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# **ARALDITE® 2051 RESIN**

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

#### 1.1 Product identifier

Trade name : ARALDITE® 2051 RESIN

Unique Formula Identifier

(UFI)

: C2R5-V02E-T00Q-RHF4

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

Use of the : Adhesives

Substance/Mixture

## 1.3 Details of the supplier of the safety data sheet

Company : Huntsman Advanced Materials (Europe)BVBA

Address : Everslaan 45

3078 Everberg

Belgium

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

E-mail address of person

responsible for the SDS

: Global\_Product\_EHS\_AdMat@huntsman.com

## 1.4 Emergency telephone number

Emergency telephone number : Centres Antipoison et de Toxicovigilance:

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

ANGERS: 02 41 48 21 21

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

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## **SECTION 2: Hazards identification**

#### 2.1 Classification of the substance or mixture

## Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 2 H225: Highly flammable liquid and vapour.

Skin corrosion, Sub-category 1B H314: Causes severe skin burns and eye damage.

Serious eye damage, Category 1 H318: Causes serious eye damage.

Skin sensitisation, Category 1 H317: May cause an allergic skin reaction.

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

system

H335: May cause respiratory irritation.

Chronic aquatic toxicity, 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 : H225 Highly flammable liquid and vapour.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H412 Harmful to aquatic life with long lasting

effects.

Precautionary statements : **Prevention:** 

P210 Keep away from heat, hot surfaces, sparks,

open flames and other ignition sources. No

smokina.

P280 Wear protective gloves/ protective clothing/

eye protection/ face protection/ hearing

protection.

Response:

P303 + P361 + P353 IF ON SKIN (or hair): Take off

immediately all contaminated clothing.

Rinse skin with water.

P304 + P340 + P310 IF INHALED: Remove person to fresh

air and keep comfortable for breathing.

Immediately call a POISON CENTER/

doctor.

with water for several minutes. Remove

according to Regulation (EC) No. 1907/2006



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contact lenses, if present and easy to do. Continue rinsing. Immediately call a

POISON CENTER/ doctor.

P370 + P378 In case of fire: Use dry sand, dry chemical

or alcohol-resistant foam to extinguish.

Hazardous components which must be listed on the label: methyl methacrylate

methacrylic acid

2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, phosphate

#### 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.

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	Concent ration (% w/w)
methyl methacrylate	80-62-6 201-297-1 607-035-00-6 01-2119452498-28	Flam. Liq. 2; H225 Skin Irrit. 2; H315 Skin Sens. 1; H317 STOT SE 3; H335 (Respiratory system)	>= 50 - < 70
methacrylic acid	79-41-4 201-204-4 607-088-00-5 01-2119463884-26	Acute Tox. 4; H302 Acute Tox. 4; H332 Acute Tox. 3; H311 Skin Corr. 1A; H314 Eye Dam. 1; H318 STOT SE 3; H335 (Respiratory system)  specific concentration limit STOT SE 3; H335 >= 1 %	>= 5 - < 10

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2,6-Di-tert-butyl-p-cresol	128-37-0 204-881-4 01-2119555270-46	Aquatic Acute 1; H400 Aquatic Chronic 1; H410  M-Factor (Chronic aquatic toxicity): 1	>= 1 - < 2,5
2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, phosphate	52628-03-2 258-053-2 01-2119980575-25	Skin Corr. 1A; H314 Eye Dam. 1; H318 Skin Sens. 1B; H317	>= 1 - <
alpha,alpha-dimethylbenzyl hydroperoxide	80-15-9 201-254-7 617-002-00-8 01-2119475796-19	Org. Perox. E; H242 Acute Tox. 4; H302 Acute Tox. 3; H331 Acute Tox. 4; H312 Skin Corr. 1B; H314 STOT RE 2; H373 Aquatic Chronic 2; H411	>= 0,25 - < 1

For explanation of abbreviations see section 16.

## **SECTION 4: First aid measures**

## 4.1 Description of first aid measures

General advice : Move out of dangerous area.

Consult a physician.

Show this safety data sheet to the doctor in attendance.

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.

