



## SAFETY DATA SHEET

### Altro Flow 1mm/Altro Flow 2mm/Altro Flow 3mm hardener

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

##### 1.1. Product identifier

**Product name** Altro Flow 1mm/Altro Flow 2mm/Altro Flow 3mm hardener

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

**Identified uses** Amine hardener for epoxy base - Industrial flooring & wall coatings

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

**Supplier** Altro Resin Systems Ltd  
 Unit 3 Station Rd Industrial Estate  
 Maiden Newton  
 Dorchester  
 Dorset  
 DT2 0AE  
 Tel: 01300320620  
 Fax: 01300321122

info@altro.com

##### 1.4. Emergency telephone number

**Emergency telephone** +44(0)1462480480 (Monday-Friday 09.00-17.00)

#### SECTION 2: Hazards identification

##### 2.1. Classification of the substance or mixture

###### Classification (EC 1272/2008)

**Physical hazards** Not Classified

**Health hazards** Acute Tox. 4 - H302 Acute Tox. 4 - H332 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Repr. 2 - H361fd

**Environmental hazards** Aquatic Acute 1 - H400 Aquatic Chronic 3 - H412

**Classification (67/548/EEC or 1999/45/EC)** Xn;R20/21/22. Repr. Cat. 3;R62,R63. C;R34. R43. N;R50/53.

**Human health** See Section 16 for the full text of the R phrases declared on this section

**Environmental** See Section 16 for the full text of the R phrases declared on this section

##### 2.2. Label elements

###### Pictogram



**Signal word**

Danger

## Altro Flow 1mm/Altro Flow 2mm/Altro Flow 3mm hardener

<b>Hazard statements</b>	<p>H302+H332 Harmful if swallowed or if inhaled.  H314 Causes severe skin burns and eye damage.  H317 May cause an allergic skin reaction.  H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.  H400 Very toxic to aquatic life.  H412 Harmful to aquatic life with long lasting effects.</p>
<b>Precautionary statements</b>	<p>P271 Use only outdoors or in a well-ventilated area.  P273 Avoid release to the environment.  P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  P281 Use personal protective equipment as required.  P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  P308+P313 IF exposed or concerned: Get medical advice/ attention.  P310 Immediately call a POISON CENTER/ doctor.  P501 Dispose of contents/ container to ...  P501 Dispose of contents/ container in accordance with national regulations.</p>
<b>Contains</b>	ISOPHORONEDIAMINE, BENZYL ALCOHOL, Nonylphenol, 2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL

### 2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

<b>ISOPHORONEDIAMINE</b>	<b>30-60%</b>
CAS number: 2855-13-2	EC number: 220-666-8
<b>Classification</b>	<b>Classification (67/548/EEC or 1999/45/EC)</b>
Acute Tox. 4 - H302	C;R34 Xn;R21/22 R43 R52/53
Acute Tox. 4 - H312	
Skin Corr. 1B - H314	
Eye Dam. 1 - H318	
Skin Sens. 1 - H317	
Aquatic Chronic 3 - H412	
<b>BENZYL ALCOHOL</b>	<b>30-60%</b>
CAS number: 100-51-6	EC number: 202-859-9
<b>Classification</b>	<b>Classification (67/548/EEC or 1999/45/EC)</b>
Acute Tox. 4 - H302	Xn;R20/22
Acute Tox. 4 - H332	

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<b>Nonylphenol</b> CAS number: — M factor (Acute) = 10	<b>10-30%</b>
<b>Classification</b> Acute Tox. 4 - H302 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Repr. 2 - H361fd Aquatic Acute 1 - H400	
<b>DISTILLATES (PETROLEUM), HYDROTREATED LIGHT; KEROSENE - UNSPECIFIED</b>	<b>5-10%</b>
CAS number: 64742-47-8                      EC number: 265-149-8	
<b>Classification</b> Asp. Tox. 1 - H304	<b>Classification (67/548/EEC or 1999/45/EC)</b> Xn;R65
<b>2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL</b>	<b>1-5%</b>
CAS number: 90-72-2                      EC number: 202-013-9	
<b>Classification</b> Skin Corr. 1B - H314 Eye Dam. 1 - H318 Aquatic Chronic 3 - H412	<b>Classification (67/548/EEC or 1999/45/EC)</b> Xi;R36/38. R52/53.

