

# SAFETY DATA SHEET

ARALDITE® 2047-1 RESIN

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

### 1.1 Product identifier

**Product name** : ARALDITE® 2047-1 RESIN  
**Product code** : 00064898  
**Product description** :

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

**Product use** : Acrylate for adhesive systems

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

**Supplier** : Huntsman Advanced Materials (Europe)BVBA  
Everslaan 45  
3078 Everberg / Belgium  
Tel.: +41 61 299 20 41  
Fax: +41 61 299 20 40

**e-mail address of person responsible for this SDS** : Global\_Product\_EHS\_AdMat@huntsman.com

### 1.4 Emergency telephone number

#### Supplier

**Telephone number** : EUROPE: +32 35 75 1234  
France ORFILA: +33(0)145425959  
ASIA: +65 6336-6011  
China: +86 20 39377888  
Australia: 1800 786 152  
New Zealand: 0800 767 437  
USA: +1/800/424.9300

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Product definition** : Mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Flam. Liq. 2, H225  
Acute Tox. 4, H332  
Skin Irrit. 2, H315  
Eye Dam. 1, H318  
Skin Sens. 1, H317  
STOT SE 3, H335

**Ingredients of unknown toxicity** : Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 52.3%

**Ingredients of unknown ecotoxicity** : Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 52.3%

#### Classification according to Directive 1999/45/EC [DPD]

The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

**Classification** : F; R11  
Xn; R20  
Xi; R36/37/38  
R43

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**SECTION 2: Hazards identification**

**Physical/chemical hazards** : Highly flammable.

**Human health hazards** : Harmful by inhalation. Irritating to eyes, respiratory system and skin. May cause sensitisation by skin contact.

See Section 16 for the full text of the R phrases or H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

**2.2 Label elements**

**Hazard pictograms** :



**Signal word** : Danger

**Hazard statements** : Highly flammable liquid and vapour.  
 Harmful if inhaled.  
 Causes skin irritation.  
 Causes serious eye damage.  
 May cause an allergic skin reaction.  
 May cause respiratory irritation.

**Precautionary statements**

**General** : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

**Prevention** : Wear protective gloves: >8 hours (breakthrough time): butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL). Wear eye or face protection. Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.

**Response** : IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF IN EYES: Immediately call a POISON CENTER or physician.

**Storage** : Keep cool.

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

**Hazardous ingredients** : methyl methacrylate  
 methacrylic acid  
 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, phosphate  
 phenyl isocyanate

**Supplemental label elements** : Not applicable.

**Supplemental label elements** : Contains isocyanates - See information supplied by the manufacturers. This information is supplied in the current Safety Data Sheet.

**Special packaging requirements**

**Containers to be fitted with child-resistant fastenings** : Not applicable.

**Tactile warning of danger** : Yes, applicable.

**2.3 Other hazards**

**Other hazards which do not result in classification** : Not available.

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**SECTION 2: Hazards identification**

**SECTION 3: Composition/information on ingredients**

**Substance/mixture** : Mixture

Product/ingredient name	Identifiers	%	Classification		Type
			67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	
methyl methacrylate	CAS: 80-62-6 EC: 201-297-1	30-60	F; R11 Xi; R37/38 R43	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Skin Sens. 1, H317 STOT SE 3, H335	[1] [2]
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate	CAS: 7534-94-3 EC: 231-403-1	3-7	Xi; R36/37/38	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	[1]
methacrylic acid	CAS: 79-41-4 EC: 201-204-4	1-3	Xn; R21/22 C; R35	Acute Tox. 4, H302 Acute Tox. 3, H311 Acute Tox. 4, H332 Skin Corr. 1A, H314 Eye Dam. 1, H318 STOT SE 3, H335	[1] [2]
2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, phosphate	CAS: 52628-03-2 EC: 258-053-2	1-3	C; R34	Skin Corr. 1B, H314 Eye Dam. 1, H318	[1]
2,2'-[(4-methylphenyl)imino]bisethanol	CAS: 3077-12-1 EC: 221-359-1	1-3	Xn; R22 Xi; R41	Acute Tox. 4, H302 Eye Dam. 1, H318	[1]
N,N-dimethylaniline	CAS: 121-69-7 EC: 204-493-5	0.1-1	Carc. Cat. 3; R40 T; R23/24/25 N; R51/53	Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 3, H331 Carc. 2, H351 Aquatic Chronic 2, H411	[1] [2]
phenyl isocyanate	CAS: 103-71-9 EC: 203-137-6	0.1-1	R10 T+; R26 Xn; R22 Xi; R36/37/38 R42	Flam. Liq. 3, H226 Acute Tox. 4, H302 Acute Tox. 1, H330 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 STOT SE 3, H335	[1]
			<b>See section 16 for the full text of the R-phrases declared above</b>	<b>See Section 16 for the full text of the H statements declared above.</b>	

