

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**HUNTSMAN**

Enriching lives through innovation

## ARALDITE® 203 RESIN

|         |                |              |
|---------|----------------|--------------|
| Version | Revision Date: | MSDS Number: |
| 1.1     | 08.05.2015     | 400001009866 |

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

#### 1.1 Product identifier

Trade name : ARALDITE® 203 RESIN

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

Use of the : Adhesives  
Substance/Mixture

#### 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

E-mail address to request full REACH registration number upon  
EU member State Authority request :  
REACH\_Registration\_Nr\_AM@huntsman.com

#### 1.4 Emergency telephone

Emergency telephone : Centres Antipoison et de Toxicovigilance:  
ANGERS: 02 41 48 21 21  
BORDEAUX: 05 56 96 40 80  
LILLE: 0 825 812 822  
LYON: 04 72 11 69 11  
MARSEILLE 04 91 75 25 25  
NANCY: 03 83 32 36 36  
PARIS: 01 40 05 48 48  
RENNES: 02 99 59 22 22  
STRASBOURG: 03 88 37 37 37  
TOULOUSE: 05 61 77 74 47  
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

**ARALDITE® 203 RESIN**

|         |                |              |
|---------|----------------|--------------|
| Version | Revision Date: | MSDS Number: |
| 1.1     | 08.05.2015     | 400001009866 |

**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

**Classification (REGULATION (EC) No 1272/2008)**

|                                      |                                                        |
|--------------------------------------|--------------------------------------------------------|
| Skin irritation, Category 2          | H315: Causes skin irritation.                          |
| Serious eye damage, Category 1       | H318: Causes serious eye damage.                       |
| Skin sensitization, Category 1       | H317: May cause an allergic skin reaction.             |
| Chronic aquatic toxicity, Category 2 | H411: Toxic to aquatic life with long lasting effects. |

**2.2 Label elements**

**Labeling (REGULATION (EC) No 1272/2008)**

Hazard pictograms :



Signal Word : Danger

|                   |      |                                                  |
|-------------------|------|--------------------------------------------------|
| Hazard Statements | H315 | Causes skin irritation.                          |
|                   | H317 | May cause an allergic skin reaction.             |
|                   | H318 | Causes serious eye damage.                       |
|                   | H411 | Toxic to aquatic life with long lasting effects. |

|                          |                           |                                                                                                                                                                                         |
|--------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Precautionary Statements | <b>Prevention:</b>        |                                                                                                                                                                                         |
|                          | P261                      | Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.                                                                                                                                  |
|                          | P273                      | Avoid release to the environment.                                                                                                                                                       |
|                          | P280                      | Wear eye protection/ face protection.                                                                                                                                                   |
|                          | P280                      | Wear protective gloves.                                                                                                                                                                 |
|                          | <b>Response:</b>          |                                                                                                                                                                                         |
|                          | 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. |
|                          | P362 + P364               | Take off contaminated clothing and wash it before reuse.                                                                                                                                |

Hazardous ingredients which must be listed on the label:

4,4'-methylenebis[N,N-bis(2,3-epoxypropyl)aniline]

1,4-bis(2,3-epoxypropoxy)butane

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight  $\leq 700$ )

**2.3 Other hazards**

None known.

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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Version 1.1      Revision Date: 08.05.2015      MSDS Number: 400001009866

### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures

##### Hazardous ingredients

| Chemical Name                                                                                  | CAS-No.<br>EC-No.<br>Registration number         | Classification<br>(REGULATION (EC)<br>No 1272/2008)                                                                                              | Concentration<br>(%) |
|------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| 4,4'-Methylenebis[N,N-bis(2,3-epoxypropyl)aniline]                                             | 28768-32-3<br>249-204-3<br>01-2119472303-45-0000 | Skin Sens. 1B; H317<br>Aquatic Chronic 2;<br>H411                                                                                                | >= 60 -<br><= 100    |
| 4,4'-Isopropylidenediphenol,<br>oligomeric reaction products with<br>1-chloro-2,3-epoxypropane | 25068-38-6<br>500-033-5<br>01-2119456619-26-0001 | Skin Sens. 1; H317<br>Aquatic Chronic 2;<br>H411<br>Eye Irrit. 2; H319<br>Skin Irrit. 2; H315                                                    | >= 1 -<br><= 3       |
| 1,4-Bis(2,3-epoxypropoxy)butane                                                                | 2425-79-8<br>219-371-7<br>01-2119494060-45-0003  | Acute Tox. 4; H302,<br>H312<br>Eye Dam. 1; H318<br>Skin Irrit. 2; H315<br>Skin Sens. 1; H317<br>Acute Tox. 4; H332<br>Aquatic Chronic 3;<br>H412 | >= 7 -<br><= 13      |

