

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® CW 2243-1 L BD

Version	Revision Date:	SDS Number:	Date of last issue: 03.07.2018
1.1	24.05.2023	400001007952	Date of first issue: 03.07.2018

Print Date 25.03.2024

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

1.1 Product identifier

Trade name : ARALDITE® CW 2243-1 L BD

Unique Formula Identifier (UFI) : CK5G-80NX-A00S-FKSX

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

Use of the Substance/Mixture : Component used for the manufacture of electrical insulation parts

1.3 Details of the supplier of the safety data sheet

Company : Huntsman Advanced Materials (Europe) BV
Address : Everslaan 45
3078 Everberg
Belgium

Telephone : +41 61 299 20 41
Telefax : +41 61 299 20 40

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

1.4 Emergency telephone number

Emergency telephone number : 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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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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.
Eye irritation, Category 2	H319: Causes serious eye irritation.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Long-term (chronic) aquatic hazard, Category 3	H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Warning

Hazard statements :

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P261	Avoid breathing mist or vapours.
P264	Wash skin thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.

Response:

P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.

Hazardous components which must be listed on the label:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane
Polypropyleneglycol diglycidylether

Additional Labelling

EUH205 Contains epoxy constituents. May produce an allergic reaction.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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1.1	24.05.2023	400001007952	03.07.2018
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Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 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)
2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane	1675-54-3 216-823-5 603-073-00-2 01-2119456619-26	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1; H317 Aquatic Chronic 2; H411 specific concentration limit Skin Irrit. 2; H315 ≥ 5 % Eye Irrit. 2; H319 ≥ 5 %	≥ 20 - < 25
Polypropyleneglycol diglycidylether	9072-62-2 Polymer	Skin Sens. 1; H317	≥ 10 - < 20

For explanation of abbreviations see section 16.

Both 25068-38-6 and 1675-54-3 can be used to describe the epoxy resin which is produced through the reaction of bisphenol A and epichlorohydrin

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.
Treat symptomatically.
Get medical attention if symptoms occur. |
| Protection of first-aiders | : First Aid responders should pay attention to self-protection and use the recommended protective clothing
If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Avoid inhalation, ingestion and contact with skin and eyes.
No action shall be taken involving any personal risk or without suitable training. |

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

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Print Date 25.03.2024

It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

- | | |
|-------------------------|---|
| If inhaled | : Call a physician or poison control centre immediately.
If inhaled, remove to fresh air.
Get medical attention if symptoms occur. |
| In case of skin contact | : If skin irritation persists, call a physician.
If on skin, rinse well with water.
If on clothes, remove clothes. |
| In case of eye contact | : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist. |
| If swallowed | : Keep respiratory tract clear.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital. |

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- | | |
|--------------------------------|--|
| Suitable extinguishing media | : Water spray
Alcohol-resistant foam
Carbon dioxide (CO ₂)
Dry chemical |
| Unsuitable extinguishing media | : Exercise caution when using a high volume water jet as it may scatter and spread fire |

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 | : Metal oxides
Carbon oxides
Halogenated compounds
Carbon monoxide
Carbon dioxide (CO ₂) |

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

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5.3 Advice for firefighters

- | | | |
|---|---|---|
| Special protective equipment for firefighters | : | Wear self-contained breathing apparatus for firefighting if necessary. |
| Specific extinguishing methods | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Further information | : | Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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

6.2 Environmental precautions

- | | | |
|---------------------------|---|---|
| Environmental precautions | : | Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities. |
|---------------------------|---|---|

6.3 Methods and material for containment and cleaning up

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

6.4 Reference to other sections

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

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- | | | |
|-------------------------|---|--|
| Advice on safe handling | : | Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitisation of susceptible persons.
Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product.
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. |
|-------------------------|---|--|

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® CW 2243-1 L BD

Version 1.1 Revision Date: 24.05.2023 SDS Number: 400001007952 Date of last issue: 03.07.2018
Date of first issue: 03.07.2018

Print Date 25.03.2024

Dispose of rinse water in accordance with local and national regulations.

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

Hygiene measures : 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. Keep in properly labelled containers.

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

Recommended storage temperature : 2 - 40 °C

Further information on storage stability : Stable under normal conditions.

