

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2014-1 GB HARDENER

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 06.11.2017 |
| 1.3 | 07.11.2017 | 400001008718 | Date of first issue: 01.07.2016 |

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

1.1 Product identifier

Trade name : ARALDITE® 2014-1 GB HARDENER

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

Use of the : Hardener
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 : Global_Product_EHS_AdMat@huntsman.com
responsible for the SDS

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)

| | |
|--------------------------------------|--|
| Skin irritation, Category 2 | H315: Causes skin irritation. |
| Serious eye damage, Category 1 | H318: Causes serious eye damage. |
| Skin sensitisation, Category 1 | H317: May cause an allergic skin reaction. |
| Reproductive toxicity, Category 1B | H360F: May damage fertility. |
| Chronic aquatic toxicity, Category 2 | H411: Toxic to aquatic life with long lasting effects. |

ARALDITE® 2014-1 GB HARDENER

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 06.11.2017 |
| 1.3 | 07.11.2017 | 400001008718 | Date of first issue: 01.07.2016 |

2.2 Label elements

Labelling (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. |
| | H360F | May damage fertility. |
| | H411 | Toxic to aquatic life with long lasting effects. |

| | | |
|--------------------------|---------------------------|---|
| Precautionary statements | Prevention: | |
| | P201 | Obtain special instructions before use. |
| | P261 | Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. |
| | P273 | Avoid release to the environment. |
| | P280 | Wear protective gloves/ protective clothing/ eye protection/ face protection. |
| | Response: | |
| | 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/doctor. |
| | P308 + P313 | IF exposed or concerned: Get medical advice/ attention. |

Hazardous components which must be listed on the label:

fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine

Fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine

N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine

4,4'-Isopropylidenediphenol



Signal word : Danger

| | | |
|-------------------|-------|--|
| Hazard statements | H315 | Causes skin irritation. |
| | H317 | May cause an allergic skin reaction. |
| | H318 | Causes serious eye damage. |
| | H360F | May damage fertility. |
| | H411 | Toxic to aquatic life with long lasting effects. |

ARALDITE® 2014-1 GB HARDENER

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 06.11.2017 |
| 1.3 | 07.11.2017 | 400001008718 | Date of first issue: 01.07.2016 |

Precautionary statements : P201 Obtain special instructions before use.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
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/doctor.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Hazardous components which must be listed on the label:

fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine

Fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine

N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine

2,2'-Iminodi(ethylamine)

4,4'-Isopropylidenediphenol

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. Index-No. Registration number | Classification | Concentration (% w/w) |
|--|---|---|--------------------------|
| Fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine (UVCB) | 68154-62-1 - 01-2119972322-40 | Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1A; H317 Aquatic Chronic 2; H411 | >= 30 - < 50 |
| Fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine | 68154-62-1 - - | Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1; H317 Aquatic Chronic 3; H412 | >= 2,5 - < 10 |
| N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine | 10563-29-8 234-148-4 | Acute Tox. 4; H302 Skin Corr. 1A; H314 | >= 5 - < 9,65 |

ARALDITE® 2014-1 GB HARDENER

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 06.11.2017 |
| 1.3 | 07.11.2017 | 400001008718 | Date of first issue: 01.07.2016 |

| | | | |
|-----------------------------|---|--|-----------------|
| | 01-2119970376-29 | Skin Sens. 1B; H317 | |
| 2,2'-Iminodi(ethylamine) | 111-40-0 203-865-4 01-2119473793-27 | Acute Tox. 4; H302 Acute Tox. 2; H330 Acute Tox. 4; H312 Skin Corr. 1B; H314 Eye Dam. 1; H318 Skin Sens. 1; H317 STOT SE 3; H335 | >= 3 - < 5 |
| 4,4'-Isopropylidenediphenol | 80-05-7 201-245-8 01-2119457856-23 | Eye Dam. 1; H318 Skin Sens. 1; H317 Repr. 1B; H360F STOT SE 3; H335 Aquatic Chronic 2; H411 | >= 1 - < 2,5 |

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- | | |
|-------------------------|---|
| General advice | : Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended. |
| If inhaled | : If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician. |
| In case of skin contact | : If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes. |
| In case of eye contact | : Small amounts splashed into eyes can cause irreversible tissue damage and blindness. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Continue rinsing eyes during transport to hospital. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist. |
| If swallowed | : Keep respiratory tract clear. Do NOT induce vomiting. Do not give milk or alcoholic beverages. 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.