For explanation of abbreviations see section 16.

### SECTION 4: First aid measures

#### 4.1 Description of first-aid measures

- If inhaled : Move to fresh air.  
Keep patient warm and at rest.  
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.  
If symptoms persist, call a physician.
- In case of eye contact : Immediately flush eye(s) with plenty of water.  
Remove contact lenses.  
Seek medical advice.
- If swallowed : Rinse mouth with water.  
Do NOT induce vomiting.  
Consult a physician if necessary.

#### 4.2 Most important symptoms and effects, both acute and delayed

None known.

# SAFETY DATA SHEET

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## ARALDITE® 203 RESIN

|         |                |              |
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| Version | Revision Date: | MSDS Number: |
| 1.1     | 08.05.2015     | 400001009866 |

### 4.3 Indication of any immediate medical attention and special treatment needed

## 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 : None known.

### 5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting : Do not use a solid water stream as it may scatter and spread fire.  
Do not allow run-off from fire fighting to enter drains or water courses.

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

### 5.3 Advice for firefighters

Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.

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

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

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.  
Ensure adequate ventilation.

### 6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.  
Do not allow contact with soil, surface or ground water.

### 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

None

**ARALDITE® 203 RESIN**

|         |                |              |
|---------|----------------|--------------|
| Version | Revision Date: | MSDS Number: |
| 1.1     | 08.05.2015     | 400001009866 |

**SECTION 7: Handling and storage**

**7.1 Precautions for safe handling**

- |                                                 |                                                                                                                                                                                                                                          |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Advice on safe handling                         | : Avoid contact with skin and eyes.<br>For personal protection see section 8.<br>Smoking, eating and drinking should be prohibited in the application area.<br>Dispose of rinse water in accordance with local and national regulations. |
| Advice on protection against fire and explosion | : Normal measures for preventive fire protection.                                                                                                                                                                                        |
| Hygiene measures                                | : Handle in accordance with good industrial hygiene and safety practice. When using do not eat, drink or smoke. 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 containers tightly closed in a dry, cool and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. |
| Advice on common storage                      | : Strong bases<br><br>Strong oxidizing agents                                                                                                                          |
| Storage class (TRGS 510)                      | : 10, Combustible liquids                                                                                                                                              |
| Other data                                    | : No decomposition if stored and applied as directed.                                                                                                                  |

**7.3 Specific end use(s)**

**SECTION 8: Exposure controls/personal protection**

**8.1 Control parameters**

**8.2 Exposure controls**

**Personal protective equipment**

- |                    |                                                                                                                                                                                                                                                                                               |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eye protection     | : Safety glasses                                                                                                                                                                                                                                                                              |
| Hand protection    |                                                                                                                                                                                                                                                                                               |
| Material           | : butyl-rubber                                                                                                                                                                                                                                                                                |
| Break through time | : > 8 h<br>Nitrile rubber<br>Neoprene<br>10 - 480 min                                                                                                                                                                                                                                         |
| Remarks            | : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). |

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according to Regulation (EC) No. 1907/2006

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|         |                |              |
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| Version | Revision Date: | MSDS Number: |
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|                          |                                                                                                                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Skin and body protection | : Protective suit                                                                                                                                                                 |
| Respiratory protection   | : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. |

### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

|                           |                                               |
|---------------------------|-----------------------------------------------|
| Appearance                | : paste                                       |
| Color                     | : blue                                        |
| Odor                      | : slight                                      |
| Flash point               | : > 100 °C<br>Method: closed cup              |
| Density                   | : 1,25 g/cm <sup>3</sup> (20 °C)              |
| Solubility(ies)           |                                               |
| Water solubility          | : insoluble (20 °C)                           |
| Decomposition temperature | : > 200 °C                                    |
| Viscosity                 | : No data is available on the product itself. |

#### 9.2 Other information

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 | : Stable under normal conditions. |
|---------------------|-----------------------------------|

#### 10.4 Conditions to avoid

|                     |               |
|---------------------|---------------|
| Conditions to avoid | : None known. |
|---------------------|---------------|

#### 10.5 Incompatible materials

|                    |                                                            |
|--------------------|------------------------------------------------------------|
| Materials to avoid | : Strong acids and strong bases<br>Strong oxidizing agents |
|--------------------|------------------------------------------------------------|

# SAFETY DATA SHEET

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| Version | Revision Date: | MSDS Number: |
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### 10.6 Hazardous decomposition products

Burning produces obnoxious and toxic fumes., Carbon oxides, Nitrogen oxides (NOx)

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

##### Ingredients:

4,4'-methylenebis[N,N-bis(2,3-epoxypropyl)aniline]:

Acute oral toxicity : LD50 (Mouse, male and female): > 5.000 mg/kg  
Method: OECD Test Guideline 401

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight  $\leq$  700):

Acute oral toxicity : LD50 (Rat, female): > 2.000 mg/kg  
Method: OECD Test Guideline 420  
GLP: yes

1,4-bis(2,3-epoxypropoxy)butane:

Acute oral toxicity : LD50 (Rat, male and female): 1.163 mg/kg  
Method: OECD Test Guideline 401  
GLP: yes

Acute inhalation toxicity - : Acute toxicity estimate : > 20 mg/l  
Product Exposure time: 4 h  
Test atmosphere: vapor  
Method: Calculation method

##### Ingredients:

4,4'-methylenebis[N,N-bis(2,3-epoxypropyl)aniline]:

Acute dermal toxicity : LD50 (Rabbit, male and female): > 3.000 mg/kg  
Method: OECD Test Guideline 402

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight  $\leq$  700):

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg  
Method: OECD Test Guideline 402  
GLP: yes

1,4-bis(2,3-epoxypropoxy)butane:

Acute dermal toxicity : LD50 (Rat, male and female): > 2.150 mg/kg  
GLP: no

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

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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## ARALDITE® 203 RESIN

|         |                |              |
|---------|----------------|--------------|
| Version | Revision Date: | MSDS Number: |
| 1.1     | 08.05.2015     | 400001009866 |

### Skin corrosion/irritation

#### Ingredients:

4,4'-methylenebis[N,N-bis(2,3-epoxypropyl)aniline]:

Species: Rabbit

Assessment: Mild skin irritant

Method: OECD Test Guideline 404

Result: Normally reversible injuries

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight  $\leq$  700):

Species: Rabbit

Assessment: Mild skin irritant

Method: OECD Test Guideline 404

Result: Irritating to skin.

GLP: yes

1,4-bis(2,3-epoxypropoxy)butane:

Species: Rabbit

Assessment: No skin irritation

Method: OECD Test Guideline 404

Result: Based on Human Evidence

GLP: yes

### Serious eye damage/eye irritation

#### Ingredients:

4,4'-methylenebis[N,N-bis(2,3-epoxypropyl)aniline]:

Species: Rabbit

Assessment: Mild eye irritant

Result: Normally reversible injuries

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight  $\leq$  700):

Species: Rabbit

Assessment: Mild eye irritant

Method: OECD Test Guideline 405

Result: Irritating to eyes.

GLP: yes

1,4-bis(2,3-epoxypropoxy)butane:

Species: Rabbit

Assessment: Severe eye irritation

Method: OECD Test Guideline 405

Result: Irreversible effects on the eye

GLP: yes

### Respiratory or skin sensitization

#### Ingredients:

2-Oxiranemethanamine, N,N'-(methylenedi-4,1-phenylene)bis[N-(2-oxiranylmethyl)-]:

Routes of exposure: Skin

Species: Guinea pig

Method: OECD Test Guideline 406

Result: Weak sensitiser

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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## ARALDITE® 203 RESIN

|         |                |              |
|---------|----------------|--------------|
| Version | Revision Date: | MSDS Number: |
| 1.1     | 08.05.2015     | 400001009866 |

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane:

Routes of exposure: Skin

Species: Mouse

Method: OECD Test Guideline 429

Result: Causes sensitization.

