



SAFETY DATA SHEET	Revision Date: 25.06.2018
	Print Date: 06.03.2019
	SDS Number: R0402439
Derakane™ 510A-40 epoxy vinyl ester resin ™ Trademark, Ashland or its subsidiaries, registered in various countries 40222	Version: 3.0

Conforms to EU Regulation 1907/2006/EC as amended. - SDSGHS_ES

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

1.1 Product identifier

Trade name : Derakane™ 510A-40
epoxy vinyl ester resin
™ Trademark, Ashland or its subsidiaries, registered in
various countries

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

Recommended use : Reserved for industrial and professional use.

Restrictions on use

Consumer use

1.3 Details of the supplier of the safety data sheet

Ashland
P.O. Box 8619
NL3009 AP, Rotterdam
Netherlands
+31 10 497 5000 (in the Netherlands), or
contact your local CSR contact person

EUSMT@ashland.com

1.4 Emergency telephone number

00-800-274-5263-3/001-859-357-3564, or contact
your local emergency telephone number at + 34
91 562 04 20

Product Information

+31 10 497 5000 (in the Netherlands), or contact
your local CSR contact person

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 3 H226: Flammable liquid and vapour.

Skin irritation, Category 2 H315: Causes skin irritation.

Eye irritation, Category 2 H319: Causes serious eye irritation.



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Reproductive toxicity, Category 2

H361d: Suspected of damaging the unborn child.

Specific target organ toxicity - single exposure, Category 3, Respiratory system

H335: May cause respiratory irritation.

Specific target organ toxicity - repeated exposure, Category 1, Auditory organs

H372: Causes damage to organs through prolonged or repeated exposure if inhaled.

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 : Danger

Hazard statements :

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to organs (Auditory organs) through prolonged or repeated exposure if inhaled.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements :

Prevention:	
P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:	
P370 + P378	In case of fire: Use dry sand, dry chemical



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or alcohol-resistant foam to extinguish.

Hazardous components which must be listed on the label:

Styrene

2.3 Other hazards

Additional advice

No information available.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

Chemical name	CAS-No. EC-No. Registration number	Classification (REGULATION (EC) No 1272/2008)	Concentration (%)
Styrene	100-42-5 202-851-5 01-2119457861-32-0185 01-2119457861-32-xxxx	Flam. Liq.3; H226 Acute Tox.4; H332 Skin Irrit.2; H315 Eye Irrit.2; H319 Repr.2; H361d STOT SE3; H335 STOT RE1; H372 Asp. Tox.1; H304 Aquatic Chronic3; H412	>= 25,00 - < 40,00
Methacrylic acid	79-41-4 201-204-4 01-2119463884-26-0046 01-2119463884-26-0044	Acute Tox.4; H302 Acute Tox.4; H332 Acute Tox.3; H311 Skin Corr.1A; H314 Eye Dam.1; H318 STOT SE3; H335	>= 0,50 - < 1,00
Hydroquinone	123-31-9 204-617-8	Acute Tox.4; H302 Eye Dam.1; H318 Skin Sens.1; H317 Muta.2; H341 Carc.2; H351 Aquatic Acute1; H400 Aquatic Chronic1; H410	>= 0,00 - < 0,10



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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.
Call a POISON CENTRE or doctor/physician if exposed or you feel unwell.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : Move to fresh air.
IF INHALED: Call a POISON CENTER/ doctor if you feel unwell.
Keep patient warm and at rest.
If unconscious, place in recovery position and seek medical advice.
- In case of skin contact : Remove contaminated clothing. If irritation develops, get medical attention.
If on skin, rinse well with water.
Wash contaminated clothing before re-use.
If on clothes, remove clothes.
- In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Protect unharmed eye.
- If swallowed : Obtain medical attention.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
confusion
- Risks : Causes skin irritation.



	
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Causes serious eye irritation.
May cause respiratory irritation.
Suspected of damaging the unborn child.
Causes damage to organs through prolonged or repeated exposure if inhaled.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : No hazards which require special first aid measures.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Organic dusts at sufficient concentration can form explosive mixtures in air.
Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Hydrocarbons
carbon dioxide and carbon monoxide

5.3 Advice for firefighters

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



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Specific extinguishing methods : Product is compatible with standard fire-fighting agents.