ARALDITE® 2014-1 GB HARDENER

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 06.11.2017 |
| 1.3 | 07.11.2017 | 400001008718 | Date of first issue: 01.07.2016 |

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 : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : 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 firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

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.

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 : Neutralise with acid.
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

ARALDITE® 2014-1 GB HARDENER

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 06.11.2017 |
| 1.3 | 07.11.2017 | 400001008718 | Date of first issue: 01.07.2016 |

6.4 Reference to other sections

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

SECTION 7: Handling and storage

7.1 Precautions for safe handling

| | |
|---|--|
| Advice on safe handling | : Do not breathe vapours/dust. 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. To avoid spills during handling keep bottle on a metal tray. 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. |
| Advice on protection against fire and explosion | : Normal measures for preventive fire protection. |
| Hygiene measures | : When using do not eat or drink. When using do not 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 container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards. |
| Recommended storage temperature | : 2 - 40 °C |
| Further information on storage stability | : No decomposition if stored and applied as directed. |

7.3 Specific end use(s)

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

| Components | CAS-No. | Value type (Form of exposure) | Control parameters | Basis |
|----------------|-----------|-------------------------------|--------------------|---------|
| barium sulfate | 7727-43-7 | TWA (inhalable) | 10 mg/m3 | GB EH40 |

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2014-1 GB HARDENER

Version 1.3 Revision Date: 07.11.2017 SDS Number: 400001008718 Date of last issue: 06.11.2017
Date of first issue: 01.07.2016

| | | | | |
|--------------------------|---|-----------------------|--------------------|---------|
| | | dust) | | |
| Further information | For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust, The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m-3 8-hour TWA of inhalable dust or 4 mg.m-3 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limit., Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed 'inhalable' and 'respirable'. Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/3., Where dusts contain components that have their own assigned WEL, all the relevant limits should be complied with., Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used | | | |
| | | TWA (Respirable dust) | 4 mg/m3 | GB EH40 |
| Further information | For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust, The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m-3 8-hour TWA of inhalable dust or 4 mg.m-3 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limit., Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed 'inhalable' and 'respirable'. Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/3., Where dusts contain components that have their own assigned WEL, all the relevant limits should be complied with., Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used | | | |
| 2,2'-Iminodi(ethylamine) | 111-40-0 | TWA | 1 ppm 4,3 mg/m3 | GB EH40 |
| Further information | Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity., | | | |

ARALDITE® 2014-1 GB HARDENER

Version 1.3 Revision Date: 07.11.2017 SDS Number: 400001008718 Date of last issue: 06.11.2017
Date of first issue: 01.07.2016

| | | | | |
|-----------------------------|--|----------------------------|--------------------|-------------|
| | Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used | | | |
| 4,4'-Isopropylidenediphenol | 80-05-7 | TWA (inhalable dust) | 10 mg/m3 | GB EH40 |
| Further information | Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used | | | |
| | | TWA (inhalable dust) | 10 mg/m3 | 2009/161/EU |
| Further information | Indicative, In the Annex to Directive 2009/161/EU, the reference to bisphenol A is deleted with effect from 21 August 2018. | | | |
| | | TWA ((inhalable fraction)) | 2 mg/m3 | 2017/164/EU |
| Further information | Indicative | | | |
| Diethylenetriamine | 111-40-0 | TWA | 1 ppm 4,3 mg/m3 | GB EH40 |
| Further information | Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity., Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used | | | |
| 4,4'-isopropylidenediphenol | 80-05-7 | TWA (inhalable dust) | 10 mg/m3 | GB EH40 |
| Further information | Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used | | | |
| | | TWA (inhalable dust) | 10 mg/m3 | 2009/161/EU |
| Further information | Indicative, In the Annex to Directive 2009/161/EU, the reference to bisphenol A is deleted with effect from 21 August 2018. | | | |
| | | TWA ((inhalable fraction)) | 2 mg/m3 | 2017/164/EU |
| Further information | Indicative | | | |