Oxirane, 2,2'-[1,4-butanediylbis(oxymethylene)]bis-:

Routes of exposure: Skin

Species: Guinea pig

Method: OECD Test Guideline 406

Result: Causes sensitization.

Assessment: No data available

### Germ cell mutagenicity

#### Ingredients:

4,4'-methylenebis[N,N-bis(2,3-epoxypropyl)aniline]:

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

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight  $\leq$  700):

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

: Concentration: 0 - 5000 ug/plate  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: positive  
GLP: no

1,4-bis(2,3-epoxypropoxy)butane:

Genotoxicity in vitro : Concentration: 10 - 5000 ug/plate  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: positive  
GLP: yes

: Concentration: 1 - 100 µg/L  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 473  
Result: positive

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**HUNTSMAN**

Enriching lives through innovation

## ARALDITE® 203 RESIN

|         |                |              |
|---------|----------------|--------------|
| Version | Revision Date: | MSDS Number: |
| 1.1     | 08.05.2015     | 400001009866 |

GLP: yes

### Ingredients:

4,4'-methylenebis[N,N-bis(2,3-epoxypropyl)aniline]:

Genotoxicity in vivo : Application Route: Oral  
Method: OECD Test Guideline 474  
Result: negative

Cell type: Germ  
Application Route: Oral  
Exposure time: 5 d  
Method: OECD Test Guideline 483  
Result: negative  
GLP: yes

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight  $\leq$  700):

Genotoxicity in vivo : Cell type: Germ  
Application Route: Oral  
Method: OECD Test Guideline 478  
Result: negative  
GLP: no

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

1,4-bis(2,3-epoxypropoxy)butane:

Genotoxicity in vivo : Cell type: Somatic  
Application Route: Oral  
Exposure time: 4 d  
Dose: 187.5 - 750 mg/kg  
Method: OECD Test Guideline 474  
Result: negative  
GLP: yes

### **Carcinogenicity**

#### Ingredients:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight  $\leq$  700):

Species: Rat, (male and female)  
Application Route: Oral  
Exposure time: 24 month(s)  
Dose: 15 mg/kg  
Frequency of Treatment: 7 daily

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**HUNTSMAN**

Enriching lives through innovation

## ARALDITE® 203 RESIN

|         |                |              |
|---------|----------------|--------------|
| Version | Revision Date: | MSDS Number: |
| 1.1     | 08.05.2015     | 400001009866 |

Method: OECD Test Guideline 453  
Result: negative

Species: Mouse, (male)  
Application Route: Dermal  
Exposure time: 24 month(s)  
Dose: .1 mg/kg  
Frequency of Treatment: 3 daily  
Method: OECD Test Guideline 453  
Result: negative

Species: Rat, (female)  
Application Route: Dermal  
Exposure time: 24 month(s)  
Dose: 1 mg/kg  
Frequency of Treatment: 5 daily  
Method: OECD Test Guideline 453  
Result: negative

Carcinogenicity - : No data available  
Assessment

### Reproductive toxicity

#### Ingredients:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight  $\leq$  700):

Effects on fertility : Species: Rat, male and female  
Application Route: Oral  
Method: OECD Test Guideline 416

#### Ingredients:

4,4'-methylenebis[N,N-bis(2,3-epoxypropyl)aniline]:

Effects on fetal development : Species: Rat, female  
Application Route: Oral  
General Toxicity Maternal: NOAEL (No observed adverse effect level): 90 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No teratogenic effects.

