

Ident-No: ARALDITE 2020 HARDENER/HAERTER/DURCISSEUR

Version 6
Revision Date 24.02.2007

Print Date 28.02.2007

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

Product information

Trade name : ARALDITE 2020 HARDENER/HAERTER/DURCISSEUR

Use : Component for adhesive applications

Company : Huntsman Advanced Materials (Europe)BVBA
Everslaan 45
3078 Everberg / Belgium

Telephone : +41619661599
Telefax : +41619661589
Emergency telephone number : +41 61 966 40 00 (in France ORFILA : +33(0)145425959)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature

Aliphatic amine adduct
preparation

Hazardous components

Chemical Name	CAS-No.	Symbol(s):	R-phrase(s)	Concentration [%]
isophorone diamine EC-No.: 220-666-8	2855-13-2	C	R21/22 R34 R43 R52/53	39.00 - 51.00
trimethylhexamethylenediamine EC-No.: 247-134-8	25620-58-0	C	R22 R34 R43 R52/53	14.00 - 20.00

3. HAZARDS IDENTIFICATION

Harmful in contact with skin and if swallowed.
Causes burns.
May cause sensitization by skin contact.
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

4. FIRST AID MEASURES

Inhalation : Move to fresh air.
Call a physician immediately.

Eye contact : Rinse immediately with plenty of water for at least 15 minutes.
Call a physician immediately.

Skin contact : Wash off immediately with soap and plenty of water.
If skin irritation persists, call a physician.

Ingestion : Immediately give plenty of water (if possible charcoal slurry).
Do not induce vomiting.
Obtain medical attention.

Ident-No: ARALDITE 2020 HARDENER/HAERTER/DURCISSEUR

Version 6
Revision Date 24.02.2007

Print Date 28.02.2007

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Water spray.
Carbon dioxide (CO₂).
Foam.
Dry powder.
- Extinguishing media which must not be used for safety reasons : High volume water jet.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus and protective suit.
- Further information : Burning produces obnoxious and toxic fumes.
Carbon oxides.
Nitrogen oxides.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Keep away from sources of ignition - No smoking.
Avoid contact with skin, eyes and clothing.
Do not breathe vapours/dust.
- Environmental precautions : Prevent product from entering drains.
Do not contaminate surface water.
Avoid subsoil penetration.
- Methods for cleaning up : Soak up with inert absorbent material and dispose of as hazardous waste.

7. HANDLING AND STORAGE

Handling

- Advice on safe handling : Provide sufficient air exchange and/or exhaust in work rooms.
Handle and open container with care.

Storage

- Further information on storage conditions : Keep away from food, drink and animal feeding stuffs.
Keep container tightly closed.
Keep at temperatures between 2 and 40°C.
- Storage hazard class : Storage class 8, Corrosive substances
Huntsman Advanced
Materials

Ident-No: ARALDITE 2020 HARDENER/HAERTER/DURCISSEUR

Version 6
Revision Date 24.02.2007

Print Date 28.02.2007

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Control parameters	Update	Basis
------------	---------	--------------------	--------	-------

Engineering measures

No special precautions required.

Personal protective equipment

- Respiratory protection : In case of insufficient ventilation wear suitable respiratory equipment.
Filter type AX-P2 (organic vapours, particles)
- Eye protection : Tightly fitting safety goggles.
Face-shield.
- Hand protection : Material of gloves for long term application (BTT>480 min):
Butyl rubber
Ethyl Vinyl Alcohol Laminate (EVAL)
Material of gloves for short term/splash application (10 min<BTT<480 min):
Nitrile rubber
Use gloves approved to relevant standards e.g. EN 374 (Europe), F739 (US).
Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material and dexterity. Always seek advice from glove suppliers.
Additional information can be found for instance at www.gisbau.de
- Skin and body protection : Protective suit.
Safety shoes.
- Hygiene measures : Keep away from food, drink and animal feeding stuffs.
Wash hands before breaks and immediately after handling the product.
- Protective measures : Keep away from sources of ignition - No smoking.
Avoid contact with skin, eyes and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Form : liquid
- Colour : clear
light yellow
- Odour : amine-like

Ident-No: ARALDITE 2020 HARDENER/HAERTER/DURCISSEUR

Version 6
Revision Date 24.02.2007

Print Date 28.02.2007

Boiling point	: > 200 °C
Thermal decomposition	: > 200 °C
Flash point	: > 120 °C Method: DIN 51758 (Pensky-Martens Closed Cup)
Vapour pressure	: < 6 Pa at 20 °C
Density	: 0.95 g/cm ³ at 25 °C
Water solubility	: at 20 °C Note: partly soluble
Miscibility with water	: immiscible at 20 °C
Viscosity, dynamic	: 150 mPa.s at 25 °C