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

| Substance name | End Use | Exposure routes | Potential health effects | Value |
|--------------------|-----------|-----------------|---------------------------------------|-------------------|
| Diethylenetriamine | Workers | Inhalation | Systemic effects, Short-term exposure | 92,1 mg/m3 |
| | Workers | Inhalation | Local effects, Short-term exposure | 2,6 mg/m3 |
| | Workers | Dermal | Systemic effects, Long-term exposure | 11,4 mg/kg bw/day |
| | Workers | Inhalation | Systemic effects, Long-term exposure | 15,4 mg/m3 |
| | Workers | Dermal | Local effects, Long-term exposure | 1,1 mg/cm2 |
| | Workers | Inhalation | Local effects, Long-term exposure | 0,87 mg/m3 |
| | Consumers | Oral | Local effects, Short-term exposure | 4,88 mg/kg bw/day |

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2014-1 GB HARDENER

Version 1.3 Revision Date: 07.11.2017 SDS Number: 400001008718 Date of last issue: 06.11.2017
Date of first issue: 01.07.2016

| | | | | |
|------------------------------|-----------|------------|--|----------------------|
| | Consumers | Inhalation | Systemic effects, Short-term exposure | 27,5 mg/m3 |
| | Consumers | Dermal | Systemic effects, Long-term exposure | 4,88 mg/kg bw/day |
| | Consumers | Inhalation | Systemic effects, Long-term exposure | 4,6 mg/m3 |
| triethylenetetramine | Workers | Inhalation | Systemic effects, Short-term exposure | 5380 mg/m3 |
| | Workers | Dermal | Systemic effects, Long-term exposure | 0,57 mg/kg bw/day |
| | Workers | Inhalation | Systemic effects, Long-term exposure | 1 mg/m3 |
| | Workers | Dermal | Local effects, Long- term exposure | 0,028 mg/m3 |
| | Consumers | Dermal | Systemic effects, Short-term exposure | 8 mg/kg bw/day |
| | Consumers | Inhalation | Systemic effects, Short-term exposure | 1600 mg/m3 |
| | Consumers | Oral | Systemic effects, Short-term exposure | 20 mg/kg bw/day |
| | Consumers | Dermal | Local effects, Short- term exposure | 1 mg/cm2 |
| | Consumers | Dermal | Local effects, Short- term exposure | 0,25 mg/kg bw/day |
| | Consumers | Inhalation | Systemic effects, Long-term exposure | 0,29 mg/m3 |
| | Consumers | Oral | Systemic effects, Long-term exposure | 0,41 mg/kg bw/day |
| | Consumers | Dermal | Local effects, Long- term exposure | 0,43 mg/cm2 |
| 2,2'- Iminodi(ethylamine) | Workers | Inhalation | Systemic effects, Short-term exposure | 92,1 mg/m3 |
| | Workers | Inhalation | Local effects, Short- term exposure | 2,6 mg/m3 |
| | Workers | Dermal | Systemic effects, Long-term exposure | 11,4 mg/kg bw/day |
| | Workers | Inhalation | Systemic effects, Long-term exposure | 15,4 mg/m3 |
| | Workers | Dermal | Local effects, Long- term exposure | 1,1 mg/cm2 |
| | Workers | Inhalation | Local effects, Long- term exposure | 0,87 mg/m3 |
| | Consumers | Oral | Local effects, Short- term exposure | 4,88 mg/kg bw/day |
| | Consumers | Inhalation | Systemic effects, Short-term exposure | 27,5 mg/m3 |
| | Consumers | Dermal | Systemic effects, Long-term exposure | 4,88 mg/kg |

