

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2028-1 GB POLYOL

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	27.04.2016	400001013922	Date of first issue: 27.04.2016

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : ARALDITE® 2028-1 GB POLYOL

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Component of a Polyurethane System.

1.3 Details of the supplier of the safety data sheet

Company : Huntsman Advanced Materials (Europe)BVBA
Address : Everslaan 45
3078 Everberg
Belgium
Telephone : +41 61 299 20 41
Telefax : +41 61 299 20 40
E-mail address of person responsible for the SDS : Global_Product_EHS_AdMat@huntsman.com

1.4 Emergency telephone number

Emergency telephone number : EUROPE: +32 35 75 1234
France ORFILA: +33(0)145425959
ASIA: +65 6336-6011
China: +86 20 39377888
+86 532 83889090
India: + 91 22 42 87 5333
Australia: 1800 786 152
New Zealand: 0800 767 437
USA: +1/800/424.9300

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Eye irritation, Category 2 H319: Causes serious eye irritation.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

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Hazard pictograms

:



Signal word

: Warning

Hazard statements

: H319

Causes serious eye irritation.

Precautionary statements

: **Prevention:**

P264

Wash skin thoroughly after handling.

P280

Wear eye protection/ face protection.

Response:

P305 + P351 + P338

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

P337 + P313

If eye irritation persists: Get medical advice/ attention.

Additional Labelling:

The following percentage of the mixture consists of ingredient(s) with unknown acute oral toxicity: 50 %

The following percentage of the mixture consists of ingredient(s) with unknown acute dermal toxicity: 50 %

The following percentage of the mixture consists of ingredient(s) with unknown acute inhalation toxicity: 50 %

The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 50 %

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

Chemical Name	CAS-No. EC-No. Registration number	Classification (REGULATION (EC) No 1272/2008)	Concentration (%)
[3-(2,3-Epoxypropoxy)propyl]trimethoxy silane	2530-83-8 219-784-2 -	Eye Dam. 1; H318	1 - 3

For explanation of abbreviations see section 16.

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SECTION 4: First aid measures

4.1 Description of 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. |

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	: No information available.
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SECTION 5: Firefighting measures

5.1 Extinguishing media

- | | |
|--------------------------------|---|
| 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. |

5.2 Special hazards arising from the substance or mixture

- | | |
|--------------------------------------|---|
| Specific hazards during firefighting | : No information available. |
| Hazardous combustion products | : No data is available on the product itself. |

5.3 Advice for firefighters

- | | |
|---|--|
| Special protective equipment for firefighters | : In the event of fire, wear self-contained breathing apparatus. |
| Specific extinguishing methods | : No data is available on the product itself. |

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Further information : Standard procedure for chemical fires.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Ensure adequate ventilation.

6.2 Environmental precautions

Environmental precautions : No special environmental precautions required.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Wipe up with absorbent material (e.g. cloth, fleece).
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

None

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : For personal protection see section 8.
No special handling advice required.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : General industrial hygiene practice.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place.

Advice on common storage : Strong acids

Strong bases

Strong oxidizing agents

No special restrictions on storage with other products.

Other data : No decomposition if stored and applied as directed.

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7.3 Specific end use(s)

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

(3-(2,3-Epoxypropoxy)propyl) trimethoxysilane	:	End Use: Workers
		Exposure routes: Dermal
		Potential health effects: Systemic effects, Long-term exposure
		Value: 21 mg/kg bw/day
		End Use: Workers
		Exposure routes: Inhalation
		Potential health effects: Systemic effects, Long-term exposure
		Value: 147 mg/m3
		End Use: Consumers
		Exposure routes: Oral
		Potential health effects: Systemic effects, Long-term exposure
		Value: 12.5 mg/kg bw/day
	End Use: Consumers	
	Exposure routes: Inhalation	
	Potential health effects: Systemic effects, Long-term exposure	
	Value: 43.5 mg/kg bw/day	
	End Use: Consumers	
	Exposure routes: Dermal	
	Potential health effects: Systemic effects, Long-term exposure	
	Value: 12.5 mg/kg bw/day	

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

(3-(2,3-Epoxypropoxy)propyl) trimethoxysilane	:	Fresh water
		Value: 1 mg/l
		Marine water
		Value: 0.1 mg/l
		Freshwater - intermittent
		Value: 1 mg/l
		Sewage treatment plant
		Value: 10 mg/l
		Fresh water sediment
		Value: 3.6 mg/kg
		Marine sediment
		Value: 0.36 mg/kg
	Soil	
	Value: 0.14 mg/kg	

8.2 Exposure controls

Engineering measures

Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Safety glasses

Hand protection

Material : butyl-rubber

Break through time : > 8 h

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Solvent-resistant gloves (butyl-rubber)
Nitrile rubber
10 - 480 min
Neoprene gloves

Remarks : For prolonged or repeated contact use protective gloves.

Skin and body protection : Protective suit

Respiratory protection : No personal respiratory protective equipment normally required.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : liquid

Colour : colourless

Odour : slight

Melting point/freezing point : No data available

Initial boiling point and boiling range : No data available

Flash point : > 100 °C
Method: closed cup

Solubility(ies)
Water solubility : insoluble (20 °C)

Viscosity
Viscosity, dynamic : 4,000 - 5,000 mPa.s (25 °C)

9.2 Other information

Molecular weight : No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : No hazards to be specially mentioned.

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10.4 Conditions to avoid

Conditions to avoid : No data available

10.5 Incompatible materials

Materials to avoid : No data available

10.6 Hazardous decomposition products

Burning produces noxious and toxic fumes.