It may be dangerous to the person providing aid to give

according to Regulation (EC) No. 1907/2006



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mouth-to-mouth resuscitation.

If inhaled : If inhaled, remove to fresh air.

Get medical attention if symptoms occur.

In case of skin contact : Immediate medical treatment is necessary as untreated

wounds from corrosion of the skin heal slowly and with

difficulty.

If on skin, rinse well with water. If on clothes, remove clothes.

In case of eye contact : Small amounts splashed into eyes can cause irreversible

tissue damage and blindness.

In the case of contact with eyes, rinse immediately with plenty

of water and seek medical advice.

Continue rinsing eyes during transport to hospital.

Remove contact lenses.

Keep eye wide open while rinsing.

If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.

Do NOT induce vomiting.

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 (CO2)

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

Carbon oxides

Sulphur oxides Hydrogen chloride

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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. For safety reasons in case of fire, cans should be stored

separately in closed containments.

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 : Use personal protective equipment.

Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas.

Refer to protective measures listed in sections 7 and 8. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

#### 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 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.

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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.

Take precautionary measures against static discharges. Open drum carefully as content may be under pressure. To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national

regulations.

Advice on protection against

fire and explosion

Do not spray on a naked flame or any incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

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

No smoking. Keep container tightly closed in a dry and wellventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Keep in properly labelled containers.

Advice on common storage

For incompatible materials please refer to Section 10 of this

SDS.

Further information on

storage stability

Stable under normal conditions.

## 7.3 Specific end use(s)

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
methyl	80-62-6	TWA	50 ppm	2009/161/EU
methacrylate				
Further information	Indicative			

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		STEL	100 ppm	2009/161/EU
Further information	Indicative			
		VME	50 ppm	FR VLE
			205 mg/m3	
Further information	Regulatory bir	nding exposure limits	3	
		VLCT (VLE)	100 ppm	FR VLE
			410 mg/m3	
Further information	Regulatory binding exposure limits			
methacrylic acid	79-41-4	VME	20 ppm	FR VLE
-			70 mg/m3	
Further information	Indicative exposure limits			
2,6-di-tert-butyl-p-	128-37-0	VME	10 mg/m3	FR VLE
cresol			-	
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
2,6-di-tert-butyl-p- cresol	Workers	Inhalation	Long-term systemic effects	3,5 mg/m3
	Workers	Dermal	Long-term systemic effects	0,5 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	0,86 mg/m3
	Consumers	Dermal	Long-term systemic effects	0,25 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	0,25 mg/kg bw/day
2-Propenoic acid, 2- methyl-, 2- hydroxyethyl ester, phosphate	Workers	Inhalation	Long-term systemic effects	7,04 mg/m3
	Workers	Dermal	Long-term systemic effects	1 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	1,74 mg/m3
	Consumers	Dermal	Long-term systemic effects	0,5 mg/kg bw/day
methacrylic acid	Workers	Inhalation	Long-term systemic effects	29,6 mg/m3
	Workers	Inhalation	Long-term local effects	88 mg/m3
	Workers	Dermal	Long-term systemic effects	4,25 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	6,3 mg/m3
	Consumers	Inhalation	Long-term local effects	6,55 mg/m3
	Consumers	Dermal	Long-term systemic effects	2,55 mg/kg

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				bw/day
Silica, amorphous, fumed, crystfree	Workers	Inhalation	Long-term systemic effects	4 mg/m3

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

Substance name		Environmental Compartment	Value
2,6-di-tert-butyl-p-cresol		Fresh water	0,199 μg/l
Remarks:	Assessme	ent Factors	1
	1	Marine water	0,02 μg/l
	Assessme	ent Factors	•
		Sewage treatment plant	0,17 mg/l
	Assessme	ent Factors	•
		Fresh water sediment	0,0996 mg/kg dry weight (d.w.)
	Equilibriur	n method	•
		Marine sediment	0,00996 mg/kg dry weight (d.w.)
	Equilibriur	n method	
		Soil	0,04769 mg/kg dry weight (d.w.)
	Equilibriur	n method	•
		Oral	8,33 mg/kg
2-Propenoic acid, 2-met hydroxyethyl ester, phos		Fresh water	0,068 mg/l
	Assessme	ent Factors	•
		Marine water	0,007 mg/l
	Assessme	ent Factors	
		Sewage treatment plant	0,546 mg/l
	Assessme	ent Factors	
		Fresh water sediment	0,481 mg/kg dry weight (d.w.)
	Equilibriur	n method	
		Marine sediment	0,048 mg/kg dry weight (d.w.)
Equilibriu		n method	
		Soil	0,056 mg/kg dry weight (d.w.)
	Equilibriur	n method	
methacrylic acid	•	Fresh water	0,82 mg/l