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2014-1 GB HARDENER

Version 1.3 Revision Date: 07.11.2017 SDS Number: 400001008718 Date of last issue: 06.11.2017
 Date of first issue: 01.07.2016

| | | | | bw/day |
|--|--------------|------------|---|-------------|
| | Consumers | Inhalation | Systemic effects, Long-term exposure | 4,6 mg/m3 |
| barium sulfate | Workers | Inhalation | Long-term systemic effects | 10 mg/m3 |
| | Workers | Inhalation | Long-term local effects | 10 mg/m3 |
| | Consumer use | Inhalation | Long-term systemic effects | 10 mg/m3 |
| | Consumer use | Oral | Long-term systemic effects | 13000 mg/kg |
| N'-(3-aminopropyl)- N,N-dimethylpropane- 1,3-diamine | Workers | Inhalation | Long-term systemic effects | 3,7 mg/m3 |
| | Workers | Inhalation | Acute systemic effects | 7,5 mg/m3 |
| | Workers | Inhalation | Long-term local effects | 3,7 mg/m3 |
| | Workers | Inhalation | Acute local effects | 7,5 mg/m3 |
| | Workers | Dermal | Long-term systemic effects | 0,67 mg/kg |
| | Consumers | Inhalation | Long-term systemic effects | 0,65 mg/m3 |
| | Consumers | Inhalation | Long-term local effects | 0,65 mg/m3 |
| | Consumers | Oral | Long-term systemic effects | 0,2 mg/kg |

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

| Substance name | Environmental Compartment | Value |
|----------------------|---------------------------|-------------|
| Diethylenetriamine | Fresh water | 0,56 mg/l |
| Remarks: | Assessment Factors | |
| | Marine water | 0,056 mg/l |
| | Assessment Factors | |
| | Fresh water sediment | 1072 mg/kg |
| | Equilibrium method | |
| | Marine sediment | 107,2 mg/kg |
| | Equilibrium method | |
| | Soil | 214 mg/kg |
| | Equilibrium method | |
| | Freshwater - intermittent | 0,32 mg/l |
| | Assessment Factors | |
| triethylenetetramine | Fresh water | 190 µg/l |

ARALDITE® 2014-1 GB HARDENER

Version 1.3 Revision Date: 07.11.2017 SDS Number: 400001008718 Date of last issue: 06.11.2017
Date of first issue: 01.07.2016

| | | |
|--------------------------|---------------------------|-------------|
| | Assessment Factors | |
| | Fresh water sediment | 95,9 mg/kg |
| | Equilibrium method | |
| | Marine water | 38 µg/l |
| | Assessment Factors | |
| | Freshwater - intermittent | 200 µg/l |
| | Assessment Factors | |
| | Marine sediment | 19,2 mg/kg |
| | Equilibrium method | |
| | Soil | 19,1 mg/kg |
| | Equilibrium method | |
| | Sewage treatment plant | 4,25 mg/l |
| | Assessment Factors | |
| | Secondary Poisoning | 0,18 mg/kg |
| | Assessment Factors | |
| 2,2'-Iminodi(ethylamine) | Fresh water | 0,56 mg/l |
| | Assessment Factors | |
| | Marine water | 0,056 mg/l |
| | Assessment Factors | |
| | Fresh water sediment | 1072 mg/kg |
| | Equilibrium method | |
| | Marine sediment | 107,2 mg/kg |
| | Equilibrium method | |
| | Soil | 214 mg/kg |
| | Equilibrium method | |
| | Freshwater - intermittent | 0,32 mg/l |
| | Assessment Factors | |
| barium sulfate | Fresh water | 115 µg/l |
| | Sewage treatment plant | 62,2 mg/l |
| | Assessment Factors | |
| | Fresh water sediment | 600,4 mg/kg |
| | Assessment Factors | |
| | Soil | 207,7 mg/kg |
| | Assessment Factors | |