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

<b>Inhalation</b>	Remove casualty from exposure ensuring one's own safety whilst doing so
<b>Ingestion</b>	Wash out mouth with water. Transfer to hospital as soon as possible
<b>Skin contact</b>	Drench the affected skin with running water for 10 minutes or longer if substance is still on skin
<b>Eye contact</b>	Bathe the eye with running water for 15 minutes. Transfer to hospital for specialist examination

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

<b>Inhalation</b>	There may be irritation of the throat with a feeling of tightness in the chest
<b>Ingestion</b>	There may be soreness and redness of the mouth and throat. Corrosive burns may appear around the lips
<b>Skin contact</b>	An itchy rash may occur at the site of contact
<b>Eye contact</b>	There may be irritation and pain

#### 4.3. Indication of any immediate medical attention and special treatment needed

**Notes for the doctor**                      No specific recommendations. If in doubt, get medical attention promptly.

### SECTION 5: Firefighting measures

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### 5.1. Extinguishing media

**Suitable extinguishing media** Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.

### 5.2. Special hazards arising from the substance or mixture

**Hazardous combustion products** Protection against nuisance dust must be used when the airborne concentration exceeds 10 mg/m<sup>3</sup>. Oxides of carbon.

### 5.3. Advice for firefighters

**Protective actions during firefighting** NOTE! Use air-supplied respirators to protect against gases/fumes. Use special protective clothing. Regular protection may not be safe.  
Keep run-off water out of sewers and water sources. Dike for water control.

**Special protective equipment for firefighters** Face mask, protective gloves and safety helmet. Self contained breathing apparatus and full protective clothing must be worn in case of fire.

## SECTION 6: Accidental release measures

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

**Personal precautions** For personal protection, see section 8. Eliminate all sources of ignition.

### 6.2. Environmental precautions

**Environmental precautions** Do not discharge into drains, water courses or onto the ground. Contain the spillage using bunding

### 6.3. Methods and material for containment and cleaning up

**Methods for cleaning up** Absorb into dry earth or sand. Transfer to a closable, labelled salvage container for disposal by an appropriate method

### 6.4. Reference to other sections

**Reference to other sections** The product contains a substance which is hazardous to aquatic organisms and which may cause long term adverse effects in the aquatic environment. See section 12 as well. For waste disposal, see section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

**Usage precautions** Avoid spilling, skin and eye contact. Avoid contact with skin and eyes. Contaminated clothing and shoes must be discarded. Ensure there is sufficient ventilation of the area

### 7.2. Conditions for safe storage, including any incompatibilities

**Storage precautions** Store in cool, well ventilated area. Keep container tightly closed.

**Storage class** Chemical storage. Corrosive storage.

### 7.3. Specific end use(s)

**Specific end use(s)** The identified uses for this product are detailed in Section 1.2.

## SECTION 8: Exposure Controls/personal protection

### 8.1. Control parameters

**Ingredient comments** WEL = Workplace Exposure Limits No exposure limit value known for the mixture

### 8.2. Exposure controls

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### Protective equipment



### Appropriate engineering controls

Provide adequate ventilation. Avoid inhalation of vapours. Observe any occupational exposure limits for the product or ingredients.

### Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Chemical splash goggles or face shield.

### Hand protection

Use suitable protective gloves if risk of skin contact. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

### Other skin and body protection

Wear appropriate clothing to prevent any possibility of skin contact.

### Hygiene measures

DO NOT SMOKE IN WORK AREA! Wash hands at the end of each work shift and before eating, smoking and using the toilet. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink or smoke.