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Assessme	Assessment Factors			
	Marine water	0,82 mg/l		
Assessme	Assessment Factors			
	Freshwater - intermittent	0,82 mg/l		
Assessme	Assessment Factors			
·	Sewage treatment plant	10 mg/l		
Assessme	Assessment Factors			
	Soil	1,2 mg/kg		
Equilibriun	n method			

#### 8.2 Exposure controls

## Personal protective equipment

Eye protection : Eye wash bottle with pure water

Tightly fitting safety goggles

Wear face-shield and protective suit for abnormal processing

problems.

Hand protection

Remarks : 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

concentration of the dangerous substance at the work place.

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

approved filter.

Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines

Filter type : Organic vapour type (A)

## **SECTION 9: Physical and chemical properties**

## 9.1 Information on basic physical and chemical properties

Physical state : paste

Colour : off-white

Odour : like methacrylic acid

Odour Threshold : No data is available on the product itself.

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pH : substance/mixture is non-soluble (in water)

Melting point/freezing point : No data is available on the product itself.

Boiling point : No data is available on the product itself.

Flash point : 10 °C

Method: estimated

Evaporation rate : No data is available on the product itself.

Flammability (solid, gas) : No data is available on the product itself.

Burning rate : No data is available on the product itself.

Upper explosion limit / Upper

flammability limit

: No data is available on the product itself.

Lower explosion limit / Lower

flammability limit

: No data is available on the product itself.

Vapour pressure : No data is available on the product itself.

Relative vapour density : No data is available on the product itself.

Relative density : No data is available on the product itself.

Density : 1,02 - 1,05 g/cm3

Solubility(ies)

Water solubility : insoluble

Solubility in other solvents : No data is available on the product itself.

Partition coefficient: n-

octanol/water

: No data is available on the product itself.

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

Decomposition temperature : No data is available on the product itself.

Viscosity

Viscosity, dynamic : 40 - 70 Pas

Explosive properties : No data is available on the product itself.

Oxidizing properties : No data is available on the product itself.

#### 9.2 Other information

No data available

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## **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 : Vapours may form explosive mixture with air.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : None known.

# 10.6 Hazardous decomposition products

No hazardous decomposition products are known. : carbon dioxide Hazardous decomposition products carbon monoxide

# **SECTION 11: Toxicological information**

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

## **Acute toxicity**

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

Method: Calculation method

Acute inhalation toxicity -

: Acute toxicity estimate : > 20 mg/l

Product

Exposure time: 4 h Test atmosphere: vapour Method: Calculation method

Acute dermal toxicity -

: Acute toxicity estimate : > 2 000 mg/kg

Product

Method: Calculation method

Acute toxicity (other routes of : No data available

administration)

# Skin corrosion/irritation

#### **Product:**

Method: OECD Test Guideline 431

Result: Causes burns.

GLP: yes

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#### Serious eye damage/eye irritation

#### **Components:**

methacrylic acid: Species: Rabbit

Assessment: Risk of serious damage to eyes.

Method: Draize Test

Result: Irreversible effects on the eye

GLP: no

2,6-di-tert-butyl-p-cresol:

Species: Rabbit

Assessment: No eye irritation Method: OECD Test Guideline 405

Result: No eye irritation

2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, phosphate:

Result: Corrosive

alpha, alpha-dimethylbenzyl hydroperoxide: Assessment: Risk of serious damage to eyes.

Result: Irreversible effects on the eye

#### Respiratory or skin sensitisation

#### Components:

methyl methacrylate: Exposure routes: Skin Species: Mouse

Assessment: May cause sensitisation by skin contact.