ARALDITE® 2014-1 GB HARDENER

Version 1.3 Revision Date: 07.11.2017 SDS Number: 400001008718 Date of last issue: 06.11.2017
Date of first issue: 01.07.2016

| | | |
|---|---------------------------|---------------|
| N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine | Fresh water | 9,2 µg/l |
| Assessment Factors | | |
| | Marine water | 0,92 µg/l |
| Assessment Factors | | |
| | Freshwater - intermittent | 92 µg/l |
| Assessment Factors | | |
| | Sewage treatment plant | 18,1 mg/l |
| Assessment Factors | | |
| | Fresh water sediment | 0,0336 mg/kg |
| Equilibrium method | | |
| | Marine sediment | 0,00336 mg/kg |
| Equilibrium method | | |
| | Soil | 0,00132 mg/kg |
| Equilibrium method | | |
| Siloxanes and Silicones, di-Me, reaction products with silica | Fresh water sediment | > 100 mg/kg |
| Assessment Factors | | |
| | Soil | 23 mg/kg |
| Assessment Factors | | |

8.2 Exposure controls

Personal protective equipment

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Hand protection

Material : butyl-rubber

Material : Ethyl Vinyl Alcohol Laminate (EVAL)

Break through time : > 8 h

Material : Nitrile rubber

Break through time : 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).

Skin and body protection : Impervious clothing

ARALDITE® 2014-1 GB HARDENER

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 06.11.2017 |
| 1.3 | 07.11.2017 | 400001008718 | Date of first issue: 01.07.2016 |

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 | : paste |
| Colour | : grey |
| Odour | : slight |
| Odour Threshold | : No data is available on the product itself. |
| pH | : 11 (20 °C) Concentration: 500 g/l Method: Measured |
| Melting point/freezing point | : No data available |
| Boiling point | : > 200 °C |
| Flash point | : 120 °C Method: Pensky-Martens 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 | : < 0,15 hPa (20 °C) |
| Relative vapour density | : No data is available on the product itself. |
| Relative density | : No data is available on the product itself. |

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2014-1 GB HARDENER

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 06.11.2017 |
| 1.3 | 07.11.2017 | 400001008718 | Date of first issue: 01.07.2016 |

Density : 1,6 g/cm³ (25 °C)

Solubility(ies)
Water solubility : partly soluble (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 : No data is available on the product itself.

Decomposition temperature : > 200 °C

Viscosity
Viscosity, dynamic : 1 178 000 mPa,s (25 °C)
Method: Other guidelines
thixotropic

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 decomposition if stored and applied as directed.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : No decomposition if stored and applied as directed.

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

Nitrogen oxides (NO_x)
Carbon oxides
Burning produces noxious and toxic fumes.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2014-1 GB HARDENER

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 06.11.2017 |
| 1.3 | 07.11.2017 | 400001008718 | Date of first issue: 01.07.2016 |

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity - Product : Acute toxicity estimate : > 2 000 mg/kg
Method: Calculation method

Acute inhalation toxicity - Product : Acute toxicity estimate : > 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Acute dermal toxicity - Product : Acute toxicity estimate : > 2 000 mg/kg
Method: Calculation method

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

Skin corrosion/irritation

Product:

Species: Rabbit
Assessment: Irritant
Method: OECD Test Guideline 404
Result: Irritating to skin.

Serious eye damage/eye irritation

Product:

Species: Rabbit
Assessment: Corrosive
Method: OECD Test Guideline 405
Result: Irreversible effects on the eye

Respiratory or skin sensitisation

Product:

Remarks: Causes sensitisation.

Assessment: No data available

Germ cell mutagenicity

Components:

fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine:
Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2014-1 GB HARDENER

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 06.11.2017 |
| 1.3 | 07.11.2017 | 400001008718 | Date of first issue: 01.07.2016 |

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

: Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 487
Result: negative

N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 487
Result: negative

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

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

4,4'-Isopropylidenediphenol:

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

Components:

2,2'-Iminodi(ethylamine):

Genotoxicity in vivo : Cell type: Somatic
Application Route: Oral
Dose: 85 - 850 mg/kg
Method: OECD Test Guideline 474
Result: negative

Application Route: Oral
Result: negative

4,4'-Isopropylidenediphenol:

Genotoxicity in vivo : Method: OECD Test Guideline 474
Result: negative

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2014-1 GB HARDENER

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 06.11.2017 |
| 1.3 | 07.11.2017 | 400001008718 | Date of first issue: 01.07.2016 |

