



SAFETY DATA SHEET

Altro Flexiflow acoustic hardener

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

1.1. Product identifier

Product name Altro Flexiflow acoustic hardener

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

Identified uses PU Hardeners- Industrial flooring, hardener component for polyurethane system

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

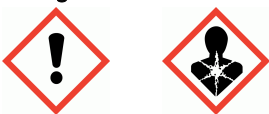
Health hazards Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Resp. Sens. 1 - H334 Skin Sens. 1 - H317 Carc. 2 - H351 Acute Tox. 4 - H332 STOT SE 3 - H335 STOT RE 2 - H373

Environmental hazards Not Classified

Classification (67/548/EEC or 1999/45/EC) Xn;R20,R48/20. Carc. Cat. 3;R40. R42/43. Xi;R36/37/38.

2.2. Label elements

Pictogram



Signal word

Danger

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Hazard statements	<p>H315 Causes skin irritation.</p> <p>H317 May cause an allergic skin reaction.</p> <p>H319 Causes serious eye irritation.</p> <p>H332 Harmful if inhaled.</p> <p>H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.</p> <p>H335 May cause respiratory irritation.</p> <p>H351 Suspected of causing cancer.</p> <p>H373 May cause damage to organs through prolonged or repeated exposure.</p>
Precautionary statements	<p>EUH204 Contains isocyanates. May produce an allergic reaction.</p> <p>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>P281 Use personal protective equipment as required.</p> <p>P284 [In case of inadequate ventilation] wear respiratory protection.</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>P308+P313 IF exposed or concerned: Get medical advice/ attention.</p> <p>P313 Get medical advice/ attention.</p> <p>P314 Get medical advice/ attention if you feel unwell.</p> <p>P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/ doctor.</p> <p>P501 Dispose of contents/ container to ...</p>
Contains	METHYLENEDIPHENYL DIISOCYANATE, DIPHENYLMETHANEDIISOCYANATE -Isomers & homologues
Supplementary precautionary statements	<p>P201 Obtain special instructions before use.</p> <p>P202 Do not handle until all safety precautions have been read and understood.</p> <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>P271 Use only outdoors or in a well-ventilated area.</p> <p>P272 Contaminated work clothing should not be allowed out of the workplace.</p> <p>P302+P352 IF ON SKIN: Wash with plenty of water.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P304+P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.</p> <p>P312 Call a POISON CENTER/ doctor if you feel unwell.</p> <p>P321 Specific treatment (see medical advice on this label).</p> <p>P332+P313 If skin irritation occurs: Get medical advice/ attention.</p> <p>P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.</p> <p>P337 If eye irritation persists:</p> <p>P362 Take off contaminated clothing.</p> <p>P363 Wash contaminated clothing before reuse.</p> <p>P403+P233 Store in a well-ventilated place. Keep container tightly closed.</p> <p>P405 Store locked up.</p>

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

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METHYLENEDIPHENYL DIISOCYANATE	60-100%
CAS number: 26447-40-5	EC number: 247-714-0
Classification Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Resp. Sens. 1 - H334 Skin Sens. 1 - H317 Carc. 2 - H351 STOT SE 3 - H335 STOT RE 2 - H373	Classification (67/548/EEC or 1999/45/EC) Carc. Cat. 3;R40 Xn;R20,R48/20 Xi;R36/37/38 R42/43
DIPHENYLMETHANEDIISOCYANATE -Isomers & homologues	30-60%
CAS number: 9016-87-9	
Classification Not Classified	Classification (67/548/EEC or 1999/45/EC) Xn;R20. Xi;R36/37/38. R42.

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

Inhalation	Remove casualty from exposure ensuring one's own safety whilst doing so. Consult a doctor.
Ingestion	Wash out mouth with water. If conscious, give half a litre of water to drink immediately. Consult a doctor.
Skin contact	Wash immediately with plenty of soap and water
Eye contact	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

General information	Immediate effects can be expected after short-term exposure.
Inhalation	There may be irritation of the throat with a feeling of tightness in the chest Exposure may cause coughing or wheezing
Ingestion	There may be redness and soreness of the mouth and throat
Skin contact	There may be irritation and redness at the site of contact.
Eye contact	There may be irritation and redness. The eyes may water profusely.

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

Notes for the doctor	No recommendation given, but first aid may still be required in case of accidental exposure, inhalation or ingestion of this chemical. If in doubt, GET MEDICAL ATTENTION PROMPTLY!
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Dry chemical powder. Carbon dioxide. Alcohol resistant foam. Water spray.