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight  $\leq$  700):

Species: Rabbit, female  
Application Route: Dermal  
General Toxicity Maternal: NOAEL (No observed adverse effect level): 30 mg/kg body weight  
Method: Other guidelines  
Result: No teratogenic effects.  
GLP: yes

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

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**HUNTSMAN**

Enriching lives through innovation

## ARALDITE® 203 RESIN

|         |                |              |
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| Version | Revision Date: | MSDS Number: |
| 1.1     | 08.05.2015     | 400001009866 |

Result: No teratogenic effects.  
GLP: yes

Species: Rat, female  
Application Route: Oral  
General Toxicity Maternal: NOAEL (No observed adverse effect level): 180 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No teratogenic effects.  
GLP: yes

Reproductive toxicity - Assessment : No data available

### STOT-single exposure

No data available

### STOT-repeated exposure

No data available

### Repeated dose toxicity

#### Ingredients:

4,4'-methylenebis[N,N-bis(2,3-epoxypropyl)aniline]:

Species: Rat, male and female

NOAEL (No observed adverse effect level): 50

Application Route: Ingestion

Exposure time: 13 WeeksNumber of exposures: 7 d

Method: Subchronic toxicity

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight  $\leq$  700):

Species: Rat, male and female

NOAEL (No observed adverse effect level): 50 mg/kg

Application Route: Ingestion

Exposure time: 14 WeeksNumber of exposures: 7 d

Method: Subchronic toxicity

Species: Rat, male and female

No-observed-effect level: 10 mg/kg

Application Route: Skin contact

Exposure time: 13 WeeksNumber of exposures: 5 d

Method: Subchronic toxicity

Species: Mouse, male

NOAEL (No observed adverse effect level): 100 mg/kg

Application Route: Skin contact

Exposure time: 13 WeeksNumber of exposures: 3 d

Method: Subchronic toxicity

1,4-bis(2,3-epoxypropoxy)butane:

Species: Rat, male and female

NOAEL (No observed adverse effect level): 200 mg/kg

Application Route: Ingestion

Exposure time: 672 hNumber of exposures: 7 d

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**HUNTSMAN**

Enriching lives through innovation

## ARALDITE® 203 RESIN

|         |                |              |
|---------|----------------|--------------|
| Version | Revision Date: | MSDS Number: |
| 1.1     | 08.05.2015     | 400001009866 |

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

Ingestion: No data available

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Ingredients:

4,4'-methylenedibis[N,N-bis(2,3-epoxypropyl)aniline]:

Toxicity to fish : LC50 (Cyprinus carpio (Carp)): > 6 - < 8 mg/l  
Exposure time: 96 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 203

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700):

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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## ARALDITE® 203 RESIN

|         |                |              |
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| Version | Revision Date: | MSDS Number: |
| 1.1     | 08.05.2015     | 400001009866 |

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,5 mg/l  
Exposure time: 96 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 203  
GLP: no

1,4-bis(2,3-epoxypropoxy)butane:  
Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): 24 mg/l  
Exposure time: 96 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 203  
GLP: no

### Ingredients:

4,4'-methylenebis[N,N-bis(2,3-epoxypropyl)aniline]:  
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 4,7 mg/l  
Exposure time: 48 h  
Test Type: semi-static test  
Test substance: Fresh water  
Method: OECD Test Guideline 202

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight  $\leq$  700):

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1,7 mg/l  
Exposure time: 48 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 202  
GLP: yes

1,4-bis(2,3-epoxypropoxy)butane:  
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 75 mg/l  
Exposure time: 24 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 202  
GLP: no

### Ingredients:

4,4'-methylenebis[N,N-bis(2,3-epoxypropyl)aniline]:  
Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): > 11 mg/l  
Exposure time: 72 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 201

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight  $\leq$  700):

Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 9,4 mg/l  
Exposure time: 72 h  
Test Type: static test  
Test substance: Fresh water  
Method: EPA-660/3-75-009

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**HUNTSMAN**

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## ARALDITE® 203 RESIN

|         |                |              |
|---------|----------------|--------------|
| Version | Revision Date: | MSDS Number: |
| 1.1     | 08.05.2015     | 400001009866 |

GLP: no

1,4-bis(2,3-epoxypropoxy)butane:

Toxicity to algae : EL50: > 160 mg/l  
Exposure time: 72 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 201  
GLP: yes

