



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

Product number FLOW_H

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

Uses advised against Use only for intended applications.

1.3. Details of the supplier of the safety data sheet

Manufacturer Altro Ltd
 Unit 3 Station Rd Industrial Estate
 Maiden Newton
 Dorchester
 Dorset, United Kingdom
 DT2 0AE
 Tel: +44(0)1300320620
 Fax: 01300321122
 sds@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

Environmental hazards Aquatic Chronic 3 - H412

2.2. Label elements

Hazard pictograms



Signal word Danger

Hazard statements H302+H332 Harmful if swallowed or if inhaled.
 H314 Causes severe skin burns and eye damage.
 H317 May cause an allergic skin reaction.
 H412 Harmful to aquatic life with long lasting effects.

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

Precautionary statements	<p>P271 Use only outdoors or in a well-ventilated area.</p> <p>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>P301+P312 IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.</p> <p>P302+P352 IF ON SKIN: Wash with plenty of water.</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P501 Dispose of contents/ container in accordance with national regulations.</p>
Contains	<p>BENZYL ALCOHOL, Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia, Reaction product of m-phenylenebis(methylamine) and 4,4'-Isopropylidenediphenol, ISOPHORONEDIAMINE, Formaldehyde, oligomeric reaction products with 3,3'-iminodi(propylamine)</p>
Supplementary precautionary statements	<p>P260 Do not breathe vapour/ spray.</p> <p>P261 Avoid breathing vapour/ spray.</p> <p>P264 Wash contaminated skin thoroughly after handling.</p> <p>P270 Do not eat, drink or smoke when using this product.</p> <p>P272 Contaminated work clothing should not be allowed out of the workplace.</p> <p>P273 Avoid release to the environment.</p> <p>P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</p> <p>P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P310 Immediately call a POISON CENTER/ doctor.</p> <p>P321 Specific treatment (see medical advice on this label).</p> <p>P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.</p> <p>P362+P364 Take off contaminated clothing and wash it before reuse.</p> <p>P363 Wash contaminated clothing before reuse.</p> <p>P405 Store locked up.</p>

2.3. Other hazards

SECTION 3: Composition/information on ingredients

3.2. Mixtures

BENZYL ALCOHOL		10-30%
CAS number: 100-51-6	EC number: 202-859-9	REACH registration number: 01-2119492630-38-XXXX
Classification		
Acute Tox. 4 - H302		
Acute Tox. 4 - H332		
Eye Irrit. 2 - H319		
Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia		10-30%
CAS number: 9046-10-0	REACH registration number: 01-2119557899-12-XXXX	
Classification		
Skin Corr. 1C - H314		
Eye Dam. 1 - H318		
Aquatic Chronic 3 - H412		

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

Reaction product of m-phenylenebis(methylamine) and 4,4'-Isopropylidenediphenol 10-30%		
CAS number: 113930-69-1		
Classification Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Aquatic Chronic 2 - H411		
ISOPHORONEDIAMINE 10-30%		
CAS number: 2855-13-2	EC number: 220-666-8	REACH registration number: 01-2119514687-32-XXXX
Classification Acute Tox. 4 - H302 Acute Tox. 4 - H312 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Aquatic Chronic 3 - H412		
Formaldehyde, oligomeric reaction products with 3,3'-iminodi(propylamine) 1-5%		
CAS number: 161278-35-9		
Classification Acute Tox. 4 - H302 Acute Tox. 4 - H312 Skin Corr. 1B - H314 Skin Sens. 1 - H317		
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT; KEROSENE - UNSPECIFIED 1-5%		
CAS number: 64742-47-8	EC number: 265-149-8	
Classification Asp. Tox. 1 - H304		
Calcium Nitrate <1%		
CAS number: 10124-37-5	EC number: 233-332-1	
Classification Ox. Liq. 2 - H272 Eye Irrit. 2 - H319		

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

ETHANOL	<1%
CAS number: 64-17-5	EC number: 200-578-6
Classification	
Flam. Liq. 2 - H225	

The full text for all hazard statements is displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information	If in doubt, get medical attention promptly.
Inhalation	Remove person to fresh air and keep comfortable for breathing. If in doubt, get medical attention promptly.
Ingestion	Give plenty of water to drink. Remove person to fresh air and keep comfortable for breathing. Get medical attention immediately.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if symptoms are severe or persist.
Eye contact	Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes and get medical attention.

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

General information	Treat symptomatically.
----------------------------	------------------------

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

Notes for the doctor	No specific recommendations.
-----------------------------	------------------------------

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Carbon dioxide or dry powder. Water spray, fog or mist.
-------------------------------------	---

5.2. Special hazards arising from the substance or mixture

Specific hazards	Thermal decomposition or combustion products may include the following substances: Toxic gases or vapours.
-------------------------	--

5.3. Advice for firefighters

Protective actions during firefighting	Do not use water jet as an extinguisher, as this will spread the fire. Control run-off water by containing and keeping it out of sewers and watercourses.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Wear protective clothing and gloves.
-----------------------------	--------------------------------------

6.2. Environmental precautions

Environmental precautions	Do not discharge into drains or watercourses or onto the ground.
----------------------------------	--

6.3. Methods and material for containment and cleaning up

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

Methods for cleaning up Absorb spillage with non-combustible, absorbent material. Absorb in vermiculite, dry sand or earth and place into containers. Dispose of contents/container in accordance with local regulations. Provide adequate ventilation.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Do not handle until all safety precautions have been read and understood. Keep container tightly sealed when not in use. Provide adequate ventilation. Avoid breathing gas, fume, vapours or spray.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Keep only in the original container. Store in a cool dry place. Protect from frost.