Further information : Do not use a solid water stream as it may scatter and spread fire.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Use a water spray to cool fully closed containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Evacuate personnel to safe areas.
Remove all sources of ignition.
Use personal protective equipment.
Ensure adequate ventilation.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
Suppress (knock down) gases/vapours/mists with a water spray jet.

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 : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

6.4 Reference to other sections

For further information see Section 8 and Section 13 of the safety data sheet.



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SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Advice on safe handling : Open drum carefully as content may be under pressure. Avoid formation of aerosol. Provide sufficient air exchange and/or exhaust in work rooms. Do not breathe vapours/dust. Do not smoke. Container hazardous when empty. Take precautionary measures against static discharges. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. Smoking, eating and drinking should be prohibited in the application area. For personal protection see section 8. Dispose of rinse water in accordance with local and national regulations. Secondary operations, such as grinding and sanding, may produce dust. Maintain good housekeeping. Do not permit dust layers to accumulate, for example, on floors, ledges, and equipment, in order to avoid any potential for dust explosion hazards.
- Advice on protection against fire and explosion : Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). No sparking tools should be used. Keep away from open flames, hot surfaces and sources of ignition. Use only explosion-proof equipment.
- Hygiene measures : Wash hands before breaks and at the end of workday. When using do not eat or drink. When using do not smoke.

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. Observe label precautions. No smoking.
- Other data : No decomposition if stored and applied as directed.

7.3 Specific end use(s)



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Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Styrene	100-42-5	VLA-EC	40 ppm 172 mg/m ³	ES VLA
		VLA-ED	20 ppm 86 mg/m ³	ES VLA
Methacrylic acid	79-41-4	VLA-ED	20 ppm 72 mg/m ³	ES VLA
Hydroquinone	123-31-9	VLA-ED	2 mg/m ³	ES VLA

Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
STYRENE	100-42-5	mandelic acid and phenylglyoxilic acid: 400 mg/g Creatinine (Urine)	End of workday	ES VLB
		styrene: 0,2 mg/l (venous blood)	End of workday	ES VLB
HYDROQUINONE	123-31-9	methemoglobin: 1.5 % metahaemoglobine on total haemoglobine (Blood)	End of workday	ES VLB

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

Styrene	: End Use: Workers Exposure routes: Inhalation Potential health effects: Short-term exposure, Systemic effects Value: 289 mg/m³ End Use: Workers Exposure routes: Inhalation Potential health effects: Short-term exposure, Local effects
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Value: 306 mg/m³
End Use: Workers
Exposure routes: Inhalation
Potential health effects: Long-term exposure, Systemic effects

Value: 85 mg/m³
End Use: Workers
Exposure routes: Skin contact
Potential health effects: Long-term exposure, Systemic effects

Value: 406 mg/kg
End Use: Consumers
Exposure routes: Inhalation
Potential health effects: Short-term exposure, Systemic effects

Value: 174,25 mg/m³
End Use: Consumers
Exposure routes: Inhalation
Potential health effects: Short-term exposure, Local effects

Value: 182,75 mg/m³
End Use: Consumers
Exposure routes: Skin contact
Potential health effects: Long-term exposure, Systemic effects

Value: 343 mg/kg
End Use: Consumers
Exposure routes: Ingestion
Potential health effects: Long-term exposure, Systemic effects

Value: 2,1 mg/kg
End Use: Consumers
Exposure routes: Inhalation
Potential health effects: Long-term exposure, Systemic effects

Value: 10,2 mg/m³

8.2 Exposure controls

Engineering measures

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Provide appropriate exhaust ventilation at places where dust is formed.

Personal protective equipment

Eye protection : Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.

Use eye protection according to EN 166.

Hand protection
Material

: Laminate (Barrier© or Silvershield©)



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Break through time : 480 min
Glove thickness : > 0,5 mm

Remarks : The exact break through time can be obtained from the protective glove producer and this has to be observed. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and body protection : Protective clothing complying with EN 13688.
Safety shoes complying with EN ISO 20345.

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.