10. STABILITY AND REACTIVITY

Conditions to avoid	: Note: Take necessary action to avoid static electricity discharge.
Materials to avoid	: Strong acids and strong bases. Strong oxidizing agents.
Hazardous decomposition products	: Carbon oxides. Nitrogen oxides. Burning produces obnoxious and toxic fumes.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	: LD50 rat Dose: approx. 950 mg/kg
Eye irritation	: Corrosive rabbit
Skin irritation	: Corrosive rabbit dermal
Sensitization	: Causes sensitization. guinea pig dermal

Ident-No: ARALDITE 2020 HARDENER/HAERTER/DURCISSEUR

Version 6
Revision Date 24.02.2007

Print Date 28.02.2007

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Further information on ecology

Additional ecological information : Avoid subsoil penetration.
Prevent product from entering drains.
Do not contaminate surface water.

13. DISPOSAL CONSIDERATIONS

Product : Waste Key Number: 070204
Must be incinerated, when in compliance with local regulations.

Container : Empty containers can be landfilled after cleaning, when in compliance with the Environmental Protection (Duty of Care) Regulations 1991.

14. TRANSPORT INFORMATION

Land transport

ADR:

UN-No: 2289
Class: 8
Classification code: C7
Packaging group: III
Risk No.: 80
ADR/RID-Labels: 8
Proper shipping name: ISOPHORONEDIAMINE SOLUTION

RID:

UN-No: 2289
Class: 8
Packaging group: III
Risk No.: 80
ADR/RID-Labels: 8
Proper shipping name: ISOPHORONEDIAMINE SOLUTION

Sea transport

IMDG:

UN-No: 2289
Class: 8
Packaging group: III
ADR/RID-Labels: 8
MFAG:

Ident-No: ARALDITE 2020 HARDENER/HAERTER/DURCISSEUR

Version 6
Revision Date 24.02.2007

Print Date 28.02.2007

EmS: F-A S-B
Proper shipping name: ISOPHORONEDIAMINE SOLUTION

Air transport

IATA-DGR:

UN/ID No.: UN 2289
Class: 8
Packaging group: III
Packing instruction (cargo aircraft): 820
Max. Qty/Pack.: 60.00 L
(999.00 = No limit)
Packing instruction (passenger aircraft): 818
Max. Qty/Pack.: 5.00 L
(999.00 = No limit)
ADR/RID-Labels: 8
Proper shipping name: ISOPHORONEDIAMINE SOLUTION

15. REGULATORY INFORMATION

Labelling according to EEC Directive

Labelling required

Symbol(s) : C Corrosive

R-phrase(s) : R21/22 Harmful in contact with skin and if swallowed.
R34 Causes burns.
R43 May cause sensitization by skin contact.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s) : S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show label where possible).
S61 Avoid release to the environment. Refer to special instructions/safety data sheets.

Hazardous components which must be listed on the label : isophorone diamine
EC-No.: 220-666-8

Ident-No: ARALDITE 2020 HARDENER/HAERTER/DURCISSEUR

Version 6
Revision Date 24.02.2007

Print Date 28.02.2007

National legislation

Notification status

- : EINECS yes
- : TSCA no
- : DSL no
- : AICS no
- : KECI (KR) no
- : ENCS (JP) no
- : INV (CN) no
- : PICCS (PH) no

16. OTHER INFORMATION

List of R-phrases (Section 2)

R21/22	Harmful in contact with skin and if swallowed.
R22	Harmful if swallowed.
R34	Causes burns.
R43	May cause sensitization by skin contact.
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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

All information is based on results gained from experience and tests and is believed to be accurate but is given without acceptance of liability for loss or damage attributable to reliance thereon as conditions of use lie outside our control. Users should always carry out sufficient tests to establish the suitability of any products for their intended applications. No statements shall be incorporated in any contract unless expressly agreed in writing nor construed as recommending the use of any product in conflict of any patent. All goods are supplied subject to Huntsman Advanced Materials General Conditions of Sale.

