

# SAFETY DATA SHEET

ARALDITE 2045 POLYOL

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

### Identification of the substance or preparation

**Product name** : ARALDITE 2045 POLYOL  
**Product type** : Liquid.  
**Product description** : Preparation  
**Use of the substance/preparation** : Polyol for adhesive systems

**Supplier** : Huntsman Advanced Materials (Europe)BVBA  
 Everslaan 45  
 3078 Everberg / Belgium  
 Tel.: +41 61 299 20 41  
 Fax: +41 61 299 20 40

**Emergency telephone number** : EUROPE: +32 35 75 1234  
 France ORFILA: +33(0)145425959  
 ASIA: +65 6336-6011  
 China: +86 20 39377888  
 Australia: 1800 786 152  
 New Zealand: 0800 767 437  
 USA: +1/800/424.9300

For further Product EHS related questions concerning this document or its contents, please contact:

**E-Mail:**  
[global\\_product\\_ehs\\_admat@huntsman.com](mailto:global_product_ehs_admat@huntsman.com)

## 2. HAZARDS IDENTIFICATION

The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.

**Classification** : Not classified.  
**Physical/chemical hazards** : Not applicable.  
**Human health hazards** : Not applicable.  
**Environmental hazards** : Not applicable.

See section 11 for more detailed information on health effects and symptoms.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance/preparation** : Preparation

Ingredient name	CAS number	%	Number	Classification
kaolin	1332-58-7	13 - 30		Not classified. [2]
1,4-butanediol	110-63-4	3 - 7		Xn; R22 [1]
Limestone	1317-65-3	3 - 7		Not classified. [2]
<b>See section 16 for the full text of the R-phrases declared above</b>				

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

[3] PBT-substance

[4] vPvB-substance

**Date of issue/Date of revision** : 8/24/2009.

1/8

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

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

### 4. FIRST AID MEASURES

#### First-aid measures

- Inhalation** : Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Obtain medical attention if symptoms occur. 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.
- Ingestion** : Wash out mouth with water. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Obtain medical attention if symptoms occur.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Obtain medical attention if symptoms occur.
- 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 if irritation occurs.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.
- Notes to physician** : 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.

See section 11 for more detailed information on health effects and symptoms.

### 5. FIRE-FIGHTING MEASURES

#### Extinguishing media

**Suitable** : Use an extinguishing agent suitable for the surrounding fire.

**Not suitable** : None known.

**Special exposure hazards** : In a fire or if heated, a pressure increase will occur and the container may burst. 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.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides  
Carbon oxides, Burning produces obnoxious and toxic fumes.

**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.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions** : 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 spilt material. Put on appropriate personal protective equipment (see section 8).

**Environmental precautions** : Avoid dispersal of spilt 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 for cleaning up

**Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

## 6. ACCIDENTAL RELEASE MEASURES

- Large spill** : Stop leak if without risk. Move containers from spill area. 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. Note: see section 1 for emergency contact information and section 13 for waste disposal.

## 7. HANDLING AND STORAGE

- Handling** : Put on appropriate personal protective equipment (see section 8). 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.
- Storage** : 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. 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 unlabelled containers. Use appropriate containment to avoid environmental contamination.
- Storage temperature** : 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. 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. Store between the following temperatures: 2 to 40°C (35.6 to 104°F).
- Storage hazard class**  
**Huntsman Advanced**  
**Materials** : Storage class 12, Liquids, not dangerous
- Packaging materials**  
**Recommended** : Use original container.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<u>Ingredient name</u>	<u>Occupational exposure limits</u>
kaolin	<b>EH40/2005 WELs (United Kingdom (UK), 8/2007).</b> TWA: 2 mg/m <sup>3</sup> 8 hour(s). Form: respirable dust
Limestone	<b>EH40/2005 WELs (United Kingdom (UK), 8/2007).</b> TWA: 10 mg/m <sup>3</sup> 8 hour(s). Form: inhalable dust TWA: 4 mg/m <sup>3</sup> 8 hour(s). Form: respirable dust

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

### Exposure controls

- Occupational exposure controls** : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- 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. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- 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.
- Hand protection** : Material of gloves for long term application (BTT>480min):  
**(BTT = Break Through Time)**  
 Ethyl vinyl alcohol laminate (EVAL), butyl rubber  
 Material of gloves for short term/splash application (10min<BTT<480min):  
 nitrile rubber  
 Use gloves approved to relevant standards e.g. EN 374 (Europe), F739 (US). Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material and dexterity. Always seek advice from glove suppliers.  
 Additional information can be found for instance at [www.gisbau.de](http://www.gisbau.de).
- Eye 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 or dusts.
- Skin 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.
- 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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### General information

#### Appearance

- Physical state** : Liquid. [Paste.]  
**Colour** : Beige.  
**Odour** : Slight

### Important health, safety and environmental information

- Flash point** : Closed cup: >100°C (>212°F)  
**Decomposition temperature** : >200°C (>392°F)  
**Density** : 1.3 to 1.4 g/cm<sup>3</sup> [25°C (77°F)]  
**Water solubility** : Insoluble  
**Viscosity** : Dynamic: 40000 to 50000 mPa·s (40000 to 50000 cP)      20      deg C

## 10. STABILITY AND REACTIVITY

- 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.
- Materials to avoid** : strong acids, strong bases, strong oxidising agents
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.  
 Carbon oxides, Burning produces obnoxious and toxic fumes.