Filter type : Organic vapour type (A)

Respiratory protection complying with EN 136.
Respiratory protection complying with EN 140.
Respiratory protection complying with EN 14387.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : liquid

Odour : aromatic

Odour Threshold : No data available

pH :
No data available

Melting point/freezing point : No data available

Boiling point/boiling range : 145 °C
Calculated Phase Transition Liquid/Gas

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Flash point	: 30 °C
	Method: Pensky-Martens closed cup
Evaporation rate	: > 1 Ethyl Ether = 1
Upper explosion limit	: 6,1 %(V)
Lower explosion limit	: 1,1 %(V)
Vapour pressure	: 0,853 kPa (25 °C)
Relative vapour density	: > 1 (Air = 1.0)
Relative density	: No data available
Density	: 1,24 g/cm ³ (20 °C)
Solubility(ies)	
Water solubility	: insoluble
Solubility in other solvents	: No data available
Partition coefficient: n- octanol/water	: No data available
Decomposition temperature	: No data available
Viscosity	
Viscosity, dynamic	: No data available
Viscosity, kinematic	: > 20,5 mm ² /s (40 °C)
Oxidizing properties	: No data available

9.2 Other information

No data available



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SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Hazardous polymerisation may occur.
Vapours may form explosive mixture with air.
This product does not present a dust explosion hazard as delivered. However, fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source, is a potential dust explosion hazard.

10.4 Conditions to avoid

Conditions to avoid : Exposure to air.
Exposure to sunlight.

Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : Acids
aluminum
aluminum chloride
Bases
Copper
Copper alloys
halogens
iron chloride
metal salts
Strong oxidizing agents
Peroxides

10.6 Hazardous decomposition products

Hazardous decomposition products : carbon dioxide and carbon monoxide
Hydrocarbons



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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Information on likely routes of exposure : Inhalation
Skin contact
Eye Contact
Ingestion

Acute toxicity

Not classified based on available information.

Components:

Styrene

Acute oral toxicity	: LD50 Oral (Rat): > 2.000 mg/kg
Acute inhalation toxicity	: LC50 (Rat): 11,8 mg/l, 2770 ppm Exposure time: 4 h Test atmosphere: vapour No observed adverse effect level (Humans): 100 ppm Exposure time: 7 h Test atmosphere: vapour
Acute dermal toxicity	: LD50 (Rat): > 2.000 mg/kg Method: OECD Test Guideline 402 Assessment: No adverse effect has been observed in acute dermal toxicity tests.

Components:

Methacrylic acid

Acute oral toxicity	: LD50 (Mouse): 1.250 mg/kg LD50 (Rat, male): 1.320 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	: LC50 (Rat): 7,1 mg/l Exposure time: 4 h Test atmosphere: vapour Method: OECD Test Guideline 403 Assessment: The component/mixture is classified as acute inhalation toxicity, category 4.
Acute dermal toxicity	: LD50 (Rabbit): 500 - 1.000 mg/kg

Components:



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Hydroquinone

Acute oral toxicity : LD50 (Rat, female): 367 mg/kg
Method: OECD Test Guideline 401
GLP: yes

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg
Method: OECD Test Guideline 402
GLP: yes
Assessment: No adverse effect has been observed in acute dermal toxicity tests.

Skin corrosion/irritation

Causes skin irritation.

Product:

Remarks: May cause skin irritation and/or dermatitis.

Result: Repeated exposure may cause skin dryness or cracking.

Components:

Styrene

Species: Rabbit
Result: Irritating to skin.

Species: human skin
Result: No skin irritation

Methacrylic acid

Method: OECD Test Guideline 404
Result: Corrosive after 3 minutes or less of exposure

Hydroquinone

Result: No skin irritation

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Remarks: Vapours may cause irritation to the eyes, respiratory system and the skin., Causes serious eye irritation.

Components:

Styrene

Result: Irritating to eyes.
Remarks: Vapour during processing may be irritating to the respiratory tract and to the eyes.

Methacrylic acid



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Result: **Corrosive**

Hydroquinone

Result: **Corrosive**

Respiratory or skin sensitisation

Skin sensitisation: Not classified based on available information.

Respiratory sensitisation: Not classified based on available information.

Components:

Styrene

Exposure routes: **Skin contact**

Species: **Guinea pig**

Assessment: **Does not cause skin sensitisation.**

Exposure routes: **inhalation (vapour)**

Species: **Humans**

Assessment: **Does not cause respiratory sensitisation.**

Methacrylic acid

Test Type: **Buehler Test**

Species: **Guinea pig**

Assessment: **Did not cause sensitisation on laboratory animals.**

Method: **OECD Test Guideline 406**

Hydroquinone

Assessment: **The product is a skin sensitiser, sub-category 1B.**

Germ cell mutagenicity

Not classified based on available information.