Method: OECD Test Guideline 429

Result: May cause sensitisation by skin contact.

methacrylic acid: Test Type: Buehler Test Exposure routes: Skin Species: Guinea pig

Assessment: Did not cause sensitisation on laboratory animals.

Method: OECD Test Guideline 406

Result: Did not cause sensitisation on laboratory animals.

2,6-di-tert-butyl-p-cresol: Exposure routes: Skin Species: Humans

Result: Does not cause skin sensitisation.

2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, phosphate:

Test Type: Local lymph node assay (LLNA)

Species: Mouse

Method: OECD Test Guideline 429

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

GLP: yes

Assessment: No data available

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## Germ cell mutagenicity

**Components:** 

methyl methacrylate:

Genotoxicity in vitro : Test Type: Microbial mutagenesis assay (Ames test)

Test system: Salmonella typhimurium Method: OECD Test Guideline 471

Result: negative

methacrylic acid:

Genotoxicity in vitro : Test Type: reverse mutation assay

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

2,6-di-tert-butyl-p-cresol:

Genotoxicity in vitro : Test Type: reverse mutation assay

Metabolic activation: with and without metabolic activation

Result: negative

: Test Type: Chromosome aberration test in vitro

Metabolic activation: with and without metabolic activation

Result: negative

2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, phosphate:

Genotoxicity in vitro

: Test Type: Ames test

Test system: Salmonella tryphimurium and E. coli

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

GLP: yes

: Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

GLP: yes

: Test Type: Chromosome aberration test in vitro

Test system: Human lymphocytes

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

GLP: yes

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## **Components:**

methacrylic acid:

Genotoxicity in vivo : Test Type: in vivo assay

Test species: Rat (male) Cell type: Somatic

Application Route: Inhalation

Exposure time: 2 h

Dose: 0.4, 1.6, 2.8 and 4 mg/L Method: OECD Test Guideline 475

Result: Not classified due to inconclusive data.

GLP: no

Test Type: dominant lethal test Test species: Mouse (male) Application Route: Inhalation

Exposure time: 6 h

Dose: 0.405, 4.05 and 36.45 mg/L Method: OECD Test Guideline 478

Result: negative

GLP: no

2,6-di-tert-butyl-p-cresol:

Genotoxicity in vivo : Application Route: Intraperitoneal injection

Dose: 75 mg/kg Result: negative

Application Route: Oral Exposure time: 9 Months Dose: ca 750 mg/kg Result: negative

Germ cell mutagenicity-

Assessment

: No data available

## Carcinogenicity

# **Components:**

methyl methacrylate:

Species: Rat, male and female

Application Route: Oral Exposure time: 2 Years Dose: 6, 60, 2000 ppm

Frequency of Treatment: once daily

No observed adverse effect level: 90,3 mg/kg bw/day

Result: negative

methacrylic acid:

Species: Rat, male and female Application Route: inhalation (vapour)

Exposure time: 102 weeks

Frequency of Treatment: 5 days/week

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No observed adverse effect level: >= 2,05 mg/kg body weight

Method: OECD Test Guideline 451

Species: Mouse, male and female Application Route: inhalation (vapour)

Exposure time: 102 weeks Dose: ca. 2.05 and 4.1 mg/L

Frequency of Treatment: 5 days/week

Lowest observed adverse effect level: ca. 2,05 mg/l

Method: OECD Test Guideline 451

2,6-di-tert-butyl-p-cresol: Species: Rat, male and female

Application Route: Oral

Result: negative

Carcinogenicity -

Assessment

: No data available

## Reproductive toxicity

#### **Components:**

methacrylic acid:

Effects on fertility : Test Type: Two-generation study

Species: Rat, male and female Application Route: Oral

Dose: 0, 50, 150, 450 mg/kg/day

General Toxicity - Parent: No observed adverse effect level:

50 mg/kg body weight

Fertility: No observed adverse effect level F1: 400 mg/kg body

weight

Symptoms: Reduced body weight Method: OECD Test Guideline 416

GLP: yes

2,6-di-tert-butyl-p-cresol:

Test Type: Two-generation study Species: Rat, male and female

Application Route: Oral

Dose: 25/100/500 mg/kg bw/day

General Toxicity - Parent: No observed adverse effect level:

100 mg/kg body weight

General Toxicity F1: No observed adverse effect level: 25

mg/kg body weight Result: negative

#### Components:

methyl methacrylate:

Effects on foetal : Species: Rat

development Application Route: Inhalation Dose: 99, 304, 1178 ppm

Teratogenicity: No observed adverse effect concentration F1:

8 300 mg/m<sup>3</sup>

Embryo-foetal toxicity: No observed adverse effect

according to Regulation (EC) No. 1907/2006



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concentration F1: 8 300 mg/m³ Method: OECD Test Guideline 414 Result: No teratogenic effects

methacrylic acid:

Test Type: Pre-natal Species: Rat, female

Application Route: Inhalation
Dose: 0, 50, 100, 200 or 300 ppm
Duration of Single Treatment: 14 d
Frequency of Treatment: 7 days/week

General Toxicity Maternal: No observed adverse effect level:

200 ppm

Developmental Toxicity: No observed adverse effect level: >=

300 ppm

Embryo-foetal toxicity: No observed adverse effect

concentration F1: 300 ppm Method: OECD Test Guideline 414

Result: No effects on fertility and early embryonic

development were detected.

Test Type: Pre-natal

Species: Rabbit, male and female

Application Route: Oral

Dose: 50, 150, 450 milligram per kilogram Duration of Single Treatment: 23 d Frequency of Treatment: 7 days/week

General Toxicity Maternal: No observed adverse effect level:

50 mg/kg body weight

Developmental Toxicity: No observed adverse effect level F1:

450 mg/kg body weight

Result: No effects on fertility and early embryonic

development were detected.

2,6-di-tert-butyl-p-cresol:

Test Type: Pre-natal Species: Mouse, female Application Route: Oral

Duration of Single Treatment: 7 d

General Toxicity Maternal: No observed adverse effect level:

240 mg/kg body weight

Developmental Toxicity: No observed adverse effect level:

800 mg/kg body weight Target Organs: spleen, Kidney

2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, phosphate:

Test Type: Pre-natal Species: Rat, females Application Route: Oral

Dose: 100/300/1000 mg/kg bw/day

General Toxicity Maternal: No observed adverse effect level:

300 mg/kg body weight

Developmental Toxicity: No-observed-effect level: 1 000

mg/kg body weight

Method: OECD Test Guideline 414

according to Regulation (EC) No. 1907/2006



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GLP: yes

Reproductive toxicity -

Assessment

: No data available

## STOT - single exposure

## Components:

methyl methacrylate: Exposure routes: Inhalation Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

methacrylic acid:

Exposure routes: Inhalation
Target Organs: Respiratory Tract

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

exposure, category 3 with respiratory tract irritation.

## STOT - repeated exposure

#### **Components:**

alpha, alpha-dimethylbenzyl hydroperoxide:

Exposure routes: Inhalation Target Organs: Lungs

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

exposure, category 2.

## Repeated dose toxicity

## **Components:**

methyl methacrylate:

Species: Rat, male and female

NOAEL: 124,1 mg/kg

Application Route: oral (drinking water)

Exposure time: 2 years Number of exposures: daily

Dose: 6, 60, 2000 ppm

methacrylic acid:

Species: Rat, male and female

NOEC: 352 - 1232

Application Route: inhalation (vapour)

Test atmosphere: vapour

Exposure time: 90 dNumber of exposures: 6 h

Dose: 70/352/1232 mg/m3

Subsequent observation period: 5 days/week

Method: OECD Test Guideline 413

GLP: yes

2,6-di-tert-butyl-p-cresol: Species: Pig, male and female

NOAEL: >= 61 mg/kg

according to Regulation (EC) No. 1907/2006



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Application Route: oral (feed)

Exposure time: daily Method: Chronic toxicity

2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, phosphate:

Species: Rat, male and female

NOEL: 100 mg/kg

Application Route: oral (gavage)

Exposure time: 28 d Number of exposures: 7 days/week

Dose: 0, 100, 300, or 1000 MKD Method: OECD Test Guideline 407

GLP: yes

Target Organs: Kidney, Stomach

Repeated dose toxicity -

: No data available

Assessment

## **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.

## **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

according to Regulation (EC) No. 1907/2006



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## **Neurological effects**

No data available

#### **Further information**

Product:

Remarks: Solvents may degrease the skin.