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
calcium carbonate	471-34-1	VME	10 mg/m3	FR VLE
Further information	Indicative exposure limits			

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

Substance name	End Use	Exposure routes	Potential health effects	Value
2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane	Workers	Inhalation	Long-term systemic effects	4,93 mg/m3
	Workers	Dermal	Long-term systemic effects	0,75 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	0,87 mg/m3
	Consumers	Dermal	Long-term systemic effects	0,0893 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	0,5 mg/kg bw/day
calcium carbonate	Workers	Inhalation	Long-term local	6,36 mg/m3

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

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ARALDITE® CW 2243-1 L BD

Version 1.1 Revision Date: 24.05.2023 SDS Number: 400001007952 Date of last issue: 03.07.2018
Date of first issue: 03.07.2018

Print Date 25.03.2024

			effects	
	Consumers	Inhalation	Long-term local effects	1,06 mg/m3

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

Substance name	Environmental Compartment	Value
2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane	Fresh water	0,006 mg/l
	Marine water	0,001 mg/l
	Fresh water sediment	0,341 mg/kg dry weight (d.w.)
	Marine sediment	0,034 mg/kg dry weight (d.w.)
	Soil	0,065 mg/kg dry weight (d.w.)
	Sewage treatment plant	10 mg/l
	Secondary Poisoning	11 mg/kg

8.2 Exposure controls

Personal protective equipment

Eye/face 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
Break through time : > 8 h

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

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

Remarks : The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and body protection : Impervious clothing
Choose body protection according to the amount and

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

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ARALDITE® CW 2243-1 L BD

Version	Revision Date:	SDS Number:	Date of last issue: 03.07.2018
1.1	24.05.2023	400001007952	Date of first issue: 03.07.2018

Print Date 25.03.2024

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

Physical state	: liquid
Colour	: grey
Odour	: slight
Odour Threshold	: No data is available on the product itself.
pH	: substance/mixture is non-soluble (in water)
Melting point/freezing point	: No data is available on the product itself.
Boiling point	: > 200 °C
Flash point	: ca. 177 °C Method: Pensky-Martens closed cup, closed cup
Flammability (solid, gas)	: No data is available on the product itself.
Upper explosion limit / Upper flammability limit	: No data is available on the product itself.
Lower explosion limit / Lower flammability limit	: No data is available on the product itself.
Vapour pressure	: 0,0001 hPa (20 °C)
Relative vapour density	: No data is available on the product itself.
Relative density	: No data is available on the product itself.
Density	: 1,63 g/cm ³ (20 °C)
Solubility(ies) Water solubility	: practically insoluble (20 °C)
Solubility in other solvents	: No data is available on the product itself.
Partition coefficient: n-	: No data is available on the product itself.

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1.1	24.05.2023	400001007952	Date of first issue: 03.07.2018

Print Date 25.03.2024

octanol/water

Auto-ignition temperature : No data is available on the product itself.

Decomposition temperature : > 200 °C

Viscosity

Viscosity, dynamic : ca. 10 000 mPa.s (25 °C)

9.2 Other information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No hazards to be specially mentioned.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

Materials to avoid : None known.

10.6 Hazardous decomposition products

Hazardous decomposition products : aluminium oxide
carbon dioxide
carbon monoxide
Halogenated compounds

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

Acute oral toxicity : LD50 (Rat, female): > 2 000 mg/kg
Method: OECD Test Guideline 420
Assessment: The substance or mixture has no acute oral toxicity
Remarks: No mortality observed at this dose.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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Version	Revision Date:	SDS Number:	Date of last issue: 03.07.2018
1.1	24.05.2023	400001007952	Date of first issue: 03.07.2018

Print Date 25.03.2024

Acute dermal toxicity : LD50 (Rat, male and female): > 2 000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Polypropyleneglycol diglycidylether:

Acute oral toxicity : LD50 (Rat, male and female): > 2 000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

Median lethal dose (Rat, male and female): >5 ml/kg

Acute dermal toxicity : LD50 (Rat, male and female): > 5 000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

Species : Rabbit
Exposure time : 4 h
Assessment : Irritating to skin.
Method : OECD Test Guideline 404
Result : Irritating to skin.

