

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2028-1 ISOCYANATE

Version	Revision Date:	SDS Number:	Date of last issue: 12.05.2015
1.1	03.10.2018	400001015061	Date of first issue: 12.05.2015

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

1.1 Product identifier

Trade name : ARALDITE® 2028-1 ISOCYANATE

CAS-No. : 28182-81-2

EC-No. : -

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

Use of the Substance/Mixture : Adhesives

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 : Berlin: 0049 30 19 24 0 & 0049 30 30 68 6 7 11
Bonn: 0049 228 19 27 0 & 0049 228 28 7 3 32 11
Erfurt: 0049 361 73 07 30
Freiburg: 0049 761 16 24 0
Göttingen: 0049 51 19 24 0 & 0049 551 38 31 80
Homburg: 0049 6841 19 24 0
Mainz: 0049 6131 19 24 0 & 0049 6131 23 24 66
München: 0049 89 19 24 0
Nürnberg: 0049 911 39 8 2 45 1
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)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

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Version 1.1 Revision Date: 03.10.2018 SDS Number: 400001015061 Date of last issue: 12.05.2015
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Skin sensitisation, Category 1

H317: May cause an allergic skin reaction.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms

:



Signal word

: Warning

Hazard statements

: H317

May cause an allergic skin reaction.

Precautionary statements

: **Prevention:**

P261

Avoid breathing mist or vapours.

P272

Contaminated work clothing should not be allowed out of the workplace.

P280

Wear protective gloves.

Response:

P333 + P313

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

P362 + P364

Take off contaminated clothing and wash it before reuse.

Disposal:

P501

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

Additional Labelling:

EUH204

Contains isocyanates. May produce an allergic reaction.

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

3.1 Substances

Substance name : ARALDITE® 2028-1 GB ISOCYANATE

CAS-No. : 28182-81-2

EC-No. : -

Hazardous components

Chemical name	CAS-No. EC-No.	Concentration (% w/w)
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Version	Revision Date:	SDS Number:	Date of last issue: 12.05.2015
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Hexamethylene diisocyanate, oligomers	28182-81-2 Polymer	>= 90 - <= 100
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SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Treat symptomatically.
Get medical attention if symptoms occur.
- If inhaled : Call a physician or poison control centre immediately.
If inhaled, remove to fresh air.
Get medical attention if symptoms occur.
- In case of skin contact : If on skin, rinse well with water.
- In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

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 : Treat symptomatically.

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 : High volume water jet

5.2 Special hazards arising from the substance or mixture

- Specific hazards during firefighting : No information available.
- Hazardous combustion products : No hazardous combustion products are known

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

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Version	Revision Date:	SDS Number:	Date of last issue: 12.05.2015
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5.3 Advice for firefighters

- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.
- Specific extinguishing methods : No data is available on the product itself.
- Further information : No action shall be taken involving any personal risk or without suitable training.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Personal precautions : Use personal protective equipment.
Ensure adequate ventilation.
Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

- 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.

6.3 Methods and material for containment and cleaning up

- Methods for 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.

6.4 Reference to other sections

- For disposal considerations see section 13., See Section 1 for emergency contact information.,
For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Advice on safe handling : Avoid formation of aerosol.
Do not breathe vapours or spray mist.
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.
Provide sufficient air exchange and/or exhaust in work rooms.
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.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

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

Hygiene measures : Wash hands before breaks and at the end of workday.

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. Keep in properly labelled containers.

Advice on common storage : For incompatible materials please refer to Section 10 of this SDS.

Storage class (TRGS 510) : 10, Combustible liquids

Further information on storage stability : Stable under normal conditions.

Recommended storage temperature : 2 - 40 °C

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Personal protective equipment

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles

Hand protection
Material : butyl-rubber
Break through time : > 8 h

Material : Nitrile rubber
Break through time : 10 - 480 min

Material : Ethyl Vinyl Alcohol Laminate (EVAL)
Break through time : > 8 h

Remarks : The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Take note of the information given by the producer concerning permeability and break through times,

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2028-1 ISOCYANATE

Version	Revision Date:	SDS Number:	Date of last issue: 12.05.2015
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and of special workplace conditions (mechanical strain, duration of contact). The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines
Recommended Filter type:
Combined particulates and organic vapour type

Filter type : Filter type A-P

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	: liquid
Colour	: yellow
Odour	: slight
Odour Threshold	: No data is available on the product itself.
pH	: Not applicable
Melting point/range	: No data available
Boiling point/boiling range	: No data available
Flash point	: 181 °C Method: closed cup
Evaporation rate	: No data is available on the product itself.
Flammability (solid, gas)	: No data is available on the product itself.
Burning rate	: No data is available on the product itself.
Upper explosion limit / Upper flammability limit	: No data is available on the product itself.
Lower explosion limit / Lower flammability limit	: No data is available on the product itself.
Vapour pressure	: < 0,0001 hPa (20 °C)
Relative vapour density	: No data is available on the product itself.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

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ARALDITE® 2028-1 ISOCYANATE

Version	Revision Date:	SDS Number:	Date of last issue: 12.05.2015
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Relative density : 1,14 (20 °C)

Density : ca. 1,14 g/cm³ (20 °C)

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

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 : ca. 480 °C
Method: DIN Method, other

Decomposition temperature : No data is available on the product itself.