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5.2. Special hazards arising from the substance or mixture

Specific hazards In combustion emits toxic fumes of carbon dioxide / carbon monoxide. In combustion emits toxic fumes of hydrogen cyanide. In combustion emits toxic fumes of nitrogen oxides.

5.3. Advice for firefighters

Protective actions during firefighting Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Refer to section 8 of SDS for personal protection details. Ventilate the area to dispel residual vapours.

6.2. Environmental precautions

Environmental precautions Do not discharge into drains or rivers. Do not discharge into subsoil/soil.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Take up with absorbent material (eg. sand, Kieselguhr, universal binder). Transfer to a closable, labelled salvage container for disposal by an appropriate method.

6.4. Reference to other sections

Reference to other sections Refer to section 8 of SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Ensure there is sufficient ventilation of the area. Avoid the formation or spread of mists in the air.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in cool, well ventilated area. Avoid contact with water or humidity. Keep container tightly closed. If moisture enters isocyanate containers, CO₂ forms and pressure builds up. Protect from temperatures below 20°C and above 35°C.

7.3. Specific end use(s)

Specific end use(s) No data available.

Usage description Must only be kept in original packaging.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

METHYLENEDIPHENYL DIISOCYANATE

Long-term exposure limit (8-hour TWA): WEL 0.02 mg/m³(Sen)

Short-term exposure limit (15-minute): WEL 0.07 mg/m³(Sen)

DIPHENYLMETHANEDIISOCYANATE -Isomers & homologues

Long-term exposure limit (8-hour TWA): WEL 0.02 mg/m³(Sen)

Short-term exposure limit (15-minute): WEL 0.07 mg/m³(Sen)

WEL = Workplace Exposure Limit

Ingredient comments WEL = Workplace Exposure Limits

8.2. Exposure controls

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Protective equipment



Appropriate engineering controls

Ensure there is sufficient ventilation of the area. The floor of the storage room must be impermeable to prevent the escape of liquids.

Eye/face protection

Safety glasses with side-shields.

Hand protection

Nitrile gloves. Butyl gloves. PVC gloves.

Other skin and body protection

Wear chemical protective suit.

Respiratory protection

Respiratory protection in case of vapour/aerosol release: Combination filter for gases/ vapours of organic compounds and solid liquid particles. (f.e. EN 14387 Type A-P2)

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Yellow-brown liquid
Relative density	1.2 @ 20°C
Solubility(ies)	Soluble in most organic solvents
Viscosity	Non-viscous @ °C

9.2. Other information

Other information	Not available.
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SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	Stable under recommended transport or storage conditions.
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10.2. Chemical stability

Stability	Stable under normal conditions
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Hazardous reactions will not occur under normal transport or storage conditions. Decomposition may occur on exposure to conditions or materials listed below.
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10.4. Conditions to avoid

Conditions to avoid	<15°C
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10.5. Incompatible materials

Materials to avoid	Acids. Water. Alcohols. Amines. Bases.
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10.6. Hazardous decomposition products

Hazardous decomposition products	In combustion emits toxic fumes.
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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

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Acute toxicity oral (LD₅₀ mg/kg) 2,000.0

Species Rat

Notes (oral LD₅₀) Information on: Diphenylmethane-4,4'-diisocyanate (MDI)
Experimental/calculated data:
LD50 rat (oral): > 2,000 mg/kg (Directive 84/449/EEC, B.1) Of moderate toxicity after short-term inhalation. Virtually nontoxic after a single skin contact. Virtually nontoxic after a single ingestion.

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 9,400.0

Species Rabbit

Notes (dermal LD₅₀) Information on: Diphenylmethane-4,4'-diisocyanate (MDI)
Experimental/calculated data:
LD50 rabbit (dermal): > 9,400 mg/kg Of moderate toxicity after short-term inhalation. Virtually nontoxic after a single skin contact. Virtually nontoxic after a single ingestion.

Skin corrosion/irritation

Animal data

Information on: Diphenylmethane-4,4'-diisocyanate (MDI)
Assessment of irritating effects: Irritating to eyes and skin. Information on: Diphenylmethane-4,4'-diisocyanate (MDI)
Experimental/calculated data:
Skin corrosion/irritation rabbit: Irritant. (OECD Guideline 404) Information on: Diphenylmethane-4,4'-diisocyanate (MDI)
Experimental/calculated data:
Serious eye damage/irritation rabbit: non-irritant (OECD Guideline 405)
The European Union (EU) has classified this substance with 'Irritating to eyes'.(R36).

