

**ARALDITE® 2022-1 A**

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Trade name : ARALDITE® 2022-1 A

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

Use of the Substance/Mixture : Adhesives

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

Company : Huntsman Advanced Materials (Switzerland) GmbH  
Address : Klybeckstrasse 200  
CH-4057 Basel  
Switzerland  
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**Emergency telephone : 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  
Swiss Toxicologic Information Centre - Emergency Phone 145  
(24 h)  
+41 44 251 5151 (from outside Switzerland)**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 irritation, Category 2	H315: Causes skin irritation.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Skin sensitization, Category 1	H317: May cause an allergic skin reaction.

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Specific target organ systemic 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****Labeling (REGULATION (EC) No 1272/2008)**

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H225 Highly flammable liquid and vapour.  
 H315 Causes skin irritation.  
 H317 May cause an allergic skin reaction.  
 H318 Causes serious eye damage.  
 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 smoking.  
 P233 Keep container tightly closed.  
 P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
 P280 Wear protective gloves/ eye protection/ face protection.

**Response:**

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.  
 P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

**Storage:**

P235 Keep cool.

**Disposal:**

P501 Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients which must be listed on the label:

methyl methacrylate

methacrylic acid

maleic acid

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**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.

No information available.

**SECTION 3: Composition/information on ingredients****3.2 Mixtures****Hazardous ingredients**

Chemical Name	CAS-No. EC-No. Registration number	Classification (67/548/EEC)	Classification (REGULATION (EC) No 1272/2008)	Concentration (%)
methyl methacrylate	80-62-6 201-297-1	F; R11 Xi; R37/38 R43	Flam. Liq.2; H225 Skin Irrit.2; H315 Skin Sens.1; H317 STOT SE3; H335	30 - 60
methacrylic acid	79-41-4 201-204-4	C; R35 Xn; R21/22	Acute Tox.4; H302 Acute Tox.3; H311 Acute Tox.4; H332 Skin Corr.1A; H314 Eye Dam.1; H318 STOT SE3; H335	3 - 7
maleic acid	110-16-7 203-742-5	Xn; R21 Xn; R22 Xi; R41 R43 Xi; R37/38	Acute Tox.4; H302 Acute Tox.4; H312 Skin Irrit.2; H315 Eye Dam.1; H318 Skin Sens.1; H317 STOT SE3; H335	1 - 3
2,6-di-tert-butyl-p-cresol	128-37-0 204-881-4	N; R50/53	Aquatic Chronic1; H410 Aquatic Acute1; H400	1 - 3
$\alpha,\alpha$ -dimethylbenzyl hydroperoxide	80-15-9 201-254-7	O; R 7 T; R23 C; R34 Xn; R21/22- R48/20/22 N; R51-R53 R53 Xn; R48/20/22	Org. Perox.E; H242 Acute Tox.4; H302 Acute Tox.4; H312 Acute Tox.4; H312 Acute Tox.3; H331 Skin Corr.1B; H314 Eye Dam.1; H318 Aquatic Chronic2; H411 STOT RE2; H373 STOT SE3; H335	0.1 - 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.

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Consult a physician.  
Show this material safety data sheet to the doctor in attendance.

- If inhaled : Move to fresh air in case of accidental inhalation of dust or fumes from overheating or combustion.  
If symptoms persist, call a physician.
- In case of skin contact : Take off contaminated clothing and shoes immediately.  
Wash off with soap and plenty of water.  
If symptoms persist, call a physician.
- In case of eye contact : Immediately flush eye(s) with plenty of water.  
Remove contact lenses.  
Protect unharmed eye.  
Keep eye wide open while rinsing.  
If eye irritation persists, consult a specialist.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.  
Do NOT induce vomiting.  
Do not give milk or alcoholic beverages.  
Never give anything by mouth to an unconscious person.  
Obtain medical attention.

**4.2 Most important symptoms and effects, both acute and delayed**

None known.

**4.3 Indication of any immediate medical attention and special treatment needed****SECTION 5: Firefighting measures****5.1 Extinguishing media**

Suitable extinguishing media : No data is available on the product itself.

Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical

Unsuitable extinguishing media : High volume water jet

No data is available on the product itself.

**5.2 Special hazards arising from the substance or mixture**

Specific hazards during fire fighting : Do not use a solid water stream as it may scatter and spread fire.

Hazardous combustion products : No data is available on the product itself.

**5.3 Advice for firefighters**

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

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for fire-fighters

Specific extinguishing methods : No data is available on the product itself.

Further information : Use water spray to cool unopened containers. 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.