Components:

Methacrylic acid

Genotoxicity in vitro

: Test Type: **Ames test**

Method: **OECD Test Guideline 471**

Result: **negative**

: Test Type: **Chromosome aberration test in vitro**

Method: **OECD Test Guideline 487**

Result: **negative**

Genotoxicity in vivo

: Test Type: **Mammalian bone marrow sister chromatid exchange**

Test species: **Rat (male)**

Cell type: **Bone marrow**

Method: **OECD Test Guideline 475**

Result: **negative**



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Test Type: **chromosome aberration assay**
 Test species: **Mouse (male)**
 Method: **OECD Test Guideline 478**
 Result: **negative**

Test Type: **chromosome aberration assay**
 Test species: **Mouse (male)**
 Cell type: **peripheral blood cells**
 Method: **OECD Test Guideline 474**
 Result: **negative**

Hydroquinone

Genotoxicity in vitro : Test Type: **In vitro mammalian cell gene mutation test**
 Test species: **mouse lymphoma cells**
 Metabolic activation: **with and without metabolic activation**
 Method: **OECD Test Guideline 476**
 Result: **positive**

Genotoxicity in vivo : Test Type: **chromosome aberration assay**
 Test species: **Mouse**
 Cell type: **Bone marrow**
 Method: **OECD Test Guideline 474**
 Result: **positive**

Germ cell mutagenicity-
Assessment : **Positive result(s) from in vivo somatic cell mutagenicity tests supported by positive results from in vitro mutagenicity assays or chemical structure activity relationship to known germ cell mutagens**

Carcinogenicity

Not classified based on available information.

Components:

Hydroquinone

Carcinogenicity -
Assessment : **Limited evidence of carcinogenicity in animal studies**

Reproductive toxicity

Suspected of damaging the unborn child.

Components:

Styrene

Reproductive toxicity -
Assessment : **Some evidence of adverse effects on development, based on animal experiments.**

Methacrylic acid



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Effects on fertility : Species: **Rat**
Application Route: **Oral**
Fertility: **No observed adverse effect level (Mating/Fertility):
400 mg/kg body weight**
Symptoms: **No effects on fertility No effects on reproduction
parameters**
Method: **OECD Test Guideline 416**

Effects on foetal development : Species: **Rabbit**
Application Route: **Oral**
Developmental Toxicity: **No observed adverse effect level F1:
450 mg/kg body weight**
Symptoms: **No specific developmental abnormalities**
Method: **OECD Test Guideline 414**

STOT - single exposure

May cause respiratory irritation.

Components:

Styrene

Assessment: **May cause respiratory irritation.**

Methacrylic acid

Exposure routes: **Inhalation**

Target Organs: **Respiratory Tract**

Assessment: **May cause respiratory irritation.**

STOT - repeated exposure

Causes damage to organs (Auditory organs) through prolonged or repeated exposure if inhaled.

Components:

Styrene

Exposure routes: **inhalation (vapour)**

Target Organs: **Auditory system**

Assessment: **Causes damage to organs through prolonged or repeated exposure.**

Repeated dose toxicity

Components:

Styrene

Species: **Human**

85 mg/m³

Application Route: **inhalation (vapour)**

Species: **Human**

615 mg/kg

Application Route: **Skin contact**



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Methacrylic acid

Species: **Rat, male and female**

NOAEC: **352 mg/m³**

Application Route: **inhalation (dust/mist/fume)**

Exposure time: **90 Days**

Group: **yes**

Symptoms: **Local irritation, Reduced body weight**

Aspiration toxicity

Not classified based on available information.

Components:

Styrene

May be fatal if swallowed and enters airways.

Further information

Product:

Remarks: Solvents may degrease the skin.

SECTION 12: Ecological information

12.1 Toxicity

Components:

Styrene

Toxicity to fish : **LC50 (Pimephales promelas (fathead minnow)): 4,02 mg/l**
Exposure time: **96 h**

Toxicity to daphnia and other aquatic invertebrates : **EC50 (Daphnia magna (Water flea)): 4,7 mg/l**
Exposure time: **48 h**

Toxicity to algae : **ErC50 (Pseudokirchneriella subcapitata (green algae)): 4,9 mg/l**
Exposure time: **72 h**

EC10 (Pseudokirchneriella subcapitata (green algae)): 0,28 mg/l
Exposure time: **96 h**