Viscosity
Viscosity, dynamic : 10 000 mPa.s (23 °C)
Method: ISO 3219

Explosive properties : No data is available on the product itself.

Oxidizing properties : No data is available on the product itself.

9.2 Other information

Molecular weight : No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No hazards to be specially mentioned.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

Materials to avoid : None known.

10.6 Hazardous decomposition products

Carbon oxides
Nitrogen oxides (NO_x)

SAFETY DATA SHEET

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HUNTSMAN

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Version	Revision Date:	SDS Number:	Date of last issue: 12.05.2015
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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Components:

Hexamethylene diisocyanate, oligomers:

Acute oral toxicity : LD50 (Rat): > 5 000 mg/kg

Acute inhalation toxicity : No data available

Components:

Hexamethylene diisocyanate, oligomers:

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

Assessment: The substance or mixture has no acute dermal toxicity

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

Skin corrosion/irritation

Components:

Hexamethylene diisocyanate, oligomers:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

Serious eye damage/eye irritation

Components:

Hexamethylene diisocyanate, oligomers:

Species: Rabbit

Method: OECD Test Guideline 405

Result: No eye irritation

Respiratory or skin sensitisation

Components:

Hexamethylene diisocyanate, oligomers:

Exposure routes: Skin

Species: Guinea pig

Assessment: May cause sensitisation by skin contact.

Method: OECD Test Guideline 406

Assessment: No data available

SAFETY DATA SHEET

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Germ cell mutagenicity

Components:

Hexamethylene diisocyanate, oligomers:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Result: negative

Genotoxicity in vivo : No data available

Carcinogenicity

No data available

Carcinogenicity - Assessment : No data available

Reproductive toxicity

Effects on fertility : No data available

Effects on foetal development : No data available

Reproductive toxicity - Assessment : No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Repeated dose toxicity

Components:

Hexamethylene diisocyanate, oligomers:

Species: Rat

NOEC: 3,7 - 4,3

Exposure time: 3 Weeks

Species: Rat

NOEC: 3,3 - 3,4

Exposure time: 2 160 h

Repeated dose toxicity - Assessment : No data available

Aspiration toxicity

No data available

Experience with human exposure

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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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

Ingestion: No data available

SECTION 12: Ecological information

12.1 Toxicity

Components:

Hexamethylene diisocyanate, oligomers:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 100 mg/l
Exposure time: 96 h

Toxicity to daphnia and other : LC50 (Daphnia magna (Water flea)): > 100 mg/l
aquatic invertebrates Exposure time: 48 h

Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): > 1 000
mg/l
Exposure time: 72 h

Toxicity to microorganisms : EC50 (activated sludge): > 1 000 mg/l
Exposure time: 3 h

12.2 Persistence and degradability

Components:

SAFETY DATA SHEET

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Hexamethylene diisocyanate, oligomers:

Biodegradability : Result: Not biodegradable
Biodegradation: 0 %
Exposure time: 28 d

12.3 Bioaccumulative potential

No data available

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 0.1% or higher..

12.6 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.
Dispose of as hazardous waste in compliance with local and national regulations.
Dispose of contents/ container to an approved waste disposal plant.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14: Transport information

IATA

Not regulated as dangerous goods

IMDG

Not regulated as dangerous goods

ADR

Not regulated as dangerous goods

RID

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Not regulated as dangerous goods

14.7 Transport in bulk according to Annex II of Marpol 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). : This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

REACH - List of substances subject to authorisation - Future sunset date : Not applicable

Water contaminating class (Germany) : WGK 1 slightly hazardous to water

TA Luft List (Germany) : Total dust:
Not applicable
: Inorganic substances in powdered form:
Not applicable
: Inorganic substances in vapour or gaseous form:
Not applicable
: Organic Substances:
portionClass 1: 0,3 %

: Carcinogenic substances:
Not applicable
: Mutagenic:
Not applicable
: Toxic to reproduction:
Not applicable

Other regulations:

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

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

DSL : All components of this product are on the Canadian DSL

AICS : On the inventory, or in compliance with the inventory

NZIoC : On the inventory, or in compliance with the inventory

ENCS : On the inventory, or in compliance with the inventory

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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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

TCSI : On the inventory, or in compliance with the inventory

TSCA : On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), ENCS (Japan), KECI (Korea), NZIOC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (United States of America (USA))

15.2 Chemical safety assessment

Chemical Safety Assessments for all substances in this product are either Complete or Not applicable.

SECTION 16: Other information

Further information

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.

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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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