**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. Beware of vapors accumulating to form explosive concentrations. Vapors 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**

None

**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

Advice on safe handling : Avoid contact with skin and eyes. For personal protection see section 8. Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Container may be opened only under exhaust ventilation

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hood.

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

Advice on protection against fire and explosion : Avoid formation of aerosol. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. 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. Store in cool place. Keep in a well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards.

Recommended storage temperature : 2 - 8 °C

Other data : No decomposition if stored and applied as directed.

**7.3 Specific end use(s)****SECTION 8: Exposure controls/personal protection****8.1 Control parameters****Occupational Exposure Limits**

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
methyl methacrylate	80-62-6	TWA	50 ppm 210 mg/m <sup>3</sup>	CH SUVA
Further information	Sensitizers; Substances marked with an S can lead to very strong allergic reactions., National Institute for Occupational Safety and Health, Institut National de Recherche et de Sécurité pour la prévention des accidents du travail et des maladies professionnelles, Harm to the unborn child is not to be expected when the OEL-value is respected			
		STEL	100 ppm 420 mg/m <sup>3</sup>	CH SUVA
Further information	Sensitizers; Substances marked with an S can lead to very strong allergic reactions., National Institute for Occupational Safety and Health, Institut National de Recherche et de Sécurité pour la prévention des accidents du travail et des maladies professionnelles, Harm to the unborn child is not to be expected when the OEL-value is respected			
		TWA	50 ppm	2009/161/EU
Further information	Indicative			
		STEL	100 ppm	2009/161/EU
Further information	Indicative			
methacrylic acid	79-41-4	TWA	5 ppm 18 mg/m <sup>3</sup>	CH SUVA

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Further information	Harm to the unborn child is not to be expected when the OEL-value is respected			
		STEL	10 ppm 36 mg/m <sup>3</sup>	CH SUVA
Further information	Harm to the unborn child is not to be expected when the OEL-value is respected			
2,6-di-tert-butyl-p-cresol	128-37-0	TWA (inhalable dust)	10 mg/m <sup>3</sup>	CH SUVA
Further information	Harm to the unborn child is not to be expected when the OEL-value is respected			
		STEL (inhalable dust)	40 mg/m <sup>3</sup>	CH SUVA
Further information	Harm to the unborn child is not to be expected when the OEL-value is respected			

**8.2 Exposure controls****Personal protective equipment**

Eye protection : Eye wash bottle with pure water  
Tightly fitting safety goggles.

Hand protection

Remarks : Solvent-resistant gloves  
The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it.  
Before removing gloves clean them with soap and water.

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 vapor formation use a respirator with an approved filter.

**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties**

Appearance : paste

Color : off-white

Odor : like acrylic

Flash point : 10 °C  
Method: estimated, closed cup

Density : 1,01 - 1,02 g/cm<sup>3</sup> (23 °C)

Solubility(ies)  
Water solubility : insoluble

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Viscosity : No data is available on the product itself.

**9.2 Other information**

No data available

**SECTION 10: Stability and reactivity****10.1 Reactivity**

Stable under recommended storage conditions.  
Stable under recommended storage conditions.

**10.2 Chemical stability**

No decomposition if stored and applied as directed.  
No decomposition if stored and applied as directed.

**10.3 Possibility of hazardous reactions**

Hazardous reactions : Stable under recommended storage conditions.  
No decomposition if used as directed.

Stable under recommended storage conditions.  
No decomposition if used as directed.

Vapors may form explosive mixture with air.

**10.4 Conditions to avoid**

Conditions to avoid : Heat, flames and sparks.

Heat, flames and sparks.

**10.5 Incompatible materials**

Materials to avoid : Strong acids and strong bases  
Strong oxidizing agents

**10.6 Hazardous decomposition products**

Burning produces obnoxious and toxic fumes., Carbon oxides

**SECTION 11: Toxicological information****11.1 Information on toxicological effects****Acute toxicity****Ingredients:**

methyl methacrylate:

Acute oral toxicity : LD50 (Rat): 7.900 - 9.400 mg/kg

methacrylic acid:

Acute oral toxicity : LD50 (Rat, male and female): 1.320 - 2.260 mg/kg  
Method: OECD Test Guideline 401  
GLP: no



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2,6-di-tert-butyl-p-cresol:  
Acute oral toxicity : LD50 (Rat, male and female): > 2.930 mg/kg  
Method: OECD Test Guideline 401

**Ingredients:**

methyl methacrylate:  
Acute inhalation toxicity : LC50 (Rat, male and female): 29,8 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Method: Directive 67/548/EEC, Annex V, B.2.