**11. TOXICOLOGICAL INFORMATION**Toxicokinetics

- Absorption** : Not available.  
**Distribution** : Not available.  
**Metabolism** : Not available.  
**Elimination** : Not available.

Potential acute health effects

- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.  
**Ingestion** : No known significant effects or critical hazards.  
**Skin contact** : No known significant effects or critical hazards.  
**Eye contact** : No known significant effects or critical hazards.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
ARALDITE 2045 POLYOL	LD50 Oral	Rat	>2000 mg/kg	-
<b>Conclusion/Summary</b>	: Not available.			

Potential chronic health effectsChronic toxicity

- Conclusion/Summary** : Not available.

Irritation/Corrosion

- Conclusion/Summary** : Not available.

Sensitiser

Product/ingredient name	Route of exposure	Species	Result
ARALDITE 2045 POLYOL	skin	Guinea pig	Not sensitizing
<b>Conclusion/Summary</b>	: Not available.		

Carcinogenicity

- Conclusion/Summary** : Not available.

Mutagenicity

- Conclusion/Summary** : Not available.

Teratogenicity

- Conclusion/Summary** : Not available.

Reproductive toxicity

- Conclusion/Summary** : Not available.

- Chronic effects** : No known significant effects or critical hazards.  
**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.

Over-exposure signs/symptoms

- Inhalation** : No specific data.  
**Ingestion** : No specific data.  
**Skin** : No specific data.  
**Eyes** : No specific data.

**12. ECOLOGICAL INFORMATION**

**Environmental effects** : No known significant effects or critical hazards.

**Aquatic ecotoxicity**

**Conclusion/Summary** : Not available.

**Biodegradability**

**Conclusion/Summary** : Not available.

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

**13. DISPOSAL CONSIDERATIONS**

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

**European waste catalogue (EWC)** : The relevant EU Directives and local, regional and national regulations must be complied with. It is among the tasks of the end user to assign the waste to waste codes specific to industrial sectors and processes according to the European Waste catalogue. It is recommended that the details be agreed with the waste disposer responsible.

070208

07 02 08\* other still bottoms and reaction residues

**Hazardous waste** : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 91/689/EEC.

**14. TRANSPORT INFORMATION****International transport regulations**

Regulatory information	UN number	Classes	Packing group	Label	Additional information
<b>ADR/RID Class</b>	Not regulated.	-	-		-
<b>IMDG Class</b>	Not regulated.	-	-		<b>Emergency schedules (EmS)</b>
<b>IATA Class</b>	Not regulated.	-	-		-

**15. REGULATORY INFORMATION****EU regulations**

Classification and labeling have been determined according to EU Directives 67/548/EEC and 1999/45/EC (including amendments) and take into account the intended product use.

**Risk phrases** : This product is not classified according to EU legislation.

**Safety phrases** : Not applicable.

**Other EU regulations**

**Additional warning phrases** : Contains piperazine. May produce an allergic reaction. Safety data sheet available for professional user on request.

**International regulations**

**Date of issue/Date of revision** : 8/24/2009.

**6/8**

**15. REGULATORY INFORMATION**

<b>International lists</b>	: Australia inventory (AICS): All components are listed or exempted. China inventory (IECSC): All components are listed or exempted. Japan inventory (ENCS): At least one component is not listed. Japan inventory (ISHL): Not determined. Korea inventory (KECI): All components are listed or exempted. New Zealand Inventory of Chemicals (NZIoC): Not determined. Philippines inventory (PICCS): At least one component is not listed. United States inventory (TSCA 8b): All components are listed or exempted. Europe inventory: All components are listed or exempted. Canada inventory: All components are listed or exempted.
----------------------------	---

**16. OTHER INFORMATION**

**Full text of R-phrases referred to in sections 2 and 3 - United Kingdom (UK)** : R22- Harmful if swallowed.

**Full text of classifications referred to in sections 2 and 3 - United Kingdom (UK)** : Xn - Harmful

**References**

Epoxy Resins and Curing Agents; Toxicology, Health, Safety and Environmental Aspects (Plastics Europe, May 2006)  
The provision of Safety Data Sheets comes under Regulation 6 of CHIP (CHIP is the recognised abbreviation for the Chemicals Hazard Information and Packaging Regulations). This is an addition to the Health and Safety at Work Act 1974.  
Users of products supplied by Huntsman Advanced Materials should take appropriate measures to ensure working practices are in accordance with the Control of Substances Hazardous to Health Regulations (COSHH).

**History**

<b>Date of printing</b>	: 8/24/2009.
<b>Date of issue/ Date of revision</b>	: 8/24/2009.
<b>Date of previous issue</b>	: No previous validation.
<b>Version</b>	: 1

✔ Indicates information that has changed from previously issued version.

**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.***

***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.***

**Enquiries should be addressed to your nearest Huntsman sales office or to:**

Huntsman Belgium (BVBA)  
Everslaan 45  
B-3078 Everberg  
Belgium  
Tel.: +32-(0)2-758-9211

**Date of issue/Date of revision** : 8/24/2009.

7/8

## 16. OTHER INFORMATION

**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.**