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### SECTION 3: Composition/information on ingredients

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Type

- [1] Substance classified with a health or environmental hazard
  - [2] Substance with a workplace exposure limit
  - [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
  - [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- Occupational exposure limits, if available, are listed in Section 8.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

- Eye contact** : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

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

##### Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Harmful if inhaled. May cause respiratory irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

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**SECTION 4: First aid measures**

**Skin contact** : Causes skin irritation. May cause an allergic skin reaction.  
**Ingestion** : May cause burns to mouth, throat and stomach.

**Over-exposure signs/symptoms**

**Eye contact** : Adverse symptoms may include the following:  
 pain  
 watering  
 redness  
**Inhalation** : Adverse symptoms may include the following:  
 respiratory tract irritation  
 coughing  
**Skin contact** : Adverse symptoms may include the following:  
 pain or irritation  
 redness  
 blistering may occur  
**Ingestion** : Adverse symptoms may include the following:  
 stomach pains

**4.3 Indication of any immediate medical attention and special treatment needed**

**Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.  
**Specific treatments** : Symptomatic treatment and supportive therapy as indicated. Following severe exposure the patient should be kept under medical review for at least 48 hours.

**SECTION 5: Firefighting measures**

**5.1 Extinguishing media**

**Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.  
**Unsuitable extinguishing media** : Do not use water jet.

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

**Hazards from the substance or mixture** : Highly flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.  
**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
 carbon dioxide  
 carbon monoxide  
 nitrogen oxides  
 phosphorus oxides  
 metal oxide/oxides

**5.3 Advice for firefighters**

**Special precautions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.  
**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- 6.2 Environmental precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### 6.3 Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

- 6.4 Reference to other sections** : See Section 1 for emergency contact information.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 13 for additional waste treatment information.

## SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

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**SECTION 7: Handling and storage**

**7.2 Conditions for safe storage, including any incompatibilities**

: Store between the following temperatures: 2 to 40°C (35.6 to 104°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

**Storage hazard class  
Huntsman Advanced  
Materials**

: Storage class 3, Flammable liquids

**7.3 Specific end use(s)**

**Recommendations** : Not available.

**Industrial sector specific solutions** : Not available.

**SECTION 8: Exposure controls/personal protection**

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

**8.1 Control parameters**

**Occupational exposure limits**

Product/ingredient name	Exposure limit values
methyl methacrylate	<b>EH40/2005 WELs (United Kingdom (UK), 8/2007).</b> STEL: 416 mg/m <sup>3</sup> 15 minute(s). STEL: 100 ppm 15 minute(s). TWA: 208 mg/m <sup>3</sup> 8 hour(s). TWA: 50 ppm 8 hour(s).
methacrylic acid	<b>EH40/2005 WELs (United Kingdom (UK), 8/2007).</b> STEL: 143 mg/m <sup>3</sup> 15 minute(s). STEL: 40 ppm 15 minute(s). TWA: 72 mg/m <sup>3</sup> 8 hour(s). TWA: 20 ppm 8 hour(s).
N,N-dimethylaniline	<b>EH40/2005 WELs (United Kingdom (UK), 8/2007). Absorbed through skin.</b> STEL: 50 mg/m <sup>3</sup> 15 minute(s). STEL: 10 ppm 15 minute(s). TWA: 5 ppm 8 hour(s). TWA: 25 mg/m <sup>3</sup> 8 hour(s).
phenyl isocyanate	<b>EH40/2005 WELs (United Kingdom (UK), 8/2007). Skin sensitiser.</b> STEL: 0.07 mg/m <sup>3</sup> , (as NCO) 15 minute(s). TWA: 0.02 mg/m <sup>3</sup> , (as NCO) 8 hour(s).

**Recommended monitoring procedures**

: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

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**SECTION 8: Exposure controls/personal protection**

Derived effect levels

No DELs available.