Respiratory sensitisation

Respiratory sensitisation guinea pig: respiratory sensitizing

Skin sensitisation

Skin sensitisation Information on: Diphenylmethane-4,4'-diisocyanate (MDI)
Experimental/calculated data:
Buehler test guinea pig: skin sensitizing The substance may cause sensitization of the respiratory tract. Sensitization after skin contact possible. Studies in animals suggest that dermal exposure may lead to pulmonary sensitization. However, the relevance of this result for humans is unclear.

Germ cell mutagenicity

Genotoxicity - in vivo Assessment of mutagenicity:
The chemical structure does not suggest such an effect.

Carcinogenicity

Carcinogenicity Assessment of carcinogenicity:
A carcinogenic effect cannot safely be ruled out.
Information on: Diphenylmethane-4,4'-diisocyanate (MDI)
Assessment of carcinogenicity: Indication of possible carcinogenic effect in animal tests. However, the relevance of this result for humans is unclear.

Reproductive toxicity

Reproductive toxicity - fertility Assessment of reproduction toxicity:
The chemical structure does not suggest such an effect.

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Reproductive toxicity - development Assessment of teratogenicity:
The chemical structure does not suggest such an effect. The substance did not cause malformations in animal studies; however, toxicity to development was observed at high doses that were toxic to the parental animals.

Specific target organ toxicity - single exposure

STOT - single exposure Causes temporary irritation of the respiratory tract.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Repeated inhalation exposure may affect certain organs. Repeated exposure to the substance by dermal administration leads to effects similar to those found after single exposure. Repeated exposure to the substance by oral administration leads to effects similar to those found after single exposure.

Aspiration hazard

Aspiration hazard Not anticipated to present an aspiration hazard, based on chemical structure.

Inhalation There may be irritation of the throat with a feeling of tightness in the chest. Exposure may cause coughing or wheezing.

Ingestion There may be soreness and redness of the mouth and throat.

Skin contact There may be irritation and redness at the site of contact.

Eye contact There may be irritation and redness. The eyes may water profusely.

SECTION 12: Ecological Information

12.1. Toxicity

Toxicity Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to aquatic organisms.
Information on: Diphenylmethane-4,4'-diisocyanate (MDI)
Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations. There is a high probability that the product is not chronically harmful to aquatic organisms.
The product may hydrolyse. The test result maybe partially due to degradation products. The product has not been tested. The statement has been derived from products of a similar structure or composition.

Acute toxicity - fish LC₅₀, 96 hours: > 1,000 mg/l, Fish

Acute toxicity - aquatic invertebrates Information on: Diphenylmethane-4,4'-diisocyanate (MDI)
Aquatic invertebrates:
EC50 (24 h) > 1,000 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)

Acute toxicity - aquatic plants , 72 hours: 1640 mg/l, Scenedesmus subspicatus

Acute toxicity - microorganisms , 3 hours: > 100 mg/l, Activated sludge

12.2. Persistence and degradability

Persistence and degradability Hydrolyzes to form water-insoluble compounds. Experience shows this product to be inert and non-degradable. Poorly biodegradable. The product is unstable in water. The elimination data also refer to products of hydrolysis.

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12.3. Bioaccumulative potential

Bioaccumulative potential Does not significantly accumulate in organisms. BCF: 200, Cyprinus carpio (Common carp)

12.4. Mobility in soil

Mobility Adsorption to solid soil phase is not expected

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment According to Annex XIII of Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria.

12.6. Other adverse effects

Other adverse effects The product does not contain substances that are listed in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal methods Residues and empty containers should be taken care of as hazardous waste according to local and national provisions.

Waste class Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

SECTION 14: Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

Transport labels

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

Not applicable.

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

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

National regulations	The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716).
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), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.
Guidance	Workplace Exposure Limits EH40. CHIP for everyone HSG(108). Safety Data Sheets for Substances and Preparations. Approved Classification and Labelling Guide (Sixth edition) L131.

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out for the substance or the Mixture by the supplier.

SECTION 16: Other information

Revision date	12/09/2016
Revision	2
SDS number	21298
Risk phrases in full	R20 Harmful by inhalation. R36/37/38 Irritating to eyes, respiratory system and skin. R40 Limited evidence of a carcinogenic effect. R42 May cause sensitisation by inhalation. R42/43 May cause sensitisation by inhalation and skin contact. R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
Hazard statements in full	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. 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. H373 May cause damage to organs through prolonged or repeated exposure.