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

### Ingredients:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight  $\leq$  700):

Toxicity to fish (Chronic toxicity) : GLP: yes

### Ingredients:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight  $\leq$  700):

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,3 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

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

### Ingredients:

4,4'-methylenebis[N,N-bis(2,3-epoxypropyl)aniline]:

Toxicity to bacteria : IC50 (Pseudomonas putida): > 10.000 mg/l  
Exposure time: 24 h  
Test Type: static test  
Test substance: Fresh water  
Method: DIN 38 412 Part 8

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight  $\leq$  700):

Toxicity to bacteria : IC50 (activated sludge): > 100 mg/l  
Exposure time: 3 h  
Test Type: static test  
Test substance: Fresh water  
GLP: no

1,4-bis(2,3-epoxypropoxy)butane:

Toxicity to bacteria : IC50 (activated sludge): > 100 mg/l  
Exposure time: 3 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 209  
GLP: no

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**HUNTSMAN**

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## ARALDITE® 203 RESIN

|         |                |              |
|---------|----------------|--------------|
| Version | Revision Date: | MSDS Number: |
| 1.1     | 08.05.2015     | 400001009866 |

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

Remarks : No data available

Further information:  
No data available

### 12.2 Persistence and degradability

#### Ingredients:

4,4'-methylenebis[N,N-bis(2,3-epoxypropyl)aniline]:

Biodegradability : Inoculum: activated sludge  
Result: Not readily biodegradable.  
Biodegradation: > 9 - < 10 %  
Exposure time: 29 - 30 d  
Method: OECD Test Guideline 301B

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700):

Biodegradability : Inoculum: Sewage (STP effluent)  
Concentration: 20 mg/l  
Result: Not readily biodegradable.  
Biodegradation: 5 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F

1,4-bis(2,3-epoxypropoxy)butane:

Biodegradability : Inoculum: activated sludge  
Concentration: 20 mg/l  
Result: Not readily biodegradable.  
Biodegradation: 43 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F

Biochemical Oxygen Demand (BOD) : No data available

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**HUNTSMAN**

Enriching lives through innovation

## ARALDITE® 203 RESIN

|         |                |              |
|---------|----------------|--------------|
| Version | Revision Date: | MSDS Number: |
| 1.1     | 08.05.2015     | 400001009866 |

Chemical Oxygen Demand (COD) : No data available

BOD/COD : No data available

ThOD : No data available

BOD/ThOD : No data available

Dissolved organic carbon (DOC) : No data available

Physico-chemical removability : No data available

Stability in water : No data available

Photodegradation : No data available

### 12.3 Bioaccumulative potential

#### Ingredients:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight  $\leq$  700):

Bioaccumulation : Bioconcentration factor (BCF): 31  
GLP: no  
Remarks: Does not bioaccumulate.

### 12.4 Mobility in soil

Mobility : No data available

#### Ingredients:

4,4'-methylenebis[N,N-bis(2,3-epoxypropyl)aniline]:

Distribution among environmental compartments : Koc: < 18. Method: OECD Test Guideline 121

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight  $\leq$  700):

Distribution among environmental compartments : Koc: 445.

1,4-bis(2,3-epoxypropoxy)butane:

Distribution among environmental compartments : Koc: 12,59. Method: OECD Test Guideline 121

Stability in soil : No data available

### 12.5 Results of PBT and vPvB assessment

Assessment : No data available

### 12.6 Other adverse effects

Environmental fate and pathways : No data available

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**HUNTSMAN**

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## ARALDITE® 203 RESIN

|         |                |              |
|---------|----------------|--------------|
| Version | Revision Date: | MSDS Number: |
| 1.1     | 08.05.2015     | 400001009866 |

Endocrine disrupting potential : No data available

Adsorbed organic bound halogens (AOX) : No data available

Ozone-Depletion Potential : No data available

Additional ecological information : No data available

Global warming potential (GWP) : No data available

### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

|                        |                                                                                                                                                                                                      |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product                | : Can be landfilled or incinerated, when in compliance with local regulations.<br>Where possible recycling is preferred to disposal or incineration.<br>Send to a licensed waste management company. |
| Contaminated packaging | : Empty remaining contents.<br>Dispose of as unused product.<br>Do not re-use empty containers.                                                                                                      |