Polypropyleneglycol diglycidylether:

Species : Rabbit
Assessment : No skin irritation
Method : OECD Test Guideline 404
Result : No skin irritation

Serious eye damage/eye irritation

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

Species : Rabbit
Assessment : Irritating to eyes.
Method : OECD Test Guideline 405
Result : Irritating to eyes.

Polypropyleneglycol diglycidylether:

Species : Rabbit
Assessment : No eye irritation
Method : OECD Test Guideline 405
Result : No eye irritation

Respiratory or skin sensitisation

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® CW 2243-1 L BD

Version	Revision Date:	SDS Number:	Date of last issue: 03.07.2018
1.1	24.05.2023	400001007952	Date of first issue: 03.07.2018

Print Date 25.03.2024

Test Type	: Local lymph node assay (LLNA)
Exposure routes	: Skin
Species	: Mouse
Method	: OECD Test Guideline 429
Result	: The product is a skin sensitiser, sub-category 1B.

Polypropyleneglycol diglycidylether:

Exposure routes	: Skin
Species	: Guinea pig
Result	: May cause sensitisation by skin contact.

Germ cell mutagenicity

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

Genotoxicity in vitro	: Test Type: In vitro mammalian cell gene mutation test Test system: mouse lymphoma cells Metabolic activation: without metabolic activation Result: positive Test Type: reverse mutation assay Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay) Result: negative
Genotoxicity in vivo	: Test Type: in vivo assay Species: Mouse (male) Cell type: Germ Application Route: Oral Dose: 3333, 10000 mg/kg Result: negative Test Type: gene mutation test Species: Rat (male) Cell type: Somatic Application Route: Oral Dose: 50,250,500,1000 mg/kg bw/day Method: OECD Test Guideline 488 Result: negative

Polypropyleneglycol diglycidylether:

Genotoxicity in vitro	: Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: Metabolic activation Method: OECD Test Guideline 471 Result: positive GLP: no
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SAFETY DATA SHEET

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HUNTSMAN

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Version	Revision Date:	SDS Number:	Date of last issue: 03.07.2018
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Print Date 25.03.2024

Carcinogenicity

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

Species	: Rat, male
Application Route	: Oral
Exposure time	: 24 month(s)
Dose	: 0, 2, 15, or 100 mg/kg bw/day
Frequency of Treatment	: 7 days/week
NOAEL	: 15 mg/kg bw/day
Method	: OECD Test Guideline 453
Result	: negative
Target Organs	: Digestive organs

Species	: Mouse, male
Application Route	: Dermal
Exposure time	: 24 month(s)
Dose	: 0, 0.1, 10, 100 mg/kg bw/day
Frequency of Treatment	: 3 days/week
NOEL	: 0,1 mg/kg body weight
Method	: OECD Test Guideline 453
Result	: negative
Target Organs	: Digestive organs

Species	: Rat, female
Application Route	: Dermal
Exposure time	: 24 month(s)
Dose	: 0.1, 100, 1000 mg/kg bw/day
Frequency of Treatment	: 5 days/week
NOEL	: 100 mg/kg body weight
Method	: OECD Test Guideline 453
Result	: negative

Species	: Rat, female
Application Route	: Oral
Exposure time	: 24 month(s)
Dose	: 0, 2, 15, or 100 mg/kg bw/day
Frequency of Treatment	: 7 days/week
NOAEL	: 100 mg/kg bw/day
Method	: OECD Test Guideline 453
Result	: negative
Target Organs	: Digestive organs

Species	: Rat, females
Application Route	: Oral
Exposure time	: 24 month(s)
Dose	: 0, 2, 15, or 100 mg/kg bw/day
Frequency of Treatment	: 7 days/week
NOEL	: 2 mg/kg bw/day
Method	: OECD Test Guideline 453
Result	: negative
Target Organs	: Digestive organs

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

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ARALDITE® CW 2243-1 L BD

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Reproductive toxicity

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

Effects on fertility : Test Type: Two-generation study
Species: Rat, male and female
Application Route: Oral
Dose: 0, 50, 180, 540 or 750 milligram per kilogram
Duration of Single Treatment: 238 d
Frequency of Treatment: 1 daily
General Toxicity - Parent: NOEL: 540 mg/kg body weight
General Toxicity F1: NOEL: 750 mg/kg body weight
Symptoms: No adverse effects
Method: OECD Test Guideline 416
Result: No effects on fertility and early embryonic development were detected.