methacrylic acid:  
Acute inhalation toxicity : LC50 (Rat, male and female): 7,1 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403

**Ingredients:**

methyl methacrylate:  
Acute dermal toxicity : LD50 (Rabbit, male): > 5.000 mg/kg  
Method: OECD Test Guideline 402

methacrylic acid:  
Acute dermal toxicity : LD50 (Rabbit): 500 - 1.000 mg/kg  
GLP: no

2,6-di-tert-butyl-p-cresol:  
Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg  
Method: OECD Test Guideline 402

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

**Skin corrosion/irritation****Ingredients:**

methacrylic acid:  
Species: Rabbit  
Assessment: Corrosive  
Method: OECD Test Guideline 404  
Result: Corrosive  
GLP: yes

maleic acid:  
Species: Rabbit  
Assessment: Mild skin irritant  
Method: OECD Test Guideline 404

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Result: Irritating to skin.

2,6-di-tert-butyl-p-cresol:  
Species: Rabbit  
Assessment: No skin irritation  
Result: slight irritation

**Serious eye damage/eye irritation****Ingredients:**

methacrylic acid:  
Species: Rabbit  
Assessment: Corrosive  
Result: Irreversible effects on the eye  
GLP: no

maleic acid:  
Species: Rabbit  
Assessment: Severe eye irritation  
Method: OECD Test Guideline 405  
Result: Irreversible effects on the eye

2,6-di-tert-butyl-p-cresol:  
Species: Rabbit  
Assessment: No eye irritation  
Result: Irritation to eyes, reversing within 7 days

**Respiratory or skin sensitization****Ingredients:**

methyl methacrylate:  
Routes of exposure: Skin  
Species: Mouse  
Assessment: May cause sensitization by skin contact.  
Method: OECD Test Guideline 429  
Result: Causes sensitization.

methacrylic acid:  
Routes of exposure: Skin  
Species: Guinea pig  
Method: OECD Test Guideline 406  
Result: Does not cause skin sensitization.

maleic acid:  
Routes of exposure: Skin  
Species: Guinea pig  
Method: OECD Test Guideline 406  
Result: Causes sensitization.

Butylated hydroxytoluene:  
Routes of exposure: Skin  
Species: Humans  
Result: Does not cause skin sensitization.

Assessment: No data available

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**Germ cell mutagenicity****Ingredients:**

methacrylic acid:

Genotoxicity in vitro

: Concentration: 33 - 4000 ug/plate  
 Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 471  
 Result: negative

maleic acid:

Genotoxicity in vitro

: Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 476  
 Result: negative  
 GLP: yes

: Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 471  
 Result: negative

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

Genotoxicity in vitro

: Metabolic activation: with and without metabolic activation  
 Result: negative

: Metabolic activation: Metabolic activation  
 Result: negative

: Concentration: 100 - 1000 ug/plate  
 Metabolic activation: with and without metabolic activation  
 Result: negative

**Ingredients:**

methacrylic acid:

Genotoxicity in vivo

: Cell type: Somatic  
 Application Route: Inhalation  
 Exposure time: 2 h  
 Dose: 100 - 1000 ppm  
 Method: OECD Test Guideline 475  
 Result: Not classified due to inconclusive data.  
 GLP: no

Application Route: Inhalation  
 Exposure time: 6 h  
 Dose: 100 - 9000 ppm  
 Method: OECD Test Guideline 478  
 Result: negative  
 GLP: no

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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

**Carcinogenicity****Ingredients:**

methacrylic acid:  
Species: Rat, (male and female)  
Application Route: Inhalation  
Exposure time: 24 month(s)  
Dose: 250 - 1000 ppm  
Frequency of Treatment: 5 daily  
Method: OECD Test Guideline 453  
Result: negative

Species: Rat, (male and female)  
Application Route: Oral  
Exposure time: 24 month(s)  
Dose: 12 - 3300 ppm  
Frequency of Treatment: 7 daily  
Result: negative

2,6-di-tert-butyl-p-cresol:  
Species: Rat, (male and female)  
Application Route: Oral  
Result: negative  
Target Organs: Liver

Carcinogenicity - Assessment : No data available

**Reproductive toxicity****Ingredients:**

maleic acid:  
Effects on fertility : Species: Rat, male and female  
Application Route: Oral  
Target Organs: Bladder  
Method: OECD Test Guideline 416

Target Organs: Kidney

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

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Application Route: Oral

**Ingredients:**

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

Effects on fetal development :

Species: Rat

Application Route: Oral

General Toxicity Maternal: NOAEL (No observed adverse effect level): 100 mg/kg body weight

Result: No teratogenic effects.