## **SECTION 12: Ecological information**

## 12.1 Toxicity

## **Components:**

methyl methacrylate:

Toxicity to fish : LC50 : 191 mg/l

Exposure time: 96 h

LC50 (Oncorhynchus mykiss (rainbow trout)): > 79 mg/l

Exposure time: 96 h

Test Type: flow-through test

Method: Fish Early-life Stage Toxicity Test

Toxicity to daphnia and other

aquatic invertebrates

: EC50 : 69 mg/l Exposure time: 48 h

Toxicity to algae/aquatic

plants

: EC50 : > 110 mg/l

Exposure time: 72 h

Toxicity to daphnia and other

aquatic invertebrates

(Chronic toxicity)

: NOEC: 37 mg/l Exposure time: 21 d

Species: Daphnia magna (Water flea)

Test Type: flow-through test Method: OECD Test Guideline 211

methacrylic acid:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 85 mg/l

End point: mortality Exposure time: 96 h

Test Type: flow-through test
Test substance: Fresh water
Method: Fish Acute Toxicity Test

GLP: yes

Remarks: Toxic to aquatic organisms.

Toxicity to daphnia and other

aquatic invertebrates

: EC50 (Daphnia magna (Water flea)): > 130 mg/l

End point: Immobilization Exposure time: 48 h Test Type: flow-through test

Test Type: flow-through test Analytical monitoring: yes Test substance: Fresh water

Method: Aquatic Invertebrate Acute Toxicity Test, Freshwater

Daphnids

according to Regulation (EC) No. 1907/2006



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GLP: yes

Toxicity to algae/aquatic

plants

: ErC50 (Selenastrum capricornutum (green algae)): 45 mg/l

Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 201

GLP: yes

NOEC (Selenastrum capricornutum (green algae)): 8,2 mg/l

Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 201

GLP: yes

Toxicity to microorganisms : EC50 (Pseudomonas putida): 270 mg/l

Exposure time: 16,5 h
Test Type: static test
Analytical monitoring: no
Test substance: Fresh water
Method: DIN 38 412 Part 8

GLP: yes

Toxicity to fish (Chronic

toxicity)

: NOEC: 10 mg/l Exposure time: 35 d

Species: Brachydanio rerio (zebrafish)

Test Type: flow-through test Analytical monitoring: yes Test substance: Fresh water Method: OECD Test Guideline 210

GLP: yes

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 Analytical monitoring: yes Test substance: Fresh water Method: OECD Test Guideline 211

GLP: yes

2,6-di-tert-butyl-p-cresol:

Toxicity to fish : LC50 (Fish): 0,199 mg/l

Exposure time: 96 h

Test substance: Fresh water

Method: QSAR

Toxicity to daphnia and other

aquatic invertebrates

: EC50 (Daphnia magna (Water flea)): 0,48 mg/l

End point: Immobilization Exposure time: 48 h Test Type: static test

Test substance: Fresh water

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Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

: EC50 (Pseudokirchneriella subcapitata (green algae)): > 0,24

mg/l

Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 0,24

mg/l

Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

Toxicity to microorganisms : ErC50 (activated sludge): 1,7 mg/l

Exposure time: 24 h Test Type: static test

Toxicity to fish (Chronic

toxicity)

: NOEC: 0,053 mg/l Exposure time: 30 d

Species: Oryzias latipes (Orange-red killifish)

Test substance: Fresh water Method: OECD Test Guideline 210

NOEC: >= 23,8 mg/l Exposure time: 70 d Species: Fish

Test substance: Fresh water

Toxicity to daphnia and other

aquatic invertebrates

(Chronic toxicity)

: EC50: 0,096 mg/l Exposure time: 21 d

Species: Daphnia magna (Water flea)

Test substance: Fresh water Method: OECD Test Guideline 211

NOEC: 0,069 mg/l Exposure time: 21 d

Species: Daphnia magna (Water flea)