Predicted effect concentrations

No PECs available.

**8.2 Exposure controls**

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Skin protection

**Hand protection** : 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.

**Material of gloves for long term application (BTT>480min):** : butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL)

**Material of gloves for short term/splash application (10min<BTT<480min):** : nitrile rubber  
 (BTT = Break Through Time)

Use gloves approved to relevant standards e.g. EN 374 (Europe), F739 (US). Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material and dexterity. Always seek advice from glove suppliers. Additional information can be found for instance at [www.gisbau.de](http://www.gisbau.de).

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection** : In case of inadequate ventilation wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.



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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	: Liquid.		
<b>Colour</b>	: Grey.		
<b>Odour</b>	: ester-like		
<b>Odour threshold</b>	: Not available.		
<b>pH</b>	: Not available.		
<b>Melting point/freezing point</b>	: Not available.		
<b>Initial boiling point and boiling range</b>	: >100°C		
<b>Flash point</b>	: Closed cup: >10°C		
<b>Evaporation rate</b>	: Not available.		
<b>Flammability (solid, gas)</b>	: Not available.		
<b>Burning time</b>	: Not applicable.		
<b>Burning rate</b>	: Not applicable.		
<b>Upper/lower flammability or explosive limits</b>	: Lower: 2.1% Upper: 12.5%		
<b>Vapour pressure</b>	: <3.8 kPa [20°C]		
<b>Vapour density</b>	: 1 [Air = 1]		
<b>Relative density</b>	: Not available.		
<b>Solubility(ies)</b>			
<b>Water solubility</b>	: Slightly soluble		
<b>Partition coefficient: n-octanol/water (LogK<sub>ow</sub>)</b>	: Not available.		
<b>Auto-ignition temperature</b>	: 430°C		
<b>Decomposition temperature</b>	: >200°C		
<b>Viscosity</b>	: Dynamic: 55000 to 80000 mPa·s	23	deg C
<b>Explosive properties</b>	: Not available.		
<b>Oxidising properties</b>	: Not available.		

### 9.2 Other information

**Density** : 1.3 g/cm<sup>3</sup> [20°C (68°F)]

## SECTION 10: Stability and reactivity

**10.1 Reactivity** : No specific test data related to reactivity available for this product or its ingredients.

**10.2 Chemical stability** : The product is stable.

**10.3 Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

**10.4 Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

**10.5 Incompatible materials** : Reactive or incompatible with the following materials:

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## SECTION 10: Stability and reactivity

**10.6 Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Decomposition products may include the following materials: Carbon oxides, Burning produces obnoxious and toxic fumes.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Endpoint	Species	Result	Exposure
ARALDITE 2047-1 RESIN	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>2200 mg/kg	-
methyl methacrylate	LC50 Inhalation Vapour	Rat	7093 ppm	4 hours
	LD50 Dermal	Rabbit - Male	>5000 mg/kg	-
methacrylic acid	LD50 Oral	Rat	7872 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat - Male, Female	7.1 ml/l	4 hours
	LD50 Dermal	Rat	500 to 1000 mg/kg	-
phenyl isocyanate	LD50 Oral	Rat	1320 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	0.02 mg/L	4 hours
	LD50 Dermal	Rabbit	7130 mg/kg	-
	LD50 Dermal	Rat	5475 mg/kg	-
	LD50 Oral	Mouse	196 mg/kg	-
	LD50 Oral	Rat	800 mg/kg	-

#### Acute toxicity estimates

Route	ATE value
Inhalation (vapours)	12.19 mg/l

#### Irritation/Corrosion

##### Conclusion/Summary

**Skin** : No additional information.

**Eyes** : No additional information.

**Respiratory** : No additional information.

#### Sensitiser

Product/ingredient name	Test	Route of exposure	Species	Result
ARALDITE 2047-1 RESIN	-	skin	Guinea pig	Sensitising
methyl methacrylate	-	skin	Not known	Sensitising
	-	Respiratory	Not known	Sensitising

**Conclusion/Summary** : No additional information.

#### Mutagenicity

Product/ingredient name	Test	Result
phenyl isocyanate	-	Negative

#### Carcinogenicity

#### Reproductive toxicity

#### Teratogenicity

Product/ingredient name	Test	Species	Result/Result type
phenyl isocyanate	-	Mouse - Female	9.8 mg/kg