Carbon oxides

Nitrogen oxides (NO_x)

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Components:

(3-(2,3-Epoxypropoxy)propyl) trimethoxysilane:

Acute oral toxicity : LD50 (Rat, male and female): 8,025 mg/kg
Method: OECD Test Guideline 401
Assessment: The substance or mixture has no acute oral toxicity

Components:

(3-(2,3-Epoxypropoxy)propyl) trimethoxysilane:

Acute inhalation toxicity : LC50 (Rat, male and female): > 5.3 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

Components:

(3-(2,3-Epoxypropoxy)propyl) trimethoxysilane:

Acute dermal toxicity : LD50 (Rabbit, male): 4,250 mg/kg
Method: OECD Test Guideline 402

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

Skin corrosion/irritation

Components:

(3-(2,3-Epoxypropoxy)propyl) trimethoxysilane:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

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Serious eye damage/eye irritation

Components:

(3-(2,3-Epoxypropoxy)propyl) trimethoxysilane:

Species: Rabbit

Assessment: Severe eye irritation

Method: OECD Test Guideline 405

Result: Risk of serious damage to eyes.

Respiratory or skin sensitisation

Components:

(3-(2,3-Epoxypropoxy)propyl) trimethoxysilane:

Exposure routes: Skin

Species: Guinea pig

Method: OECD Test Guideline 406

Result: Does not cause skin sensitisation.

Assessment: No data available

Germ cell mutagenicity

Components:

(3-(2,3-Epoxypropoxy)propyl) trimethoxysilane:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: positive

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

Components:

(3-(2,3-Epoxypropoxy)propyl) trimethoxysilane:

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

Application Route: Intraperitoneal injection
Dose: 1600 mg/kg
Result: negative

Application Route: Oral
Result: negative

Carcinogenicity

Components:

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(3-(2,3-Epoxypropoxy)propyl) trimethoxysilane:

Species: Mouse, (male)

Application Route: Dermal

Exposure time: 482 days

Dose: 5 mg/kg

Frequency of Treatment: 3 daily

Result: negative

Carcinogenicity - : No data available
Assessment

Reproductive toxicity

Components:

(3-(2,3-Epoxypropoxy)propyl) trimethoxysilane:

Effects on fertility : Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 415
Result: No effects on fertility and early embryonic development were detected.

Components:

(3-(2,3-Epoxypropoxy)propyl) trimethoxysilane:

Effects on foetal : Species: Rabbit, female
development Application Route: Oral
General Toxicity Maternal: No observed adverse effect level:
200 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

Reproductive toxicity - : No data available
Assessment

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Repeated dose toxicity

Components:

(3-(2,3-Epoxypropoxy)propyl) trimethoxysilane:

Species: Rat, male and female

NOEC: > 1000

Application Route: Ingestion

Test atmosphere: dust/mist

Exposure time: 672 h Number of exposures: 5 d

Method: OECD Test Guideline 412

Species: Rat, male and female

No observed adverse effect level: 1000

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Application Route: Ingestion
Exposure time: 2,160 hNumber of exposures: 7 d
Method: Subchronic toxicity

Repeated dose toxicity - : No data available
Assessment

Aspiration toxicity

No data available

Experience with human exposure

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

Product:

Remarks: No data available

SECTION 12: Ecological information

12.1 Toxicity

Product:

Further information

The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 50 %

Components:

(3-(2,3-Epoxypropoxy)propyl) trimethoxysilane:

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Toxicity to fish	: LC50 (Cyprinus carpio (Carp)): 55 mg/l Exposure time: 96 h Test Type: semi-static test Test substance: Fresh water Method: Directive 67/548/EEC, Annex V, C.1.
Toxicity to daphnia and other aquatic invertebrates	: LC50 : 324 mg/l Exposure time: 48 h Test Type: static test Test substance: Fresh water
Toxicity to algae	: EC50 : 119 mg/l Exposure time: 168 h Test Type: static test Test substance: Fresh water
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC: >= 100 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: semi-static test Test substance: Fresh water Method: OECD Test Guideline 211
Ecotoxicology Assessment Acute aquatic toxicity	: This product has no known ecotoxicological effects.
Chronic aquatic toxicity	: Harmful to aquatic life with long lasting effects.

12.2 Persistence and degradability

Components:

(3-(2,3-Epoxypropoxy)propyl) trimethoxysilane:

Biodegradability	: Inoculum: activated sludge Result: Not readily biodegradable. Biodegradation: 37 % Exposure time: 28 d Method: Directive 67/548/EEC Annex V, C.4.A.
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12.3 Bioaccumulative potential

Components:

(3-(2,3-Epoxypropoxy)propyl) trimethoxysilane:

Partition coefficient: n-octanol/water	: log Pow: -2.6 (25 °C)
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12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment	: This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of
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0.1% or higher..

12.6 Other adverse effects

Product:

Additional ecological information : Remarks: There is no data available for this product.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : 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

IATA

Not regulated as dangerous goods

IMDG

Not regulated as dangerous goods

ADR

Not regulated as dangerous goods

RID

Not regulated as dangerous goods

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

Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59) : Not applicable

EU Voluntary monitoring list for non-scheduled substances (Drug Precursors) : Not applicable

Seveso II - Directive 2003/105/EC amending Council Directive 96/82/EC on the control of major-accident hazards involving dangerous substances
Not applicable

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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
TSCA	: On TSCA Inventory
DSL	: This product contains the following components listed on the Canadian NDSL. All other components are on the Canadian DSL.
ISHL	: Not in compliance with the inventory
KECI	: On the inventory, or 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)

15.2 Chemical Safety Assessment

SECTION 16: Other information

Full text of H-Statements

H318 : Causes serious eye damage.

Full text of other abbreviations

Eye Dam. : Serious eye damage

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IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

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,

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