ARALDITE® 203 HARDENER

Version	Revision Date:	MSDS Number:
1.0	05.05.2015	400001010381

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

1.1 Product identifier

Trade name : ARALDITE® 203 HARDENER

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

Use of the Substance/Mixture : Adhesives

1.3 Details of the supplier of the safety data sheet

Company : Huntsman Advanced Materials (Europe)BVBA
Address : Everslaan 45
3078 Everberg
Belgium
Telephone : +41 61 299 20 41
Telefax : +41 61 299 20 40

E-mail address of person responsible for the SDS : Global_Product_EHS_AdMat@huntsman.com

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

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 3

Acute toxicity, Category 4

Acute toxicity, Category 4

Skin corrosion/irritation, Category 1B

Serious eye damage/eye irritation, Category 1

Skin sensitization, Category 1

Chronic aquatic toxicity, Category 3

2.2 Label elements

Labeling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal Word : Danger

Hazard Statements :	H226	Flammable liquid and vapour.
	H302 + H312	Harmful if swallowed or in contact with skin
	H314	Causes severe skin burns and eye damage.
	H317	May cause an allergic skin reaction.
	H412	Harmful to aquatic life with long lasting effects.
Precautionary Statements :	**Prevention:**	
	P280	Wear protective gloves.
	P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
	P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
	P273	Avoid release to the environment.
	Response:	
	P304	IF INHALED:
	P340	Remove victim to fresh air and keep at rest in a position comfortable for breathing.
	P310	Immediately call a POISON CENTER or doctor/ physician.
	P301	IF SWALLOWED:
	P331	Do NOT induce vomiting.
	P303	IF ON SKIN (or hair):
	P361	Take off immediately all contaminated clothing.

P353	Rinse skin with water or shower.
P305	IF IN EYES:
Storage:	
P235	Keep cool.
Disposal:	
ENVT12	Dispose of waste product or used containers according to local regulations.

Hazardous ingredients which must be listed on the label:
3,6-diazaoctanethylenediamin

2.3 Other hazards

None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous ingredients

Chemical Name	CAS-No. EC-No. Registration number	Classification (REGULATION (EC) No 1272/2008)	Concentration (%)
Trientine	112-24-3 203-950-6 05-2114706116-59-0000	Acute Tox. 4; H302, H312 Skin Corr. 1B; H314 Skin Sens. 1; H317 Aquatic Chronic 3; H412	>= 30 - <= 60
3-Aminopropyldiethylamine	104-78-9 203-236-4 05-2117325004-61-0000	Flam. Liq. 3; H226 Acute Tox. 4; H302, H312 Skin Corr. 1B; H314 Skin Sens. 1; H317	>= 30 - <= 60

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.
Consult a physician if necessary.

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

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. May form explosive mixtures in air. Flash back possible over considerable distance.
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. Wear respiratory protection. Ensure adequate ventilation. Evaporates. Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Pay attention to flashback.

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

6.4 Reference to other sections

None

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Avoid contact with skin and eyes.
Avoid inhalation of vapor or mist.
For personal protection see section 8.
Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.
Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity.
Keep away from flames and sparks.
Keep away from heat.
Use only with adequate ventilation.
Smoking, eating and drinking should be prohibited in the application area.
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Normal measures for preventive fire protection. Vapors are heavier than air and may spread along floors. Vapors may form explosive mixtures with air.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation, especially in confined areas. Avoid exposure to vapor. Do not inhale aerosol. 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. Take measures to prevent the build up of electrostatic charge. Use explosion-proof equipment. No smoking.