Ident-No: ARALDITE 2020 HARDENER/HAERTER/DURCISSEUR

Version 6
Revision Date 24.02.2007

Print Date 28.02.2007

Ident-No: ARALDITE 2020 RESIN(E)/HARZ

Version 7
Revision Date 20.02.2007

Print Date 22.02.2007

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

Product information

Trade name : ARALDITE 2020 RESIN(E)/HARZ

Use : Component for adhesive applications

Company : Huntsman Advanced Materials (Europe)BVBA
Everslaan 45
3078 Everberg / Belgium

Telephone : +41619661599
Telefax : +41619661589
Emergency telephone number : +41 61 966 40 00 (in France ORFILA : +33(0)145425959)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature

Formulated bisphenol A epoxy resin preparation

Hazardous components

Chemical Name	CAS-No.	Symbol(s):	R-phrase(s)	Concentration [%]
butanedioldiglycidyl ether EC-No.: 219-371-7	2425-79-8	Xn	R20/21 R36/38 R43 R52/53	40.00 - 52.00
reaction product: bisphenol A- (epichlorhydrin); epoxy resin (number average molecular weight < 700)	25068-38-6	Xi, N	R36/38 R43 R51/53	50.00 - 62.00

3. HAZARDS IDENTIFICATION

Harmful by inhalation and in contact with skin.
Irritating to eyes and skin.
May cause sensitization by skin contact.
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

4. FIRST AID MEASURES

Inhalation : Move to fresh air.
Call a physician immediately.

Eye contact : Rinse immediately with plenty of water for at least 15 minutes.
If eye irritation persists, consult a specialist.

Skin contact : Wash off immediately with soap and plenty of water.
If skin irritation persists, call a physician.

Ingestion : Do not induce vomiting.
Immediately give plenty of water (if possible charcoal slurry).

Ident-No: ARALDITE 2020 RESIN(E)/HARZ

Version 7
Revision Date 20.02.2007

Print Date 22.02.2007

Obtain medical attention.

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Water spray.
Dry powder.
Carbon dioxide (CO₂).
Foam.
- Extinguishing media which must not be used for safety reasons : High volume water jet.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus and protective suit.
- Further information : Burning produces obnoxious and toxic fumes.
Carbon oxides.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Keep away from sources of ignition - No smoking.
Do not breathe vapours/dust.
Avoid contact with skin, eyes and clothing.
- Environmental precautions : Prevent product from entering drains.
Do not contaminate surface water.
Avoid subsoil penetration.
- Methods for cleaning up : Soak up with inert absorbent material and dispose of as hazardous waste.

7. HANDLING AND STORAGE

Handling

- Advice on safe handling : Provide sufficient air exchange and/or exhaust in work rooms.
Handle and open container with care.

Storage

- Further information on storage conditions : Keep away from food, drink and animal feeding stuffs.
Keep container tightly closed.
Keep at temperatures between 2 and 40°C.
- Storage hazard class : Storage class 10, Environmentally hazardous liquids
- Huntsman Advanced Materials

Ident-No: ARALDITE 2020 RESIN(E)/HARZ

Version 7
Revision Date 20.02.2007

Print Date 22.02.2007

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Control parameters	Update	Basis
------------	---------	--------------------	--------	-------

Engineering measures

No special precautions required.

Personal protective equipment

- Respiratory protection : In case of insufficient ventilation wear suitable respiratory equipment.
Filter type AX-P2 (organic vapours, particles)
- Eye protection : Tightly fitting safety goggles.
- Hand protection : Material of gloves for long term application (BTT>480 min):
Butyl rubber
Ethyl Vinyl Alcohol Laminate (EVAL)
Material of gloves for short term/splash application (10 min<BTT<480 min):
Nitrile rubber
Neoprene rubber
Use gloves approved to relevant standards e.g. EN 374 (Europe), F739 (US).
Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material and dexterity. Always seek advice from glove suppliers.
Additional information can be found for instance at www.gisbau.de
- Skin and body protection : long sleeved clothing
- Hygiene measures : Keep away from food, drink and animal feeding stuffs.
Wash hands before breaks and immediately after handling the product.
- Protective measures : Keep away from sources of ignition - No smoking.
Avoid contact with skin, eyes and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Form : liquid
- Colour : light blue
clear
- Odour : slight
- pH : approx.7

Ident-No: ARALDITE 2020 RESIN(E)/HARZ

Version 7
Revision Date 20.02.2007

Print Date 22.02.2007

	at (20 °C) 1:1 in water
Boiling point	: > 200 °C
Thermal decomposition	: > 200 °C
Flash point	: 140 °C Method: DIN 51758 (Pensky-Martens Closed Cup)
Vapour pressure	: < 0.01 Pa at 20 °C
Density	: 1.12 g/cm ³ at 25 °C
Water solubility	: at 20 °C Note: practically insoluble
Miscibility with water	: immiscible at 20 °C
Viscosity, dynamic	: 150 mPa.s at 25 °C

