



Safety data sheet according to 1907/2006/EC, Article 31

Printing date 05.09.2013

Version number 5

Revision: 05.09.2013

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

- **1.1 Product identifier**
- **Trade name:** HA 110 Hardener
- **Article number:** 1899999-11
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the preparation**
Metal surface treatment
Hardening agent/ Curing agent
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Alfa Laval Tumba AB
Hans Stahles väg 7
S-147 80 TUMBA
SWEDEN
sds.question@alfalaval.com
- **Further information obtainable from:** sds.question@alfalaval.com
- **1.4 Emergency telephone number:**
For immediate, life-threatening emergencies, call 999

For health advice and information (24h) dial 111 (NHS direct)

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
Xn; Harmful
R20/21: Harmful by inhalation and in contact with skin.
.....
Xn; Sensitising
R42/43: May cause sensitisation by inhalation and skin contact.
.....
Xi; Irritant
R37: Irritating to respiratory system.
.....
R10-52/53: Flammable. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- **Information concerning particular hazards for human and environment:**
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- **Classification system:**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

(Contd. on page 2)

GB



Safety data sheet according to 1907/2006/EC, Article 31

Printing date 05.09.2013

Version number 5

Revision: 05.09.2013

Trade name: HA 110 Hardener

(Contd. of page 1)

2.2 Label elements**Labelling according to EU guidelines:**

The product has been marked in accordance with EU Directives / respective national laws.

Code letter and hazard designation of product:

Xn Harmful

Hazard-determining components of labelling:

Isocyanate HDI-prepolymer
hexamethylene-di-isocyanate
Xylol, Isomerengemisch (wenn Flammpunkt < 21 °C)

Risk phrases:

10 Flammable.
20/21 Harmful by inhalation and in contact with skin.
37 Irritating to respiratory system.
42/43 May cause sensitisation by inhalation and skin contact.
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases:

23 Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).
24/25 Avoid contact with skin and eyes.
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
61 Avoid release to the environment. Refer to special instructions/safety data sheets.

Special labelling of certain preparations:

Contains isocyanates. See information supplied by the manufacturer

2.3 Other hazards**Results of PBT and vPvB assessment**

- PBT:** Not applicable.
- vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:

(Contd. on page 3)



Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 05.09.2013

Version number 5

Revision: 05.09.2013

Trade name: HA 110 Hardener

(Contd. of page 2)

CAS: 28182-81-2 NLP: 500-060-2	Isocyanate HDI-prepolymer Xn R20; Xn R42/43; Xi R37 R10 Flam. Liq. 3, H226; Resp. Sens. 1, H334; Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335	50-75%
CAS: 108-65-6 EINECS: 203-603-9	2-methoxy-1-methylethyl acetate R10 Flam. Liq. 3, H226	15-20%
CAS: 123-86-4 EINECS: 204-658-1	n-butyl acetate R10-66-67 Flam. Liq. 3, H226; STOT SE 3, H336	<15%
CAS: 1330-20-7	xylene Xn R20/21; Xi R38; F R11 Flam. Liq. 2, H225; Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315	10-12.5%
CAS: 64742-95-6 EINECS: 265-199-0	Solvent naphtha (petroleum), light arom. Xn R65; Xi R37; N R51/53 R10 Carc. Cat. 2 Flam. Liq. 3, H226; Asp. Tox. 1, H304; Aquatic Chronic 2, H411; Acute Tox. 4, H332; STOT SE 3, H335	2.5-10%
CAS: 100-41-4 EINECS: 202-849-4	ethylbenzene Xn R20; F R11 Flam. Liq. 2, H225; Acute Tox. 4, H332	1-3%
CAS: 822-06-0 EINECS: 212-485-8	hexamethylene-di-isocyanate T R23; Xn R42/43; Xi R36/37/38 Acute Tox. 3, H331; Resp. Sens. 1, H334; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	<0.5%

Additional information:

CAS: 64742-95-6 does not have to be classified R45 and R46 since it contains <0,1% benzene.
CAS: 64742-95-6 does not have to be classified R65/H304 since it has a high viscosity.
For the wording of the listed risk phrases refer to section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures**General information:**

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Take affected persons out into the fresh air.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

After inhalation: Supply fresh air and to be sure call for a doctor.