Toxicity to bacteria : **EC50 (activated sludge): ca. 500 mg/l**
Exposure time: **0,5 h**

Toxicity to daphnia and other : **NOEC: 1,01 mg/l**

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aquatic invertebrates
 (Chronic toxicity) Exposure time: 21 d
 Species: *Daphnia magna* (Water flea)

Toxicity to soil dwelling
 organisms : NOEC: 34 mg/kg
 Exposure time: 14 d
 Species: *Eisenia fetida* (earthworms)
 Method: OECD Test Guideline 207

Methacrylic acid

Toxicity to fish : LC50 (*Oncorhynchus mykiss* (rainbow trout)): 85 mg/l
 Exposure time: 96 h
 Test Type: flow-through test

Toxicity to daphnia and other
 aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): > 130 mg/l
 Exposure time: 48 h
 Test Type: flow-through test

Toxicity to algae : EC50 (*Pseudokirchneriella subcapitata* (green algae)): 20 mg/l
 End point: Biomass
 Exposure time: 72 h
 Test Type: flow-through test
 Method: OECD Test Guideline 201

Toxicity to fish (Chronic
 toxicity) : NOEC: 10 mg/l
 Exposure time: 35 d
 Species: *Danio rerio* (zebra fish)
 Test Type: flow-through test
 Method: OECD Test Guideline 210

Toxicity to daphnia and other
 aquatic invertebrates
 (Chronic toxicity) : NOEC: 53 mg/l
 Exposure time: 21 d
 Species: *Daphnia magna* (Water flea)
 Test Type: flow-through test
 Method: OECD Test Guideline 211

Hydroquinone

Toxicity to fish : LC50 (*Oncorhynchus mykiss* (rainbow trout)): 0,638 mg/l
 Exposure time: 96 h
 Test Type: flow-through test

Toxicity to daphnia and other
 aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 0,134 mg/l
 Exposure time: 48 h
 Test Type: static test
 Method: OECD Test Guideline 202



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Toxicity to algae	: EC50 (Pseudokirchneriella subcapitata (microalgae)): 0,053 mg/l End point: Growth inhibition Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 NOEC (Pseudokirchneriella subcapitata (microalgae)): 0,0015 mg/l End point: Growth inhibition Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201
M-Factor (Short-term (acute) aquatic hazard)	: 10
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC: 0,0029 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: semi-static test Method: OECD Test Guideline 211

12.2 Persistence and degradability

Components:

Styrene

Biodegradability	: Result: Readily biodegradable. Biodegradation: > 60 % Exposure time: 10 d
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Methacrylic acid

Biodegradability	: Inoculum: activated sludge Result: Readily biodegradable. Biodegradation: 87 % Exposure time: 28 d
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Hydroquinone

Biodegradability	: Result: Readily biodegradable. Biodegradation: 70 % Exposure time: 14 d Method: OECD Test Guideline 301C
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12.3 Bioaccumulative potential

Components:

Styrene

Bioaccumulation : Bioconcentration factor (BCF): **< 100**

Partition coefficient: n-octanol/water : log Pow: **2,96 (25 °C)**

Methacrylic acid

Bioaccumulation : Bioconcentration factor (BCF): **1,0**
Remarks: **Bioaccumulation is unlikely.**

Partition coefficient: n-octanol/water : log Pow: **0,93**

Hydroquinone

Partition coefficient: n-octanol/water : log Pow: **0,59**

12.4 Mobility in soil

Components:

Styrene

Distribution among environmental compartments : Koc: **352**

12.5 Results of PBT and vPvB assessment

Components:

Styrene

Assessment : **This substance is not considered to be persistent, bioaccumulating and toxic (PBT).. This substance is not considered to be very persistent and very bioaccumulating (vPvB)..**

12.6 Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Toxic to aquatic life.



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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.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.