10. STABILITY AND REACTIVITY

Conditions to avoid	: Note: Take necessary action to avoid static electricity discharge.
Materials to avoid	: Strong acids and strong bases. Strong oxidizing agents.
Hazardous decomposition products	: Carbon oxides. Burning produces obnoxious and toxic fumes.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	: LD50 rat Dose: > 5,000 mg/kg
Eye irritation	: irritating rabbit
Skin irritation	: irritating rabbit dermal
Sensitization	: Causes sensitization. guinea pig dermal

Ident-No: ARALDITE 2020 RESIN(E)/HARZ

Version 7
Revision Date 20.02.2007

Print Date 22.02.2007

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

Biodegradability : Result: Not readily biodegradable.

Ecotoxicity effects

Further information on ecology

Additional ecological information : Avoid subsoil penetration.
Prevent product from entering drains.
Do not contaminate surface water.

13. DISPOSAL CONSIDERATIONS

Product : Waste Key Number: 070208
Must be incinerated, when in compliance with local regulations.

Container : Empty containers can be landfilled after cleaning, when in compliance with the Environmental Protection (Duty of Care) Regulations 1991.

14. TRANSPORT INFORMATION

Land transport

ADR:

UN-No: 3082
Class: 9
Classification code: M6
Packaging group: III
Risk No.: 90
ADR/RID-Labels: 9
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
contains: BISPHENOL A EPOXY RESIN

RID:

UN-No: 3082
Class: 9
Packaging group: III
Risk No.: 90
ADR/RID-Labels: 9
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
contains: BISPHENOL A EPOXY RESIN

Sea transport

Ident-No: ARALDITE 2020 RESIN(E)/HARZ

Version 7
Revision Date 20.02.2007

Print Date 22.02.2007

IMDG:

UN-No: 3082
Class: 9
Packaging group: III
ADR/RID-Labels: 9
MFAG:
EmS: F-A S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
contains: (BISPHENOL A EPOXY RESIN)

Air transport

IATA-DGR:

UN/ID No.: UN 3082
Class: 9
Packaging group: III
Packing instruction (cargo aircraft): 914
Max. Qty/Pack.: 450.00 L
(999.00 = No limit)
Packing instruction (passenger aircraft): 914
Max. Qty/Pack.: 450.00 L
(999.00 = No limit)
ADR/RID-Labels: 9
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
contains: (BISPHENOL A EPOXY RESIN)

15. REGULATORY INFORMATION

Labelling according to EEC Directive

Labelling required

Symbol(s):	: Xn N	Harmful Dangerous for the environment
R-phrase(s)	: R20/21 R36/38 R43 R51/53	Harmful by inhalation and in contact with skin. Irritating to eyes and skin. May cause sensitization by skin contact. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrase(s)	: S28 S36/37/39	After contact with skin, wash immediately with plenty of soap and water. Wear suitable protective clothing, gloves and eye/face protection.

Ident-No: ARALDITE 2020 RESIN(E)/HARZ

Version 7
Revision Date 20.02.2007

Print Date 22.02.2007

S61 Avoid release to the environment. Refer to special instructions/safety data sheets.

Exceptional labelling of special preparations : Contains epoxy constituents. See information supplied by the manufacturer.

Hazardous components which must be listed on the label : butanedioldiglycidyl ether
EC-No.: 219-371-7
reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)

National legislation

Notification status

- : EINECS yes
- : TSCA yes
- :
- : DSL yes
- : AICS yes
- : KECI (KR) yes
- : ENCS (JP) yes
- : INV (CN) yes
- : PICCS (PH) no

16. OTHER INFORMATION

List of R-phrases (Section 2)

SAFETY DATA SHEET
according to applicable EC directive

HUNTSMAN

Enriching lives through innovation

Ident-No: ARALDITE 2020 RESIN(E)/HARZ

Version 7
Revision Date 20.02.2007

Print Date 22.02.2007

R20/21	Harmful by inhalation and in contact with skin.
R36/38	Irritating to eyes and skin.
R43	May cause sensitization by skin contact.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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

All information is based on results gained from experience and tests and is believed to be accurate but is given without acceptance of liability for loss or damage attributable to reliance thereon as conditions of use lie outside our control. Users should always carry out sufficient tests to establish the suitability of any products for their intended applications. No statements shall be incorporated in any contract unless expressly agreed in writing nor construed as recommending the use of any product in conflict of any patent. All goods are supplied subject to Huntsman Advanced Materials General Conditions of Sale.