After skin contact:

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

(Contd. on page 4)



Safety data sheet according to 1907/2006/EC, Article 31

Printing date 05.09.2013

Version number 5

Revision: 05.09.2013

Trade name: HA 110 Hardener

(Contd. of page 3)

- **After eye contact:**
Rinse opened eye for several minutes under running water. Then consult a doctor.
Remove contact lenses, if present and easy to do. Continue rinsing.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.
- **4.2 Most important symptoms and effects, both acute and delayed**
Gastric or intestinal disorders
Nausea
Rough skin. May cause skin dryness and irritation.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** CO₂, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
Carbon monoxide and carbon dioxide
Nitrogen oxides (NO_x)
- **5.3 Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
- **Additional information** Cool endangered receptacles with water spray.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Do not breathe vapour.
Avoid contact with spilled material.
- **6.2 Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Send for recovery or disposal in suitable receptacles.
Ensure adequate ventilation.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.

(Contd. on page 5)



Safety data sheet according to 1907/2006/EC, Article 31

Printing date 05.09.2013

Version number 5

Revision: 05.09.2013

Trade name: HA 110 Hardener

See Section 13 for disposal information.

(Contd. of page 4)

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Keep receptacles tightly sealed.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
Avoid contact with skin and eyes.
When using do not eat, drink or smoke.
See Section 8 for information on personal protection equipment.
- **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Store in cool, dry conditions in well sealed receptacles.
- **Information about storage in one common storage facility:**
Do not store together with oxidizing and acidic materials.
Do not store together with alkalis (caustic solutions).
- **Further information about storage conditions:**
Store under lock and key and with access restricted to technical experts or their assistants only.
Protect from heat and direct sunlight.
- **7.3 Specific end use(s)**
Hardening agent/ Curing agent
Restricted to professional users.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.

- **8.1 Control parameters**

- **Ingredients with limit values that require monitoring at the workplace:**

108-65-6 2-methoxy-1-methylethyl acetate

WEL	Short-term value: 548 mg/m ³ , 100 ppm Long-term value: 274 mg/m ³ , 50 ppm Sk
-----	--

123-86-4 n-butyl acetate

WEL	Short-term value: 966 mg/m ³ , 200 ppm Long-term value: 724 mg/m ³ , 150 ppm
-----	---

1330-20-7 xylene

WEL	Short-term value: 441 mg/m ³ , 100 ppm Long-term value: 220 mg/m ³ , 50 ppm Sk, BMGV
-----	--

(Contd. on page 6)



Safety data sheet according to 1907/2006/EC, Article 31

Printing date 05.09.2013

Version number 5

Revision: 05.09.2013

Trade name: HA 110 Hardener

(Contd. of page 5)

100-41-4 ethylbenzene

WEL	Short-term value: 552 mg/m ³ , 125 ppm Long-term value: 441 mg/m ³ , 100 ppm Sk
-----	---

822-06-0 hexamethylene-di-isocyanate

WEL	Short-term value: 0.07 mg/m ³ Long-term value: 0.02 mg/m ³ Sen; as -NCO
-----	---

• DNELs

123-86-4 n-butyl acetate: Hazard via inhalation route: Long term exposure: 480 mg/ m³, Hazard assessment conclusion: DNEL.

1330-20-7 Xylene: Hazard via inhalation route: Long term exposure: 77 mg/m³, Hazard assessment conclusion: DNEL, Most sensitive endpoint: Repeated dose toxicity, Overall assessment factor: 3, Dose descriptor starting point: NOAEC.

108-65-6 2-methoxy-1-methylethyl acetate: Hazard via inhalation route: Long term exposure: 275 mg/ m³, Hazard assessment conclusion: DNEL, Most sensitive endpoint: Irritation (respiratory tract), Overall assessment factor: 6, Dose descriptor starting point: LOAEC.

100-41-4 Ethylbenzene: Hazard via inhalation route: Long term exposure: 77 mg/m³, Hazard assessment conclusion: DNEL, Most sensitive endpoint: Repeated dose toxicity, Overall assessment factor: 3, Dose descriptor starting point: NOAEC.