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**SECTION 11: Toxicological information**

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
methyl methacrylate	Category 3	Not determined	Respiratory tract irritation
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate	Category 3	Not determined	Respiratory tract irritation
methacrylic acid	Category 3	Not determined	Respiratory tract irritation
phenyl isocyanate	Category 3	Not determined	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

**Information on the likely routes of exposure** : Not available.

Potential acute health effects

- Inhalation** : Harmful if inhaled. May cause respiratory irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Ingestion** : May cause burns to mouth, throat and stomach.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Eye contact** : Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics

- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing
- Ingestion** : Adverse symptoms may include the following:  
stomach pains
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
blistering may occur
- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

- Conclusion/Summary** : Not available.
- General** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

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### SECTION 11: Toxicological information

<b>Carcinogenicity</b>	: No known significant effects or critical hazards.	
<b>IARC</b>	: methyl methacrylate	3
	: N,N-dimethylaniline	3
<b>Mutagenicity</b>	: No known significant effects or critical hazards.	
<b>Teratogenicity</b>	: No known significant effects or critical hazards.	
<b>Developmental effects</b>	: No known significant effects or critical hazards.	
<b>Fertility effects</b>	: No known significant effects or critical hazards.	
<b>Other information</b>	: Not available.	

### SECTION 12: Ecological information

#### 12.1 Toxicity

Product/ingredient name	Test	Endpoint	Exposure	Species	Result
ARALDITE 2047-1 RESIN	OECD 202: Part II (Daphnia sp., Reproduction Test)	Acute EC50	21 hours Flow-through	Daphnia	49 mg/L
	-	Acute EC50	48 hours	Daphnia	>69 mg/L
	-	Acute LC50	96 hours	Fish	>79 mg/L

#### 12.2 Persistence and degradability

Product/ingredient name	Test	Period	Result
ARALDITE 2047-1 RESIN	-	14 days	<94 %

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
ARALDITE 2047-1 RESIN	-	-	Readily

#### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
phenyl isocyanate	-	16.5	low

#### 12.4 Mobility in soil

<b>Soil/water partition coefficient (K<sub>oc</sub>)</b>	: Not available.
<b>Mobility</b>	: Not available.

#### 12.5 Results of PBT and vPvB assessment

Not applicable.

#### 12.6 Other adverse effects : No known significant effects or critical hazards.

#### 12.7 Other ecological information

### SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

#### 13.1 Waste treatment methods

##### Product

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**SECTION 13: Disposal considerations**

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

**Hazardous waste** : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 91/689/EEC.

European waste catalogue (EWC)

Waste code	Waste designation
	08 04 06 adhesives and sealants sludges free of halogenated solvents



Packaging

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

**Special precautions** : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spill material and runoff and contact with soil, waterways, drains and sewers.

**SECTION 14: Transport information**

	14.1 UN number	14.2 UN proper shipping name
<b>ADR/RID</b>	UN1133	ADHESIVES (methyl methacrylate)
<b>IMDG</b>	UN1133	ADHESIVES (methyl methacrylate)
<b>IATA</b>	UN1133	ADHESIVES (methyl methacrylate)


	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards	14.6 Special precautions for user	Additional information
<b>ADR/RID</b>	3 	II	No.	Not available.	<b>Hazard identification number</b> 33 <b>Special provisions</b> 640D <b>Tunnel code</b> D/E
<b>IMDG</b>	3 	II	No.	Not available.	<b>Emergency schedules (EmS)</b> F-E, S-D

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**SECTION 14: Transport information**

<b>IATA</b>	3		II	No.	Not available.	<b>Passenger and Cargo Aircraft</b> Quantity limitation: 5 L Packaging instructions: 353 <b>Cargo Aircraft Only</b> Quantity limitation: 60 L Packaging instructions: 364
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**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** : Not applicable.

**SECTION 15: Regulatory information**

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Substances of very high concern

None of the components are listed.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : Not applicable.