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

Occupational exposure limits

ETHANOL

Long-term exposure limit (8-hour TWA): WEL 1000 ppm 1920 mg/m³

Short-term exposure limit (15-minute): WEL

WEL = Workplace Exposure Limit.

Ingredient comments No exposure limit value known for the mixture

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

Eye/face protection

Wear eye protection.

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

Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. Frequent changes are recommended. Only use chemical-protective gloves with CE-labelling of category III. To minimise the wetness in the glove due to perspiration changing of gloves during a shift is required. Check the permeability prior to each renewed use of the glove. Preventive skin protection by use of skin-protecting agents is recommended. Material of gloves: Nitrile rubber, NBR; Fluorocarbon rubber (Viton); Recommended thickness of the material: ≥ 0.5 mm. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application; Penetration time of glove: The exact breakthrough time has to be found out by the manufacturer of the protective gloves and has to be observed. As protection from splashes gloves made of the following materials are suitable: PVC gloves. Not suitable are gloves made of the following materials: Leather gloves, Strong gloves.
Other skin and body protection	Avoid contact with skin. Wear appropriate clothing to prevent any possibility of liquid contact and repeated or prolonged vapour contact.
Hygiene measures	Promptly remove any clothing that becomes contaminated. Wash hands thoroughly after handling. When using do not eat, drink or smoke.
Respiratory protection	Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Combination filter, type A2/P2.
Environmental exposure controls	Keep container tightly sealed when not in use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Colourless to pale yellow liquid.
Odour	Amine.
pH	No specific test data are available.
Flash point	~ 120°C
Relative density	~ 1.03g/CC
Auto-ignition temperature	No information available.
Viscosity	No specific test data are available.

9.2. Other information

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	None known.
---	-------------

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

10.4. Conditions to avoid

Conditions to avoid Avoid exposure to high temperatures or direct sunlight. Avoid freezing.

10.5. Incompatible materials

Materials to avoid None known.

10.6. Hazardous decomposition products

Hazardous decomposition products None known.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects Information given is based on data of the components and of similar products.

Acute toxicity - oral

ATE oral (mg/kg) 1,108.39

Acute toxicity - dermal

ATE dermal (mg/kg) 6,551.28

Acute toxicity - inhalation

ATE inhalation (gases ppm) 15,889.83

ATE inhalation (vapours mg/l) 38.84

ATE inhalation (dusts/mists mg/l) 5.3

SECTION 12: Ecological information

12.1. Toxicity

Toxicity Toxic to aquatic organisms

12.2. Persistence and degradability

Persistence and degradability No data available.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

12.4. Mobility in soil

Mobility Do not allow to escape to waterways, waste water or soil.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment Not available

12.6. Other adverse effects

Other adverse effects Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water. Do not allow product to reach ground water, water bodies or sewage system. Danger to drinking water if even small quantities leak into soil.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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

General information Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. When handling waste, the safety precautions applying to handling of the product should be considered.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID)	2735
UN No. (IMDG)	2735
UN No. (ICAO)	2735
UN No. (ADN)	2735

14.2. UN proper shipping name

Proper shipping name (ADR/RID)	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS Reaction product of m-phenylenebis(methylamine) and 4,4'- Isopropylidenediphenol, ISOPHORONEDIAMINE)
Proper shipping name (IMDG)	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS Reaction product of m-phenylenebis(methylamine) and 4,4'- Isopropylidenediphenol, ISOPHORONEDIAMINE)
Proper shipping name (ICAO)	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS Reaction product of m-phenylenebis(methylamine) and 4,4'- Isopropylidenediphenol, ISOPHORONEDIAMINE)
Proper shipping name (ADN)	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS Reaction product of m-phenylenebis(methylamine) and 4,4'- Isopropylidenediphenol, ISOPHORONEDIAMINE)

14.3. Transport hazard class(es)

ADR/RID class	8
ADR/RID classification code	C7
ADR/RID label	8
IMDG class	8
ICAO class/division	8
ADN class	8

Transport labels



14.4. Packing group

ADR/RID packing group	II
IMDG packing group	II
ICAO packing group	II
ADN packing group	II

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

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

IMDG Code segregation group	18. Alkalis
EmS	F-A, S-B
ADR transport category	2
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

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 legislation 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).

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet	ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road. CAS: Chemical Abstracts Service. GHS: Globally Harmonized System. REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
Issued by	Altro Resins Ltd
Revision date	01/12/2020
Revision	3
Supersedes date	16/09/2016
SDS number	21337
Hazard statements in full	H225 Highly flammable liquid and vapour. H272 May intensify fire; oxidiser. 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. H319 Causes serious eye irritation. H332 Harmful if inhaled. H411 Toxic to aquatic life with long lasting effects. H412 Harmful to aquatic life with long lasting effects.

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

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.