### Respiratory protection

No specific recommendations. Respiratory protection may be required if excessive airborne contamination occurs.

## SECTION 9: Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Odour	Amine.
Odour threshold	Not available.
pH	pH (concentrated solution): 11
Melting point	Not available.
Initial boiling point and range	175°C @
Flash point	>70°C
Evaporation rate	Not available.
Upper/lower flammability or explosive limits	Not applicable.
Vapour pressure	0.08 mm Hg @ °C
Relative density	0.955 @ °C
Solubility(ies)	Not available. Insoluble in water.
Partition coefficient	No data available
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	30 mPa s @ 20°C
Explosive properties	Not available.

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**Oxidising properties** Not available.

### 9.2. Other information

**Other information** Not relevant.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

**Reactivity** There are no known reactivity hazards associated with this product.

### 10.2. Chemical stability

**Stability** Stable at normal ambient temperatures and when used as recommended.

### 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions** Not available.

### 10.4. Conditions to avoid

**Conditions to avoid** Heat, flames and sparks

### 10.5. Incompatible materials

**Materials to avoid** Reactive metals (e.g. sodium, calcium, zinc etc.). Materials reactive with hydroxyl compounds. Organic acids (i.e. acetic acid, citric acid etc.). Mineral acids. Sodium hypochlorite. Product slowly corrodes copper, aluminum, zinc and galvanized surfaces. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion. Oxidizing agents.

### 10.6. Hazardous decomposition products

**Hazardous decomposition products** Nitric acid (HNO<sub>3</sub>). Ammonia. Nitrogen oxides (NO<sub>x</sub>) Nitrogen oxide can react with water vapors to form corrosive nitric acid Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Aldehydes. Flammable hydrocarbon fragments

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Acute toxicity - oral

**Notes (oral LD<sub>50</sub>)** No data is available on the product itself

**ATE oral (mg/kg)** 622.81811283

#### Acute toxicity - dermal

**ATE dermal (mg/kg)** 2,558.13953488

#### Acute toxicity - inhalation

**ATE inhalation (gases ppm)** 14,062.5

**ATE inhalation (vapours mg/l)** 34.375

**ATE inhalation (dusts/mists mg/l)** 4.6875

#### Serious eye damage/irritation

**Serious eye damage/irritation** Not available.

#### Skin sensitisation

**Skin sensitisation** Dermal sensitization to this product or components has been seen in some humans. Components of this product have been found to cause mild skin sensitization in guinea pigs.

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### Germ cell mutagenicity

**Genotoxicity - in vitro** The product or a component may be mutagenic, the data is inconclusive.

### Carcinogenicity

**Carcinogenicity** Not available

### Reproductive toxicity

**Reproductive toxicity - fertility** No data is available on the product itself

### Specific target organ toxicity - single exposure

**STOT - single exposure** Eye disease. Skin disorders and allergies. Neurological disorders.

**Target organs** Skin Eyes Central nervous system

### Specific target organ toxicity - repeated exposure

**STOT - repeated exposure** Rats exposed orally to 800 mg/kg benzyl alcohol for thirteen weeks exhibited CNS depression and histopathological changes in the brain, thymus and skeletal muscles. The No Observed Adversed Effect Level (NOAL) was 400 mg/kg. No evidence of carcinogenicity was seen in a two-year study with rats and mice. This product contains listed carcinogen(s) according to Directive 67/548/EEC, IARC, ACGIH and/or NTP in concentrations of 0.1 percent of greater. May cause allergic skin reaction.

### Aspiration hazard

**Aspiration hazard** no data available

### **Inhalation**

Can cause severe eye, skin and respiratory tract burns. May cause central nervous system effects, such as headache, nausea, dizziness, confusion, breathing difficulties. Severe cases of overexposure can result in respiratory failure.

### **Ingestion**

If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach. Harmful if swallowed.

### **Skin contact**

Causes skin burns. If absorbed through the skin, may cause central nervous system effects, such as headache, nausea, dizziness, confusion, breathing difficulties. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Harmful in contact with skin.