SECTION 14: Transport information

SECTION 14: Transport information

14.1 UN number

ADN: UN1866

ADR: UN1866

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: UN1866

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: UN1866

INTERNATIONAL MARITIME DANGEROUS GOODS: UN1866

RID: UN1866

14.2 UN proper shipping name

ADN: RESIN SOLUTION

ADR: RESIN SOLUTION

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: Resin solution

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: Resin solution

INTERNATIONAL MARITIME DANGEROUS GOODS: RESIN SOLUTION

RID: RESIN SOLUTION

14.3 Transport hazard class(es)

ADN: 3



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ADR: 3
INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: 3
INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: 3
INTERNATIONAL MARITIME DANGEROUS GOODS: 3
RID: 3

14.4 Packing group

ADN: III
ADR: III
INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: III
INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: III
INTERNATIONAL MARITIME DANGEROUS GOODS: III
RID: III

14.5 Environmental hazards

ADN: Not applicable
ADR: Not applicable
INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: Not applicable
INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: Not applicable
INTERNATIONAL MARITIME DANGEROUS GOODS: Not applicable
RID: Not applicable

14.6 Special precautions for user

Not applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Ship Type: Not applicable
 Hazard code(s): Not applicable
 Pollutant Category: Not applicable

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15: Regulatory information

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

Regulation (EC) No 1005/2009 on substances that : Not applicable
deplete the ozone layer



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Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable

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

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

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

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

		Quantity 1	Quantity 2
P5c	FLAMMABLE LIQUIDS	5.000 t	50.000 t

Other regulations : Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

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 : This product contains one or several components that are not on the Canadian DSL and have annual quantity limits.

AICS 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



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TCSI On the inventory, or in compliance with the inventory

TSCA On TSCA Inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

15.2 Chemical safety assessment

No data available

SECTION 16: Other information

Further information

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Classification procedure:

H226	Flammable liquid and vapour.	Based on product data or assessment
H315	Causes skin irritation.	Calculation method
H319	Causes serious eye irritation.	Calculation method
H361d	Suspected of damaging the unborn child.	Calculation method
H335	May cause respiratory irritation.	Calculation method
H372	Causes damage to organs through prolonged or repeated exposure if inhaled.	Calculation method
H412	Harmful to aquatic life with long lasting effects.	Calculation method

Full text of H-Statements

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.



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H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H351	Suspected of causing cancer.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Other information : The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Ashland's Environmental Health and Safety Department (+31 10 497 5000).

Sources of key data used to compile the Safety Data Sheet
 Ashland internal data including own and sponsored test reports
 The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

List of abbreviations and acronyms that could be, but not necessarily are, used in this safety data sheet :

ACGIH : American Conference of Industrial Hygienists
 BEI : Biological Exposure Index
 CAS : Chemical Abstracts Service (Division of the American Chemical Society).
 CMR : Carcinogenic, Mutagenic or Toxic for Reproduction
 FG : Food grade
 GHS : Globally Harmonized System of Classification and Labeling of Chemicals.
 H-statement : Hazard Statement
 IATA : International Air Transport Association.
 IATA-DGR : Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
 ICAO : International Civil Aviation Organization



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ICAO-TI (ICAO) : Technical Instructions by the “International Civil Aviation Organization”

IMDG : International Maritime Code for Dangerous Goods

ISO : International Organization for Standardization

logPow : octanol-water partition coefficient

LCxx : Lethal Concentration, for xx percent of test population

LDxx : Lethal Dose, for xx percent of test population.

ICxx : Inhibitory Concentration for xx of a substance

Ecxx : Effective Concentration of xx

N.O.S.: Not Otherwise Specified

OECD : Organization for Economic Co-operation and Development

OEL : Occupational Exposure Limit

P-Statement : Precautionary Statement

PBT : Persistent , Bioaccumulative and Toxic

PPE : Personal Protective Equipment

STEL : Short-term exposure limit

STOT : Specific Target Organ Toxicity

TLV : Threshold Limit Value

TWA : Time-weighted average

vPvB : Very Persistent and Very Bioaccumulative

WEL : Workplace Exposure Level

ABM : Water Hazard Class for the Netherlands

ADR : Agreement concerning the International Carriage of Dangerous Goods by Road.

ADNR: Regulation for the Carriage of Dangerous Substances on the Rhine

CLP : Classification, Labelling and Packaging

CSA : Chemical Safety Assessment

CSR : Chemical Safety Report

DNEL : Derived No Effect Level.

EINECS : European Inventory of Existing Commercial Chemical Substances.

ELINCS : European List of Notified Chemical Substances

GV: Exposure limits (DK)

PEC : Predicted Effect Concentration

PEL : Permissible Exposure Limits

PNEC : Predicted No Effect Concentration

R-phrase : Risk phrase

REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals

RID : Regulation Concerning the International Transport of Dangerous Goods by Rail

S-phrase: Safety phrase

WGK : German Water Hazard Class