Other EU regulations

**Europe inventory** : All components are listed or exempted.

**Black List Chemicals** : Not listed

**Priority List Chemicals** : Listed

**Integrated pollution prevention and control list (IPPC) - Air** : Not listed

**Integrated pollution prevention and control list (IPPC) - Water** : Not listed

Product/ingredient name	Carcinogenic effects	Mutagenic effects	Developmental effects	Fertility effects
N,N-dimethylaniline	Carc. 2, H351	-	-	-

National regulations

**References** : The provision of Safety Data Sheets comes under Regulation 6 of CHIP (CHIP is the recognised abbreviation for the Chemicals Hazard Information and Packaging Regulations). This is an addition to the Health and Safety at Work Act 1974.

International regulations

**Chemical Weapons Convention List Schedule I Chemicals** : Not listed

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**SECTION 15: Regulatory information**

**Chemical Weapons Convention List Schedule II Chemicals** : Not listed

**Chemical Weapons Convention List Schedule III Chemicals** : Not listed

**15.2 Chemical Safety Assessment** : This product contains substances for which Chemical Safety Assessments are still required.

**SECTION 16: Other information**

✔ Indicates information that has changed from previously issued version.

**Abbreviations and acronyms** : ATE = Acute Toxicity Estimate  
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
 DNEL = Derived No Effect Level  
 EUH statement = CLP-specific Hazard statement  
 PNEC = Predicted No Effect Concentration  
 RRN = REACH Registration Number

**Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]**

Classification	Justification
Flam. Liq. 2, H225 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335	On basis of test data Calculation method Calculation method Calculation method On basis of test data Calculation method

**Full text of abbreviated H statements** : H225 Highly flammable liquid and vapour.  
 H226 Flammable liquid and vapour.  
 H301 Toxic if swallowed.  
 H302 Harmful if swallowed.  
 H311 Toxic 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.  
 H319 Causes serious eye irritation.  
 H330 Fatal if inhaled.  
 H331 Toxic if inhaled.  
 H332 Harmful if inhaled.  
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 H335 May cause respiratory irritation.  
 H351 Suspected of causing cancer.  
 H411 Toxic to aquatic life with long lasting effects.

**Full text of classifications [CLP/GHS]** : Acute Tox. 1, H330 ACUTE TOXICITY: INHALATION - Category 1  
 Acute Tox. 3, H301 ACUTE TOXICITY: ORAL - Category 3  
 Acute Tox. 3, H311 ACUTE TOXICITY: SKIN - Category 3  
 Acute Tox. 3, H331 ACUTE TOXICITY: INHALATION - Category 3  
 Acute Tox. 4, H302 ACUTE TOXICITY: ORAL - Category 4  
 Acute Tox. 4, H332 ACUTE TOXICITY: INHALATION - Category 4  
 Aquatic Chronic 2, H411 AQUATIC TOXICITY (CHRONIC) - Category 2  
 Carc. 2, H351 CARCINOGENICITY - Category 2  
 Eye Dam. 1, H318 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1  
 Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2  
 Flam. Liq. 2, H225 FLAMMABLE LIQUIDS - Category 2  
 Flam. Liq. 3, H226 FLAMMABLE LIQUIDS - Category 3  
 Resp. Sens. 1, H334 RESPIRATORY SENSITIZATION - Category 1

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**SECTION 16: Other information**

Skin Corr. 1A, H314	SKIN CORROSION/IRRITATION - Category 1A
Skin Corr. 1B, H314	SKIN CORROSION/IRRITATION - Category 1B
Skin Irrit. 2, H315	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1, H317	SKIN SENSITIZATION - Category 1
STOT SE 3, H335	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation] - Category 3

**Full text of abbreviated R phrases** : R11- Highly flammable.  
R10- Flammable.  
R40- Limited evidence of a carcinogenic effect.  
R26- Very toxic by inhalation.  
R23/24/25- Toxic by inhalation, in contact with skin and if swallowed.  
R20- Harmful by inhalation.  
R22- Harmful if swallowed.  
R21/22- Harmful in contact with skin and if swallowed.  
R34- Causes burns.  
R35- Causes severe burns.  
R41- Risk of serious damage to eyes.  
R37/38- Irritating to respiratory system and skin.  
R36/37/38- Irritating to eyes, respiratory system and skin.  
R42- May cause sensitisation by inhalation.  
R43- May cause sensitisation by skin contact.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Full text of classifications [DSD/DPD]** : F - Highly flammable  
Carc. Cat. 3 - Carcinogen category 3  
T+ - Very toxic  
T - Toxic  
C - Corrosive  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment

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### **SECTION 16: Other information**

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