### **Eye contact**

Corneal edema may give rise to a perception of "blue haze" or "fog" around lights. Exposed individuals may see rings around bright lights. This effect is temporary and has no known residual effect. Product vapor can cause glaucopsia (corneal edema) when absorbed into the tissue of the eye from the atmosphere. Causes eye burns. May cause blindness.

## SECTION 12: Ecological Information

### 12.1. Toxicity

**Toxicity** No data is available on the product itself

### 12.2. Persistence and degradability

**Persistence and degradability** No data available.

### 12.3. Bioaccumulative potential

**Bioaccumulative potential** No data is available on the product itself.

### **Partition coefficient**

No data available

### 12.4. Mobility in soil

**Mobility** Not available

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### 12.5. Results of PBT and vPvB assessment

**Results of PBT and vPvB assessment**      Not available

### 12.6. Other adverse effects

**Other adverse effects**      Not available.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

**General information**      The product should not be allowed to enter drains, water courses or the soil; dispose of this material and its container in a safe way. Contact supplier if guidance is required.

**Disposal methods**      Dispose of container and unused contents in accordance with federal, state, and local requirements.

## SECTION 14: Transport information

**General**      No other information known.

### 14.1. UN number

**UN No. (ADR/RID)**      2735

**UN No. (IMDG)**      2735

**UN No. (ICAO)**      2735

### 14.2. UN proper shipping name

**Proper shipping name (ADR/RID)**      AMINES, LIQUID, CORROSIVE, N.O.S. (ISOPHORONEDIAMINE, 4-NONYLPHENOL, Branched)

**Proper shipping name (IMDG)**      AMINES, LIQUID, CORROSIVE, N.O.S. (ISOPHORONEDIAMINE, 4-NONYLPHENOL, Branched)

**Proper shipping name (ICAO)**      AMINES, LIQUID, CORROSIVE, N.O.S. (ISOPHORONEDIAMINE, 4-NONYLPHENOL, Branched)

**Proper shipping name (ADN)**      AMINES, LIQUID, CORROSIVE, N.O.S. (ISOPHORONEDIAMINE, 4-NONYLPHENOL, Branched)

### 14.3. Transport hazard class(es)

**ADR/RID class**      8

**ADR/RID label**      8

**IMDG class**      8

**ICAO class/division**      8

### Transport labels



### 14.4. Packing group

**ADR/RID packing group**      III

**IMDG packing group**      III

**ICAO packing group**      III



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### 14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant



### 14.6. Special precautions for user

EmS	F-A, S-B
Emergency Action Code	2X
Hazard Identification Number (ADR/RID)	80
Tunnel restriction code	(E)

### 14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

#### SECTION 15: Regulatory information

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

<b>National regulations</b>	The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716).
<b>EU legislation</b>	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).
<b>Guidance</b>	Workplace Exposure Limits EH40. CHIP for everyone HSG(108). Approved Classification and Labelling Guide (Sixth edition) L131.

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

#### SECTION 16: Other information

<b>Revision date</b>	16/09/2016
<b>Revision</b>	2
<b>SDS number</b>	21337
<b>Risk phrases in full</b>	R20/21/22 Harmful by inhalation, in contact with skin and if swallowed. R20/22 Harmful by inhalation and if swallowed. R21/22 Harmful in contact with skin and if swallowed. R22 Harmful if swallowed. R34 Causes burns. R43 May cause sensitisation by skin contact. R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R62 Possible risk of impaired fertility. R63 Possible risk of harm to the unborn child. R65 Harmful: may cause lung damage if swallowed.

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### Hazard statements in full

H302 Harmful if swallowed.

H304 May be fatal if swallowed and enters airways.

H312 Harmful in contact with skin.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H332 Harmful if inhaled.

H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

H400 Very toxic to aquatic life.

H412 Harmful to aquatic life with long lasting effects.