Carcinogenicity

Components:

N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine:

Species: Mouse, (male)

Application Route: Dermal

Exposure time: 20 month(s)

Frequency of Treatment: 3 daily

Result: negative

2,2'-Iminodi(ethylamine):

Species: Mouse, (male)

Application Route: Dermal

Dose: 56.3 mg/kg

Frequency of Treatment: 3 daily

Result: negative

4,4'-Isopropylidenediphenol:

Species: Rat, (male and female)

Application Route: Oral

Exposure time: 103 weeks

Frequency of Treatment: 7 daily

Result: negative

Carcinogenicity - Assessment : No data available

Reproductive toxicity

Components:

fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine:

Effects on fertility : Species: Rat, male and female

Application Route: Oral

Method: OECD Test Guideline 422

Result: Animal testing did not show any effects on fertility.

N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine:

Species: Rat, male and female

Application Route: Oral

Method: OECD Test Guideline 422

Result: Animal testing did not show any effects on fertility.

2,2'-Iminodi(ethylamine):

Species: Rat, male and female

Application Route: Oral

General Toxicity - Parent: No observed adverse effect level:

30 mg/kg wet weight

Method: OECD Test Guideline 421

Result: positive

4,4'-Isopropylidenediphenol:

Species: Rat, male and female

Application Route: Oral

Method: OECD Test Guideline 416

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2014-1 GB HARDENER

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 06.11.2017 |
| 1.3 | 07.11.2017 | 400001008718 | Date of first issue: 01.07.2016 |

Result: Embryotoxic effects and adverse effects on the offspring were detected.

Components:

N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine:

Effects on foetal development : Species: Rat, male and female
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level: 15 mg/kg body weight
Developmental Toxicity: No observed adverse effect level: 15 mg/kg body weight
Embryo-foetal toxicity: No observed adverse effect level: 15 mg/kg body weight
Method: OECD Test Guideline 422
Result: No effects on fertility and early embryonic development were detected.

2,2'-Iminodi(ethylamine):

Species: Rat
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level: 100 mg/kg body weight
Method: OECD Test Guideline 421
Result: No adverse effects

4,4'-Isopropylidenediphenol:

Species: Rat, female
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level: < 160 mg/kg body weight
Method: OECD Test Guideline 416
Result: No teratogenic effects

Components:

N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine:

Reproductive toxicity - Assessment : No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

4,4'-Isopropylidenediphenol:

Reproductive toxicity - Assessment : Clear evidence of adverse effects on sexual function and fertility, based on animal experiments.

STOT - single exposure

Components:

2,2'-Iminodi(ethylamine):

Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

4,4'-Isopropylidenediphenol:

Assessment: The substance or mixture is classified as specific target organ toxicant, single

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2014-1 GB HARDENER

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 06.11.2017 |
| 1.3 | 07.11.2017 | 400001008718 | Date of first issue: 01.07.2016 |

exposure, category 3 with respiratory tract irritation.

STOT - repeated exposure

No data available

Repeated dose toxicity

Components:

fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine:

Species: Rat, male and female

NOAEL: 1000 mg/kg

Application Route: Ingestion

Exposure time: 6 WeeksNumber of exposures: 7 d

Method: Subacute toxicity

N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine:

Species: Rat, male and female

NOEC: 550

Application Route: Ingestion

Test atmosphere: vapour

Exposure time: 3 WeeksNumber of exposures: 7 d

Method: Subchronic toxicity

Species: Mouse, male

NOAEL: $\geq 56,3$

Application Route: Skin contact

Exposure time: 20 hNumber of exposures: 3 d

Method: Chronic toxicity

2,2'-Iminodi(ethylamine):

Species: Rat, male and female

NOEC: 70 - 80

Application Route: Ingestion

Test atmosphere: vapour

Exposure time: 360 hNumber of exposures: 7 d

Method: Subchronic toxicity

Species: Rat, male and female

NOAEL: 114

Application Route: Skin contact

Exposure time: 9 600 hNumber of exposures: 6 d

Method: Chronic toxicity

4,4'-Isopropylidenediphenol:

Species: Dog, male and female

NOEC: 75 mg/kg, 10

Application Route: Ingestion

Test atmosphere: dust/mist

Exposure time: 2 160 hNumber of exposures: 7 d

Method: Subchronic toxicity

Species: Rat, male and female

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2014-1 GB HARDENER

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 06.11.2017 |
| 1.3 | 07.11.2017 | 400001008718 | Date of first issue: 01.07.2016 |

LOAEL: 600 mg/kg
Application Route: Ingestion
Exposure time: 672 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

Ingestion: No data available

SECTION 12: Ecological information

12.1 Toxicity

Components:

fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): 7,07 mg/l
Exposure time: 96 h

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2014-1 GB HARDENER

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 06.11.2017 |
| 1.3 | 07.11.2017 | 400001008718 | Date of first issue: 01.07.2016 |

Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 5,18 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 2,43 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (activated sludge): 421 mg/l
Exposure time: 3 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 209

Fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine:
Ecotoxicology Assessment
Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 100 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 9,2 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Toxicity to algae : ErC50 (Selenastrum capricornutum (green algae)): 21 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (Pseudomonas putida): 181 mg/l
Exposure time: 16 h
Test Type: static test
Test substance: Fresh water
Method: DIN 38 412 Part 8

2,2'-Iminodi(ethylamine):

Toxicity to fish : LC50 : 430 mg/l

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2014-1 GB HARDENER

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 06.11.2017 |
| 1.3 | 07.11.2017 | 400001008718 | Date of first issue: 01.07.2016 |

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 : EC50 (Daphnia magna (Water flea)): 32 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water

Toxicity to algae : EbC50 (Selenastrum capricornutum (green algae)): 1 164 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) : NOEC: 10 mg/l
Exposure time: 28 d
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 5,6 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.20

Toxicity to soil dwelling organisms : EC50: > 1 000 mg/kg
Exposure time: 56 d
Species: Eisenia fetida (earthworms)
Method: OECD Test Guideline 222

Ecotoxicology Assessment
Acute aquatic toxicity : This product has no known ecotoxicological effects.

4,4'-Isopropylidenediphenol:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 7,5 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 : 3,9 - 10,2 mg/l
Exposure time: 48 h

(Ceriodaphnia dubia (Water flea)):

Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 2,5 - 3,1 mg/l
Exposure time: 96 h

Toxicity to fish (Chronic toxicity) : NOEC: 0,016 mg/l
Exposure time: 444 d
Species: Pimephales promelas (fathead minnow)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2014-1 GB HARDENER

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 06.11.2017 |
| 1.3 | 07.11.2017 | 400001008718 | Date of first issue: 01.07.2016 |

Test Type: flow-through test
Test substance: Fresh water
Method: EPA OPPTS 850.1500
Remarks: Toxic to aquatic organisms.

M-Factor (Chronic aquatic toxicity) : 1

Ecotoxicology Assessment
Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Components:

N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 100 %
Exposure time: 28 d
Method: ISO

2,2'-Iminodi(ethylamine):

Biodegradability : Inoculum: activated sludge
Result: Readily biodegradable.
Biodegradation: 87 %
Exposure time: 21 d
Method: OECD Test Guideline 301D

Photodegradation : Test Type: Air
Rate constant: 500000
Degradation (direct photolysis): 50 %

4,4'-Isopropylidenediphenol:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 1 - 2 %
Exposure time: 28 d

12.3 Bioaccumulative potential

Components:

N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine:

Partition coefficient: n-octanol/water : log Pow: 0,5

log Pow: -0,56 (25 °C)
pH: 11,6
Method: OECD Test Guideline 107

2,2'-Iminodi(ethylamine):

Bioaccumulation : Species: Cyprinus carpio (Carp)
Exposure time: 42 d
Bioconcentration factor (BCF): 0,3 - 6,3
Test substance: Fresh water
Method: flow-through test

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2014-1 GB HARDENER

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 06.11.2017 |
| 1.3 | 07.11.2017 | 400001008718 | Date of first issue: 01.07.2016 |

Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: -1,58 (20 °C)
pH: 7

12.4 Mobility in soil

Components:

2,2'-Iminodi(ethylamine):
Distribution among environmental compartments : Koc: 19111

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 : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
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.
(POLYAMIDE RESIN)
(POLYAMIDE RESIN, 4,4'-ISOPROPYLIDENEDIPHENOL)

14.3 Transport hazard class(es) : 9

14.4 Packing group : III

Labels : Miscellaneous

Packing instruction (cargo) : 964

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2014-1 GB HARDENER

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 06.11.2017 |
| 1.3 | 07.11.2017 | 400001008718 | Date of first issue: 01.07.2016 |

aircraft)
Packing instruction : 964
(passenger aircraft)

IMDG

14.1 UN number : UN 3082
14.2 UN proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(POLYAMIDE RESIN)
(POLYAMIDE RESIN, 4,4'-ISOPROPYLIDENEDIPHENOL)
14.3 Transport hazard class(es) : 9
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.
(POLYAMIDE RESIN)
(POLYAMIDE RESIN, 4,4'-ISOPROPYLIDENEDIPHENOL)
14.3 Transport hazard class(es) : 9
14.4 Packing group : III
Labels : 9
14.5 Environmental hazards
Environmentally hazardous : yes

RID

14.1 UN number : UN 3082
14.2 UN proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(POLYAMIDE RESIN)
(POLYAMIDE RESIN, 4,4'-ISOPROPYLIDENEDIPHENOL)
14.3 Transport hazard class(es) : 9
14.4 Packing group : III
Labels : 9
14.5 Environmental hazards
Environmentally hazardous : yes

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

ARALDITE® 2014-1 GB HARDENER

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 06.11.2017 |
| 1.3 | 07.11.2017 | 400001008718 | Date of first issue: 01.07.2016 |

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59) : 4,4'-isopropylidenediphenol

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

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

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), NZIOIC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (United States of America (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. |
| H314 | : Causes severe skin burns and eye damage. |
| H315 | : Causes skin irritation. |
| H317 | : May cause an allergic skin reaction. |
| H318 | : Causes serious eye damage. |
| H319 | : Causes serious eye irritation. |

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2014-1 GB HARDENER

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 06.11.2017 |
| 1.3 | 07.11.2017 | 400001008718 | Date of first issue: 01.07.2016 |

| | |
|-------|--|
| H330 | : Fatal if inhaled. |
| H335 | : May cause respiratory irritation. |
| H360F | : May damage fertility. |
| 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 |
| Repr. | : Reproductive toxicity |
| Skin Corr. | : Skin corrosion |
| Skin Irrit. | : Skin irritation |
| Skin Sens. | : Skin sensitisation |
| STOT SE | : Specific target organ toxicity - single exposure |
| 2009/161/EU | : Europe. COMMISSION DIRECTIVE 2009/161/EU establishing a third list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Commission Directive 2000/39/EC |
| 2017/164/EU | : Commission Directive (EU) 2017/164 establishing a fourth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC, and amending Commission Directives 91/322/EEC, 2000/39/EC and 2009/161/EU |
| GB EH40 | : UK. EH40 WEL - Workplace Exposure Limits |
| 2009/161/EU / TWA | : Limit Value - eight hours |
| 2017/164/EU / TWA | : Limit Value - eight hours |
| GB EH40 / TWA | : Long-term exposure limit (8-hour TWA reference period) |

Further information

Classification of the mixture:

| | |
|-------------------|-------|
| Skin Irrit. 2 | H315 |
| Eye Dam. 1 | H318 |
| Skin Sens. 1 | H317 |
| Repr. 1B | H360F |
| Aquatic Chronic 2 | H411 |

Classification procedure:

| |
|-------------------------------------|
| Based on product data or assessment |
| Based on product data or assessment |
| Calculation method |
| Calculation method |
| Calculation method |

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.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2014-1 GB HARDENER

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 06.11.2017 |
| 1.3 | 07.11.2017 | 400001008718 | Date of first issue: 01.07.2016 |

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.

The trademarks above are the property of Huntsman Corporation or an affiliate thereof.

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.