Advice on common storage : Strong bases

Strong oxidizing agents

Storage class (TRGS 510) : 8A, Combustible, corrosive hazardous materials

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
  Nitrile rubber
  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 : 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 : liquid

Color : red

Odor : amine-like

Boiling point : > 150 °C

Flash point : 51 °C
Method: Pensky-Martens closed cup, closed cup

Density : 0,91 g/cm3 (25 °C)

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

Decomposition temperature : > 200 °C

Viscosity
Viscosity, dynamic : 10 - 20 mPa.s (25 °C)

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
Strong oxidizing agents

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:

3,6-diazaoctanethylenediamin**:**
Acute oral toxicity : LD50 (Rat, male and female): 1.716,2 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : No data available

Ingredients:

3,6-diazaoctanethylenediamin**:**
Acute dermal toxicity : LD50 (Rabbit, male and female): 1.465,4 mg/kg
Method: OECD Test Guideline 402

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

Skin corrosion/irritation

Ingredients:

3,6-diazaoctanethylenediamin**:**
Species: Rabbit
Assessment: Corrosive
Method: OECD Test Guideline 405
Result: Corrosive

Serious eye damage/eye irritation

Ingredients:

3,6-diazaoctanethylenediamin**:**
Species: Rabbit
Assessment: Corrosive
Method: OECD Test Guideline 404
Result: Corrosive

Respiratory or skin sensitization

Ingredients:

1,2-Ethanediamine, N1,N2-bis(2-aminoethyl)-**:**
Routes of exposure: Skin
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Causes sensitization.

Assessment: No data available

Germ cell mutagenicity

Ingredients:

3,6-diazaoctanethylenediamin**:**
Genotoxicity in vitro : Concentration: 0 - 200 µg/L
Metabolic activation: negative
Method: OECD Test Guideline 482
Result: negative

Ingredients:

3,6-diazaoctanethylenediamin**:**
Genotoxicity in vivo : Application Route: Intraperitoneal injection
Dose: 0 - 600 mg/kg
Method: OECD Test Guideline 474
Result: negative

Carcinogenicity

Ingredients:

3,6-diazaoctanethylenediamin**:**
Species: Mouse, (male)
Application Route: Dermal
Dose: 42 mg/kg
Frequency of Treatment: 3 daily
Method: OECD Test Guideline 451
Result: negative

Carcinogenicity - Assessment : No data available

Reproductive toxicity

Effects on fertility : No data available

Ingredients:

3,6-diazaoctanethylenediamin**:**
Effects on fetal development : Species: Rat
Application Route: Oral
General Toxicity Maternal: NOAEL (No observed adverse effect level): > 750 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.

Species: Rabbit
Application Route: Dermal
General Toxicity Maternal: NOAEL (No observed adverse effect level): 125 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.

Reproductive toxicity - Assessment : No data available

STOT-single exposure

No data available

STOT-repeated exposure

No data available

Repeated dose toxicity

Ingredients:

3,6-diazaoctanethylenediamin**:**
Species: Rat, male and female
NOAEL (No observed adverse effect level): 50
Application Route: Ingestion
Exposure time: 26 WeeksNumber of exposures: 7 d
Method: Subchronic toxicity

Repeated dose toxicity - Assessment : No data available

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:

3,6-diazaoctanethylenediamin**:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 330 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: Fish Acute Toxicity Test

Ingredients:

3,6-diazaoctanethylenediamin**:**

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 31,1 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water

Method: Directive 67/548/EEC, Annex V, C.2.

Ingredients:

3,6-diazaoctanethylenediamin**:**

Toxicity to algae	:	ErC50 (Selenastrum capricornutum (green algae)): 20 mg/l Exposure time: 72 h Test Type: semi-static test Test substance: Fresh water Method: OECD Test Guideline 201
M-Factor (Acute aquatic toxicity)	:	No data available
Toxicity to fish (Chronic toxicity)	:	No data available

Ingredients:

3,6-diazaoctanethylenediamin**:**

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	EC10: 1,9 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: semi-static test Test substance: Fresh water Method: OECD Test Guideline 202
M-Factor (Chronic aquatic toxicity)	:	No data available

Ingredients:

3,6-diazaoctanethylenediamin**:**

Toxicity to bacteria	:	EC50 (activated sludge): 800 mg/l Exposure time: 0,5 h Test Type: static test Test substance: Fresh water
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:

3,6-diazaoctanethylenediamin**:**

Biodegradability : Inoculum: activated sludge
Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 162 d
Method: OECD Test Guideline 301D

Inoculum: activated sludge
Result: Not readily biodegradable.
Biodegradation: 20 %
Exposure time: 84 d
Method: Inherent Biodegradability: Modified SCAS Test

Biochemical Oxygen Demand (BOD) : No data available

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

Bioaccumulation : No data available

12.4 Mobility in soil

Mobility : No data available

Ingredients:

3,6-diazaoctanethylenediamin**:**

Distribution among environmental compartments	:	Koc: 1584,9 - 5012. Method: OECD Test Guideline 106
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
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. Where possible recycling is preferred to disposal or incineration. 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 2734
14.2 UN proper shipping name	:	Amines, liquid, corrosive, flammable, n.o.s. (TRIETHYLENE TETRAMINE, N,N-DIETHYL-1,3-DIAMINOPROPANE)
14.3 Transport hazard class(es)	:	8
Subsidiary risk	:	3

14.4 Packing group	:	II
Labels	:	Corrosive, Flammable Liquids
Packing instruction (cargo aircraft)	:	855
Packing instruction (passenger aircraft)	:	851

IMDG

14.1 UN number	:	UN 2734
14.2 UN proper shipping name	:	AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. (TRIETHYLENE TETRAMINE, N,N-DIETHYL-1,3-DIAMINOPROPANE)
14.3 Transport hazard class(es)	:	8
Subsidiary risk	:	3
14.4 Packing group	:	II
Labels	:	8 (3)
EmS Code	:	F-E, S-C
14.5 Environmental hazards		
Marine pollutant	:	no

ADR

14.1 UN number	:	UN 2734
14.2 UN proper shipping name	:	AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. (TRIETHYLENE TETRAMINE, N,N-DIETHYL-1,3-DIAMINOPROPANE)
14.3 Transport hazard class(es)	:	8
Subsidiary risk	:	3
14.4 Packing group	:	II
Labels	:	8 (3)
14.5 Environmental hazards		
Marine pollutant	:	no

RID

14.1 UN number	:	UN 2734
14.2 UN proper shipping name	:	AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. (TRIETHYLENE TETRAMINE, N,N-DIETHYL-1,3-DIAMINOPROPANE)
14.3 Transport hazard class(es)	:	8
Subsidiary risk	:	3
14.4 Packing group	:	II
Labels	:	8 (3)
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	:	Not On TSCA Inventory
DSL	:	This product contains the following components that are not on the Canadian DSL nor NDSL.
AICS	:	Not in compliance with the inventory
NZIoC	:	Not in compliance with the inventory
ENCS	:	Not in compliance with the inventory
ISHL	:	Not in compliance with the inventory
KECI	:	Not in compliance with the inventory
PICCS	:	Not in compliance with the inventory
IECSC	:	Not 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

H226	:	Flammable liquid and vapour.
H302	:	Harmful if swallowed.
H312	:	Harmful in contact with skin.
H314	:	Causes severe skin burns and eye damage.
H317	:	May cause an allergic skin reaction.
H412	:	Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Chronic	:	Chronic aquatic toxicity
Flam. Liq.	:	Flammable liquids
Skin Corr.	:	Skin corrosion

Skin Sens. : Skin sensitization

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.

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.

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. NO PART OF THIS DATA SHEET MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM, OR BY ANY MEANS, WITHOUT PERMISSION IN WRITING FROM HUNTSMAN. ALL REQUESTS FOR PERMISSION TO REPRODUCE MATERIAL FROM THIS DATA SHEET SHOULD BE DIRECTED TO HUNTSMAN, MANAGER, PRODUCT SAFETY AT THE ABOVE ADDRESS.