Reproductive toxicity - Assessment : No data available

**STOT-single exposure****Ingredients:**

methyl methacrylate:

Routes of exposure: Inhalation

Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

**STOT-repeated exposure**

No data available

**Repeated dose toxicity****Ingredients:**

methacrylic acid:

Species: Rat, male and female

NOEC: 500

Test atmosphere: vapor

Exposure time: 2 yr Number of exposures: 5 d

Method: OECD Test Guideline 453

maleic acid:

Species: Rat, male and female

No-observed-effect level: 40 mg/kg

Application Route: Ingestion

Exposure time: 2.160 h Number of exposures: 7 d

Method: Subchronic toxicity

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

Species: Rat, male and female

NOAEL (No observed adverse effect level): 25

Application Route: Ingestion

Method: Chronic toxicity

Repeated dose toxicity - Assessment : No data available

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**Aspiration toxicity**

No data available

**Experience with human exposure**

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

**Toxicology, Metabolism, Distribution**

No data available

**Neurological effects**

No data available

**Further information****Product:**

Remarks: Solvents may degrease the skin.

**SECTION 12: Ecological information****12.1 Toxicity****Ingredients:**

methyl methacrylate:

Toxicity to fish : LC50 : 191 mg/l  
Exposure time: 96 hToxicity to daphnia and other : EC50 : 69 mg/l  
aquatic invertebrates Exposure time: 48 hToxicity to algae : IC50 : > 110 mg/l  
Exposure time: 72 h

methacrylic acid:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 85 mg/l  
Exposure time: 96 h

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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  
 Exposure time: 48 h  
 Test Type: flow-through test  
 Test substance: Fresh water  
 Method: Aquatic Invertebrate Acute Toxicity Test, Freshwater Daphnids  
 GLP: yes

Toxicity to algae : ErC50 (Selenastrum capricornutum (green algae)): 45 mg/l  
 Exposure time: 72 h  
 Test Type: static test  
 Test substance: Fresh water  
 Method: OECD Test Guideline 201  
 GLP: yes

Toxicity to bacteria : EC50 (Pseudomonas putida): 270 mg/l  
 Exposure time: 17 h  
 Test Type: static test  
 Test substance: Fresh water  
 Method: DIN 38 412 Part 8  
 GLP: yes

Toxicity to fish (Chronic toxicity) : GLP: yes

NOEC: 10 mg/l  
 Exposure time: 35 d  
 Species: Brachydanio rerio (zebrafish)  
 Test Type: flow-through test  
 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  
 Test substance: Fresh water  
 Method: OECD Test Guideline 211

maleic acid:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 75 mg/l  
 Exposure time: 96 h  
 Test Type: static test  
 Test substance: Fresh water  
 Method: OPPTS 850.1075

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 42,81 mg/l  
 Exposure time: 48 h  
 Test Type: static test

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Test substance: Fresh water  
Method: OECD Test Guideline 202

Toxicity to algae : ErC50 (Selenastrum capricornutum (green algae)): 74,35 mg/l  
Exposure time: 72 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 201

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

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,61 mg/l  
Exposure time: 48 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 202

Toxicity to algae : EC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): > 0,4 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: Directive 67/548/EEC, Annex V, C.3.

M-Factor (Acute aquatic toxicity) : 1

Toxicity to bacteria : IC50 (activated sludge): > 500 mg/l  
Exposure time: 0,5 h  
Method: Directive 67/548/EEC, Annex V, C.11.

EC50 (activated sludge): > 10.000 mg/l  
Exposure time: 3 h  
Test Type: static test  
Method: Directive 67/548/EEC, Annex V, B.15.

Toxicity to fish (Chronic toxicity) : LC0: >= 0,57 mg/l  
Exposure time: 96 hrs  
Species: Brachydanio rerio (zebrafish)  
Test Type: semi-static test  
Method: Directive 67/548/EEC, Annex V, C.1.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,32 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Test Type: semi-static test  
Method: OECD Test Guideline 202

EC0: >= 0,31 mg/l  
Exposure time: 48 hrs  
Species: Daphnia magna (Water flea)  
Test Type: static test  
Method: Directive 67/548/EEC, Annex V, C.2.