Test substance: Fresh water Method: OECD Test Guideline 211

M-Factor (Chronic aquatic : 1

toxicity)

2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, phosphate:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 112 mg/l

Exposure time: 96 h Test Type: static test Analytical monitoring: yes

Method: OECD Test Guideline 203

GLP: yes

Toxicity to daphnia and other

aquatic invertebrates

: LC50 (Daphnia magna (Water flea)): 68 mg/l

Exposure time: 48 h

according to Regulation (EC) No. 1907/2006



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Test Type: static test Analytical monitoring: yes

Method: OECD Test Guideline 202

GLP: yes

Toxicity to algae/aquatic

plants

: EC50 (Pseudokirchneriella subcapitata (algae)): > 120 mg/l

Exposure time: 72 h Test Type: static test Analytical monitoring: yes

Method: OECD Test Guideline 201

GLP: yes

NOEC (Pseudokirchneriella subcapitata (algae)): > 30 mg/l

Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes

Method: OECD Test Guideline 201

GLP: yes

alpha, alpha-dimethylbenzyl hydroperoxide:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 3,9 mg/l

Exposure time: 96 h Test Type: semi-static test Analytical monitoring: no

Method: OECD Test Guideline 203

Toxicity to daphnia and other

aquatic invertebrates

: EC50 (Daphnia magna (Water flea)): 18,84 mg/l

Exposure time: 48 h
Test Type: static test
Analytical monitoring: yes

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

: EC50 (Desmodesmus subspicatus (green algae)): 3,1 mg/l

Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes

Method: OECD Test Guideline 201

## 12.2 Persistence and degradability

# Components:

methyl methacrylate:

Biodegradability : Result: Readily biodegradable.

Biodegradation: > 60 % Exposure time: 28 d

methacrylic acid:

Biodegradability : Test Type: aerobic

Inoculum: activated sludge Concentration: 3 mg/l Result: Readily biodegradable.

Biodegradation: 86 %

Exposure time: 28 d

Method: OECD Test Guideline 301D

according to Regulation (EC) No. 1907/2006



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GLP: yes

2,6-di-tert-butyl-p-cresol:

Biodegradability : Result: Not biodegradable

2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, phosphate:

Biodegradability : Test Type: aerobic

Inoculum: activated sludge, non-adapted

Concentration: 54,6 mg/l Result: Readily biodegradable. Biodegradation: 91,8 %

Related to: Dissolved organic carbon (DOC)

Exposure time: 28 d

Method: OECD Test Guideline 301F

GLP: yes

alpha, alpha-dimethylbenzyl hydroperoxide:

Biodegradability : Result: Not readily biodegradable.

## 12.3 Bioaccumulative potential

#### Components:

methyl methacrylate:

Bioaccumulation : Bioconcentration factor (BCF): 3

Partition coefficient: n-

octanol/water methacrylic acid: : log Pow: 1,38

pH: 2,2

Partition coefficient: n-: log Pow: 0,93 (22 °C)

octanol/water

2,6-di-tert-butyl-p-cresol:

Bioaccumulation : Species: Cyprinus carpio (Carp)

Exposure time: 28 d

Bioconcentration factor (BCF): 330 - 1 800

Method: flow-through test

Partition coefficient: n-

octanol/water

: log Pow: 5,2

#### 12.4 Mobility in soil

#### **Components:**

2,6-di-tert-butyl-p-cresol:

Distribution among : Koc: 8183

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...

according to Regulation (EC) No. 1907/2006



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#### 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.

Do not burn, or use a cutting torch on, the empty drum.

## **SECTION 14: Transport information**

IATA

14.1 UN number or ID : U

number

: UN 2924

14.2 UN proper shipping

name

: Flammable liquid, corrosive, n.o.s.