Effects on foetal development : Species: Rabbit, female
Application Route: Dermal
Dose: 0, 30, 100 or 300 milligram per kilogram
Duration of Single Treatment: 28 d
Frequency of Treatment: 1 daily
General Toxicity Maternal: NOAEL: 30 mg/kg body weight
Developmental Toxicity: NOAEL: 300 mg/kg body weight
Method: Other guidelines
Result: No teratogenic effects

Test Type: Pre-natal
Species: Rabbit, female
Application Route: Oral
Dose: 0, 20, 60 or 180 milligram per kilogram
Duration of Single Treatment: 13 d
Frequency of Treatment: 1 daily
General Toxicity Maternal: NOAEL: 60 mg/kg body weight
Developmental Toxicity: NOAEL: 180 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

Test Type: Pre-natal
Species: Rat, female
Application Route: Oral
Dose: 0, 60, 180 and 540 milligram per kilogram
Duration of Single Treatment: 10 d
Frequency of Treatment: 1 daily
General Toxicity Maternal: NOAEL: 180 mg/kg body weight
Developmental Toxicity: NOAEL: > 540 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

STOT - single exposure

No data available

STOT - repeated exposure

No data available

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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ARALDITE® CW 2243-1 L BD

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Repeated dose toxicity

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

Species	: Rat, male and female
NOAEL	: 50 mg/kg
Application Route	: oral (gavage)
Exposure time	: 14 Weeks
Number of exposures	: 7 d
Dose	: 0, 50, 250, 1000 mg/kg/day
Method	: OECD Test Guideline 408

Species	: Rat, male and female
NOAEL	: >= 10 mg/kg
Application Route	: Skin contact
Exposure time	: 13 Weeks
Number of exposures	: 5 d
Dose	: 0, 10, 100, 1000 mg/kg/day
Method	: OECD Test Guideline 411

Species	: Mouse, male
NOAEL	: 100 mg/kg
Application Route	: Skin contact
Exposure time	: 13 Weeks
Number of exposures	: 3 d
Dose	: 0, 1, 10, 100 mg/kg/day
Method	: OECD Test Guideline 411

Aspiration toxicity

No data available

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment	: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher
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Experience with human exposure

No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

No data available

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® CW 2243-1 L BD

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Print Date 25.03.2024

SECTION 12: Ecological information

12.1 Toxicity

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 2 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 1,8 mg/l
aquatic invertebrates
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Toxicity to algae/aquatic : EC50 : 11 mg/l
plants
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: EPA-660/3-75-009

NOEC : 4,2 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: EPA-660/3-75-009

Toxicity to microorganisms : IC50 (activated sludge): > 100 mg/l
Exposure time: 3 h
Test Type: static test
Test substance: Fresh water

Toxicity to daphnia and other : NOEC: 0,3 mg/l
aquatic invertebrates
Exposure time: 21 d
(Chronic toxicity) Species: Daphnia magna (Water flea)
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 211

Ecotoxicology Assessment

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

Polypropyleneglycol diglycidylether:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 100 mg/l
End point: mortality
Exposure time: 96 h
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.1.

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 320 mg/l
aquatic invertebrates
End point: Immobilization

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

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ARALDITE® CW 2243-1 L BD

Version	Revision Date:	SDS Number:	Date of last issue:
1.1	24.05.2023	400001007952	03.07.2018
			Date of first issue: 03.07.2018

Print Date 25.03.2024

Exposure time: 24 h
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.2.