NOEC: 0,23 mg/l  
Exposure time: 48 hrs  
Species: Daphnia magna (Water flea)  
Test Type: static test



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Method: OECD Test Guideline 202

NOEC: 0,316 mg/l  
 Exposure time: 21 d  
 Species: Daphnia magna (Water flea)  
 Test Type: semi-static test  
 Method: OECD Test Guideline 202

**12.2 Persistence and degradability****Ingredients:**

methyl methacrylate:

Biodegradability : Result: Readily biodegradable.  
 Biodegradation: > 60 %  
 Exposure time: 28 d

methacrylic acid:

Biodegradability : Inoculum: activated sludge  
 Concentration: 3 mg/l  
 Result: Readily biodegradable.  
 Biodegradation: 86 %  
 Exposure time: 28 d  
 Method: OECD Test Guideline 301D

Photodegradation : Test Type: Air

maleic acid:

Biodegradability : Inoculum: Sewage (STP effluent)  
 Concentration: 13,78 mg/l  
 Result: Readily biodegradable.  
 Biodegradation: ca. 97 %  
 Exposure time: 28 d  
 Method: OECD Test Guideline 301B

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

Biodegradability : Inoculum: activated sludge  
 Result: Inherently biodegradable.  
 Biodegradation: 5,2 %  
 Exposure time: 112 d

**12.3 Bioaccumulative potential****Ingredients:**

methyl methacrylate:

Bioaccumulation : Bioconcentration factor (BCF): 3

Partition coefficient: n-octanol/water

: log Pow: 1,38

methacrylic acid:

Partition coefficient: n-octanol/water

: log Pow: 0,93 (22 °C)  
 pH: 2,2

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maleic acid:  
Partition coefficient: n-octanol/water : log Pow: -1,3 (20 °C)  
pH: 2,5  
Method: OECD Test Guideline 107

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: 5,1

**12.4 Mobility in soil****Ingredients:**

2,6-di-tert-butyl-p-cresol:  
Distribution among environmental compartments : Koc: 8183

**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 Other adverse effects****Product:**

Additional ecological information : Remarks: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**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.  
Offer surplus and non-recyclable solutions to a licensed disposal company.

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.

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**SECTION 14: Transport information****IATA**

**14.1 UN number** : UN 1133  
**14.2 UN proper shipping name** : Adhesives  
**14.3 Transport hazard class(es)** : 3  
**14.4 Packing group** : II  
Labels : Flammable Liquids  
Packing instruction (cargo aircraft) : 364  
Packing instruction (passenger aircraft) : 353

**IMDG**

**14.1 UN number** : UN 1133  
**14.2 UN proper shipping name** : ADHESIVES  
**14.3 Transport hazard class(es)** : 3  
**14.4 Packing group** : II  
Labels : 3  
EmS Code : F-E, S-D  
**14.5 Environmental hazards**  
Marine pollutant : no

**ADR**

**14.1 UN number** : UN 1133  
**14.2 UN proper shipping name** : ADHESIVES  
**14.3 Transport hazard class(es)** : 3  
**14.4 Packing group** : II  
Labels : 3  
**14.5 Environmental hazards**  
Marine pollutant : no

**RID**

**14.1 UN number** : UN 1133  
**14.2 UN proper shipping name** : ADHESIVES  
**14.3 Transport hazard class(es)** : 3  
**14.4 Packing group** : II  
Labels : 3  
**14.5 Environmental hazards**  
Marine pollutant : no

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

Not applicable for product as supplied.

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**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

Volatil organic compounds : Law on the incentive tax for volatile organic compounds (VOCV)  
Volatil organic compounds (VOC) content: 0,03 %  
Remarks: no VOC duties

**The ingredients of this product are reported in the following inventories:**

CH INV : The mixture contains substances listed on the Swiss Inventory

TSCA : On TSCA Inventory

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

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

NZIoC : Not in compliance with the inventory

ENCS : Not in compliance with the inventory

ISHL : Not in compliance with the inventory

KECI : 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

**Inventories**

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

**15.2 Chemical Safety Assessment****SECTION 16: Other information****Full text of R-Phrases**

R 7 : May cause fire.  
R11 : Highly flammable.  
R21 : Harmful in contact with skin.

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R21/22	: Harmful in contact with skin and if swallowed.
R22	: Harmful if swallowed.
R23	: Toxic by inhalation.
R34	: Causes burns.
R35	: Causes severe burns.
R37/38	: Irritating to respiratory system and skin.
R41	: Risk of serious damage to eyes.
R43	: May cause sensitization by skin contact.
R48/20/22	: Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
R50/53	: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51	: Toxic to aquatic organisms.
R53	: May cause long-term adverse effects in the aquatic environment.

**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
Aquatic Acute	: Acute aquatic toxicity
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 irritation
Skin Sens.	: Skin sensitization
STOT RE	: Specific target organ systemic toxicity - repeated exposure
STOT SE	: Specific target organ systemic toxicity - single exposure

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