(METHYL METHACRYLATE, METHACRYLIC ACID)

14.3 Transport hazard

class(es)

: 3

Subsidiary risk : 8
14.4 Packing group : II

Labels : Flammable Liquids, Corrosive

Packing instruction (cargo

aircraft)

: 363

Packing instruction (passenger aircraft)

: 352

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**IMDG** 

**14.1 UN number or ID** : UN 2924

number

**14.2 UN proper shipping** : FLAMMABLE LIQUID, CORROSIVE, N.O.S.

name

(METHYL METHACRYLATE, METHACRYLIC ACID)

14.3 Transport hazard : 3

class(es)

Subsidiary risk : 8

14.4 Packing group : II

Labels : 3 (8)

EmS Code : F-E, S-C

14.5 Environmental hazards

Marine pollutant : no

**ADR** 

**14.1 UN number or ID** : UN 2924

number

**14.2 UN proper shipping** : FLAMMABLE LIQUID, CORROSIVE, N.O.S.

name

(METHYL METHACRYLATE, METHACRYLIC ACID)

**14.3 Transport hazard** : 3

class(es)

Subsidiary risk : 8 14.4 Packing group : II Labels : 3 (8)

14.5 Environmental hazards

Environmentally hazardous : no

RID

**14.1 UN number or ID** : UN 2924

number

**14.2 UN proper shipping** : FLAMMABLE LIQUID, CORROSIVE, N.O.S.

name

(METHYL METHACRYLATE, METHACRYLIC ACID)

14.3 Transport hazard : 3

class(es)

Subsidiary risk : 8 14.4 Packing group : II Labels : 3 (8)

14.5 Environmental hazards

Environmentally hazardous : no

# 14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

## **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 : Not applicable (Annex XIV)

according to Regulation (EC) No. 1907/2006



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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).

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

P5c FLAMMABLE LIQUIDS

Occupational Illnesses (R-

461-3, France)

: 65, 82, 36, 25, 12

Installations classified for the : 4331

protection of the environment (Environment Code R511-9)

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

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

NZIoC : Not 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

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

TSCA : All substances listed as active on the TSCA inventory

## **Inventories**

according to Regulation (EC) No. 1907/2006



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AICS (Australia), AIIC (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

Chemical Safety Assessments for all substances in this product are either Complete or Not applicable.

## **SECTION 16: Other information**

#### **Full text of H-Statements**

H225 : Highly flammable liquid and vapour.

H242 : Heating may cause a fire.
H302 : Harmful if swallowed.
H311 : Toxic in contact with skin.
H312 : Harmful in contact with skin.

H314 : Causes severe skin burns and eye damage.

H315 : Causes skin irritation.

H317 : May cause an allergic skin reaction.

H318 : Causes serious eye damage.

H331 : Toxic if inhaled. H332 : Harmful if inhaled.

H335 : May cause respiratory irritation.

H373 : May cause damage to organs through prolonged or repeated

exposure.

H400 : Very toxic to aquatic life.

H410 : Very toxic to aquatic life with long lasting effects.H411 : Toxic to aquatic life with long lasting effects.

#### Full text of other abbreviations

Acute Tox. : Acute toxicity

Aguatic Acute : Short-term (acute) aguatic hazard

Aquatic Chronic : Chronic aquatic toxicity
Eye Dam. : Serious eye damage
Flam. Liq. : Flammable liquids
Org. Perox. : Organic peroxides
Skin Corr. : Skin corrosion
Skin Irrit. : Skin sensitisation

STOT RE : Specific target organ toxicity - repeated exposure STOT SE : Specific target organ toxicity - single exposure

2009/161/EU : Europe. COMMISSION DIRECTIVE 2009/161/EU establishing

a third list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending

Commission Directive 2000/39/EC

FR VLE : France. Occupational Exposure Limits (INRS)

2009/161/EU / TWA : Limit Value - eight hours 2009/161/EU / STEL : Short term exposure limit FR VLE / VME : Time Weighted Average FR VLE / VLCT (VLE) : Short Term Exposure Limit

**Further information** 

Classification of the mixture: Classification procedure:

according to Regulation (EC) No. 1907/2006



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Flam.	Liq. 2	H225	Based on product data or assessment
Skin (	Corr. 1B	H314	Based on product data or assessment
Eye D	Dam. 1	H318	Based on product data or assessment
Skin S	Sens. 1	H317	Calculation method
STOT	SE 3	H335	Calculation method
Aqua	tic Chronic 3	H412	Calculation method

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