• PNECs

123-86-4 n-butyl acetate: Aqua (freshwater): 0,18 mg/L, Assessment factor: 100, Extrapolation method: Assessment factor.

1330-20-7 Xylene: Aqua (freshwater): 0,327 mg/L, Assessment factor: 1, Extrapolation method: Statistical extrapolation.

108-65-6 2-methoxy-1-methylethyl acetate: Aqua (freshwater): 0,635 mg/L, Assessment factor: 100, Extrapolation method: Assessment factor.

100-41-4 Ethylbenzene: Aqua (freshwater): 0,1 mg/L, Assessment factor: 10, Extrapolation method: Assessment factor.

• **Additional information:** The lists valid during the making were used as basis.

• 8.2 Exposure controls**• Personal protective equipment:****• General protective and hygienic measures:**

Ground/bond container and receiving equipment.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Use only in well-ventilated areas.

In case of insufficient ventilation, wear suitable respiratory equipment.

Ensure that washing facilities are available at the work place.

• Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

(Contd. on page 7)

GB



Safety data sheet according to 1907/2006/EC, Article 31

Printing date 05.09.2013

Version number 5

Revision: 05.09.2013

Trade name: HA 110 Hardener

(Contd. of page 6)

- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

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 material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Tightly sealed goggles

- **Body protection:** Protective work clothing

- **Limitation and supervision of exposure into the environment**

Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

Form:	Viscous
Colour:	Colourless
Odour:	Characteristic
Odour threshold:	Not determined.

- **pH-value:** Not determined.

- **Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.

- **Flash point:** 40 °C

- **Flammability (solid, gaseous):** Not applicable.

(Contd. on page 8)



Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 05.09.2013

Version number 5

Revision: 05.09.2013

Trade name: HA 110 Hardener

(Contd. of page 7)

· Ignition temperature:	
· Decomposition temperature:	Not determined.
· Self-igniting:	420 °C
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· Explosion limits:	
Lower:	0.8 Vol %
Upper:	8 Vol %
· Vapour pressure:	Not determined.
· Density at 20 °C:	1.06 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	60.5 %
· 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** Reacts with acids, alkalis and oxidizing agents.
- **10.4 Conditions to avoid**
High heat
Keep away from sources of ignition - No smoking.
- **10.5 Incompatible materials:**
Store away from oxidizing agents.
Do not store together with alkalis (caustic solutions).
Keep away from acids.
- **10.6 Hazardous decomposition products:** No further information, refer to section 5.

GB

(Contd. on page 9)



Safety data sheet according to 1907/2006/EC, Article 31

Printing date 05.09.2013

Version number 5

Revision: 05.09.2013

Trade name: HA 110 Hardener

(Contd. of page 8)

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity:

108-65-6 2-methoxy-1-methylethyl acetate

Oral	LD50	8532 mg/kg (rat)
Inhalative	LC50/4 h	35.7 mg/l (rat)

123-86-4 n-butyl acetate

Oral	LD50	13100 mg/kg (rat)
Dermal	LD50	>5000 mg/kg (rabbit)
Inhalative	LC50/4 h	>21.0 mg/l (rat)

1330-20-7 xylene

Oral	LD50	4300 mg/kg (rat)
Dermal	LD50	2000 mg/kg (rabbit)

64742-95-6 Solvent naphtha (petroleum), light arom.

Oral	LD50	>6800 mg/kg (rat)
Dermal	LD50	>3400 mg/kg (rab)
Inhalative	LC50/4 h	>10.2 mg/l (rat)

100-41-4 ethylbenzene

Oral	LD50	3500 mg/kg (rat)
Dermal	LD50	17800 mg/kg (rabbit)

822-06-0 hexamethylene-di-isocyanate

Oral	LD50	738 mg/kg (rat)
Dermal	LD50	593 mg/kg (rat)

Primary irritant effect:

- on the skin: No irritant effect.
- on the eye: Irritating effect.

Sensitization:

Sensitization possible through inhalation.
Sensitization possible through skin contact.