Toxicity to microorganisms : EC50 (activated sludge): > 100 mg/l
Exposure time: 3 h
Test Type: Fresh water

12.2 Persistence and degradability

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge, non-adapted
Concentration: 20 mg/l
Result: Not readily biodegradable.
Biodegradation: 5 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

Stability in water : Degradation half life (DT50): 4,83 d (25 °C)
pH: 4
Method: OECD Test Guideline 111
Remarks: Fresh water

Degradation half life (DT50): 7,1 d (25 °C)
pH: 9
Method: OECD Test Guideline 111
Remarks: Fresh water

Degradation half life (DT50): 3,58 d (25 °C)
pH: 7
Method: OECD Test Guideline 111
Remarks: Fresh water

Polypropyleneglycol diglycidylether:

Biodegradability : Inoculum: Sewage (STP effluent)
Concentration: 20 mg/l
Result: Not readily biodegradable.
Biodegradation: 0 %
Related to: Dissolved organic carbon (DOC)
Exposure time: 28 d
Method: OECD Test Guideline 301B

12.3 Bioaccumulative potential

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

Bioaccumulation : Bioconcentration factor (BCF): 31
Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 3,242 (25 °C)
pH: 7,1

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® CW 2243-1 L BD

Version	Revision Date:	SDS Number:	Date of last issue: 03.07.2018
1.1	24.05.2023	400001007952	Date of first issue: 03.07.2018

Print Date 25.03.2024

Method: OECD Test Guideline 117

12.4 Mobility in soil

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:

Distribution among : Koc: 445
environmental compartments

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 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

12.7 Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life with long lasting effects.

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. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of contents/ container to an approved waste disposal plant.
Contaminated packaging	: Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® CW 2243-1 L BD

Version	Revision Date:	SDS Number:	Date of last issue:
1.1	24.05.2023	400001007952	03.07.2018
			Date of first issue: 03.07.2018

Print Date 25.03.2024

SECTION 14: Transport information

14.1 UN number or ID number

UNRTDG	: Not regulated as dangerous goods
ADN	: Not regulated as dangerous goods
ADR	: Not regulated as dangerous goods
RID	: Not regulated as dangerous goods
IMDG	: Not regulated as dangerous goods
IATA	: Not regulated as dangerous goods

14.2 UN proper shipping name

UNRTDG	: Not regulated as dangerous goods
ADN	: Not regulated as dangerous goods
ADR	: Not regulated as dangerous goods
RID	: Not regulated as dangerous goods
IMDG	: Not regulated as dangerous goods
IATA	: Not regulated as dangerous goods

14.3 Transport hazard class(es)

ADN	: Not regulated as dangerous goods
ADR	: Not regulated as dangerous goods
RID	: Not regulated as dangerous goods
IMDG	: Not regulated as dangerous goods
IATA	: Not regulated as dangerous goods

14.4 Packing group

ADN	: Not regulated as dangerous goods
ADR	: Not regulated as dangerous goods
RID	: Not regulated as dangerous goods
IMDG	: Not regulated as dangerous goods
IATA (Cargo)	: Not regulated as dangerous goods
IATA (Passenger)	: Not regulated as dangerous goods

14.5 Environmental hazards

Not regulated as dangerous goods

14.6 Special precautions for user

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

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Print Date 25.03.2024

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

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

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : Conditions of restriction for the following entries should be considered:
Number on list 75, 3

If you intend to use this product as tattoo ink, please contact your vendor.

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. Not applicable

Occupational Illnesses (R-461-3, France) : 51

Other regulations:

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

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

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

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

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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® CW 2243-1 L BD

Version	Revision Date:	SDS Number:	Date of last issue: 03.07.2018
1.1	24.05.2023	400001007952	Date of first issue: 03.07.2018

Print Date 25.03.2024

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

TSCA : All substances listed as active on the TSCA inventory

Inventories

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

15.2 Chemical safety assessment

SECTION 16: Other information

Full text of H-Statements

H315	: Causes skin irritation.
H317	: May cause an allergic skin reaction.
H319	: Causes serious eye irritation.
H411	: Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Aquatic Chronic	: Long-term (chronic) aquatic hazard
Eye Irrit.	: Eye irritation
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation
FR VLE	: France. Occupational Exposure Limits
FR VLE / VME	: Time Weighted Average

Further information

Classification of the mixture:

Skin Irrit. 2	H315
Eye Irrit. 2	H319
Skin Sens. 1	H317
Aquatic Chronic 3	H412

Classification procedure:

Calculation method
Calculation method
Calculation method
Calculation method

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SAFETY DATA SHEET

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THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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