### SECTION 14: Transport information

#### IATA

|                                          |                                                                        |
|------------------------------------------|------------------------------------------------------------------------|
| 14.1 UN number                           | : UN 3082                                                              |
| 14.2 UN proper shipping name             | : Environmentally hazardous substance, liquid, n.o.s.<br>(EPOXY RESIN) |
| 14.3 Transport hazard class(es)          | : 9                                                                    |
| 14.4 Packing group                       | : III                                                                  |
| Labels                                   | : Miscellaneous                                                        |
| Packing instruction (cargo aircraft)     | : 964                                                                  |
| Packing instruction (passenger aircraft) | : 964                                                                  |

#### IMDG

|                              |                                                                        |
|------------------------------|------------------------------------------------------------------------|
| 14.1 UN number               | : UN 3082                                                              |
| 14.2 UN proper shipping name | : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.<br>(EPOXY RESIN) |
| 14.3 Transport hazard        | : 9                                                                    |

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**HUNTSMAN**

Enriching lives through innovation

## ARALDITE® 203 RESIN

|         |                |              |
|---------|----------------|--------------|
| Version | Revision Date: | MSDS Number: |
| 1.1     | 08.05.2015     | 400001009866 |

### class(es)

**14.4 Packing group** : III  
Labels : 9  
EmS Code : F-A, S-F

### 14.5 Environmental hazards

Marine pollutant : yes

### ADR

**14.1 UN number** : UN 3082  
**14.2 UN proper shipping name** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (EPOXY RESIN)

**14.3 Transport hazard class(es)** : 9

**14.4 Packing group** : III  
Labels : 9

### 14.5 Environmental hazards

Marine pollutant : no

### RID

**14.1 UN number** : UN 3082  
**14.2 UN proper shipping name** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (EPOXY RESIN)

**14.3 Transport hazard class(es)** : 9

**14.4 Packing group** : III  
Labels : 9

### 14.5 Environmental hazards

Marine pollutant : no

### 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

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

TSCA : On TSCA Inventory

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

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

NZIoC : Not in compliance with the inventory

ENCS : Not in compliance with the inventory

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**HUNTSMAN**

Enriching lives through innovation

## ARALDITE® 203 RESIN

|         |                |              |
|---------|----------------|--------------|
| Version | Revision Date: | MSDS Number: |
| 1.1     | 08.05.2015     | 400001009866 |

|       |                                                         |
|-------|---------------------------------------------------------|
| ISHL  | : Not in compliance with the inventory                  |
| KECI  | : On the inventory, or in compliance with the inventory |
| PICCS | : Not in compliance with the inventory                  |
| IECSC | : On the inventory, or in compliance with the inventory |

### 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

|      |                                                      |
|------|------------------------------------------------------|
| H302 | : Harmful if swallowed.                              |
| H312 | : Harmful in contact with skin.                      |
| H315 | : Causes skin irritation.                            |
| H317 | : May cause an allergic skin reaction.               |
| H318 | : Causes serious eye damage.                         |
| H319 | : Causes serious eye irritation.                     |
| H332 | : Harmful if inhaled.                                |
| H411 | : Toxic to aquatic life with long lasting effects.   |
| H412 | : Harmful to aquatic life with long lasting effects. |

#### Full text of other abbreviations

|                 |                            |
|-----------------|----------------------------|
| Acute Tox.      | : Acute toxicity           |
| Aquatic Chronic | : Chronic aquatic toxicity |
| Eye Dam.        | : Serious eye damage       |
| Eye Irrit.      | : Eye irritation           |
| Skin Irrit.     | : Skin irritation          |
| Skin Sens.      | : Skin sensitization       |

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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,

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**HUNTSMAN**

Enriching lives through innovation

## ARALDITE® 203 RESIN

|         |                |              |
|---------|----------------|--------------|
| Version | Revision Date: | MSDS Number: |
| 1.1     | 08.05.2015     | 400001009866 |

toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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