constant: < .001
GLP: no

Impact on Sewage Treatment : No data available

Bioaccumulative potential

Bioaccumulation : No data available

Ingredients:

limestone:
Partition coefficient: n-octanol/water : log Pow: < 1
Method: No information available.

Terphenyl, hydrogenated:
Partition coefficient: n-octanol/water : log Pow: 6.5

cyclohex-1,2-ylenediamine:
Partition coefficient: n-octanol/water : log Pow: < -0.9 (20 °C)
pH: 7
Method: OECD Test Guideline 107
GLP: yes

Mobility in soil

Mobility : No data available

Distribution among environmental compartments : No data available

Stability in soil : No data available

Other adverse effects

HARDENER HW 8685 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	08/06/2015	400001012857	Date of first issue: 08/06/2015

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 : There is no data available for this product.

Global warming potential (GWP) : No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging : Empty remaining contents.
Empty containers should be taken to an approved waste handling site for recycling or disposal.

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

Not regulated as a dangerous good

IMDG

Not regulated as a dangerous good

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

Not applicable for product as supplied.

Domestic regulation

HARDENER HW 8685 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	08/06/2015	400001012857	Date of first issue: 08/06/2015

DOT Classification

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

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

EPCRA - Emergency Planning and Community Right-to-Know

SARA 311/312 Hazards : Chronic 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

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).

Pennsylvania Right To Know

1,3-Butadiene, homopolymer, hydroxy-terminated	69102-90-5	30 - 50 %
limestone	1317-65-3	20 - 30 %
Wollastonite (Ca(SiO ₃))	10101-39-0	20 - 30 %
1,1'-phenyliminodipropyl-2-ol	3077-13-2	5 - 10 %
2-ethylhexane-1,3-diol	94-96-2	5 - 10 %

California Prop 65

WARNING! This product contains a chemical known in the State of California to cause cancer.

4-vinylcyclohexene	100-40-3
buta-1,3-diene	106-99-0

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

4-vinylcyclohexene	100-40-3
buta-1,3-diene	106-99-0
phenylmercury acetate	62-38-4

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 : This product contains the following components listed on the Canadian NDSL. All other components are on the Canadian DSL.
AICS : Not in compliance with the inventory

HARDENER HW 8685 US

Version 1.0 Revision Date: 08/06/2015 SDS Number: 400001012857 Date of last issue: -
 Date of first issue: 08/06/2015

NZIoC : Not in compliance with the inventory
 ENCS : Not in compliance with the inventory
 ISHL : Not in compliance with the inventory
 KECI : Not in compliance with the inventory
 PICCS : Not in compliance with the inventory
 IECSC : On the inventory, or in compliance with the inventory

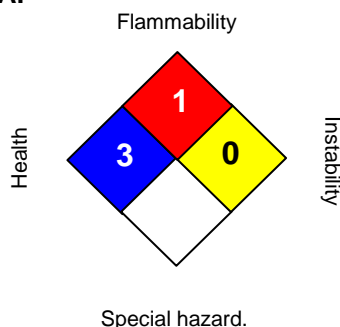
Inventories

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

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	3
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
 2 = Moderate, 3 = High
 4 = Extreme, * = Chronic

Revision Date : 08/06/2015

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 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.

HARDENER HW 8685 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	08/06/2015	400001012857	Date of first issue: 08/06/2015

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.