Other information (about experimental toxicology):

If the product is overheated, fumes and vapors may be irritating to the upper respiratory tract and lungs.

Additional toxicological information:

Inhalation of concentrated vapours as well as oral intake will lead to anaesthesia-like conditions and headache, dizziness, etc.

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Harmful
Irritant

- Repeated dose toxicity Repeated exposure may cause skin dryness or cracking.

GB

(Contd. on page 10)



Safety data sheet according to 1907/2006/EC, Article 31

Printing date 05.09.2013

Version number 5

Revision: 05.09.2013

Trade name: HA 110 Hardener

(Contd. of page 9)

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:**
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Harmful to fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
Harmful to aquatic organisms
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Hand over to hazardous waste disposers.
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **European waste catalogue**
The European Waste Catalogue (EWC) waste codes do not refer to product but to origin. The manufacturer is therefore unable to quote a waste code for products which are used in various industries. Any codes shown should be regarded as a recommendation to the user.

08 00 00	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
08 01 00	wastes from MFSU and removal of paint and varnish
08 01 11*	waste paint and varnish containing organic solvents or other dangerous substances

- **Uncleaned packaging:**
- **Recommendation:**
Packagings that may not be cleansed are to be disposed of in the same manner as the product.

-GB-

(Contd. on page 11)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 05.09.2013


Version number 5

Revision: 05.09.2013

Trade name: HA 110 Hardener

(Contd. of page 10)

SECTION 14: Transport information

<ul style="list-style-type: none"> · 14.1 UN-Number · ADR, IMDG, IATA 	UN1263	
<ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR · IMDG, IATA 	1263 PAINT RELATED MATERIAL (including paint thinning, drying, removing, or reducing compound) PAINT RELATED MATERIAL (including paint thinning, drying, removing, or reducing compound)	
<ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR, IMDG, IATA 	<div style="text-align: center;">  </div> <ul style="list-style-type: none"> · Class · Label 	3 Flammable liquids. 3
<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA 	III	
<ul style="list-style-type: none"> · 14.5 Environmental hazards: · Marine pollutant: 	No	
<ul style="list-style-type: none"> · 14.6 Special precautions for user · Danger code (Kemler): · EMS Number: 	Warning: Flammable liquids. 30 F-E,S-E	
<ul style="list-style-type: none"> · 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	Not applicable.	
<ul style="list-style-type: none"> · Transport/Additional information: 		
<ul style="list-style-type: none"> · ADR · Limited quantities (LQ) · Transport category · Tunnel restriction code 	5L 3 D/E	

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
 - EU regulation (EC) no 1272/2008 (CLP)
 - EC DIRECTIVE 2008/98/EC (waste)
 - EU Regulation (EC) no.1907/2006 (REACH)

(Contd. on page 12)



Safety data sheet according to 1907/2006/EC, Article 31

Printing date 05.09.2013

Version number 5

Revision: 05.09.2013

Trade name: HA 110 Hardener

(Contd. of page 11)

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

LIMITATION OF LIABILITY

This document is only intended to be used as guidance as regards the risks of which we are aware that are associated with the product. Every individual who works with the product or in close proximity of it must receive suitable training. Individuals who come into contact with the product must be capable of using their own judgement as regards conditions or methods for handling, storing and using the product. Alfa Laval is not liable for demands, losses or damage of any kind that arise from flaws or deficiencies in this document or from using, handling, storing or disposing of the product unless it can be proven that Alfa Laval has acted in a grossly negligent manner. Beyond what has been agreed upon and specified in writing with Alfa Laval in the individual case, Alfa Laval makes no promises or assumes any liability, including but not limited to implicit guarantees regarding marketability or appropriateness in terms of both the information provided in this document and the product to which the information refers.

· Relevant phrases

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
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.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.
R10	Flammable.
R11	Highly flammable.
R20	Harmful by inhalation.
R20/21	Harmful by inhalation and in contact with skin.
R23	Toxic by inhalation.
R36/37/38	Irritating to eyes, respiratory system and skin.
R37	Irritating to respiratory system.
R38	Irritating to skin.
R42/43	May cause sensitisation by inhalation and skin contact.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65	Harmful: may cause lung damage if swallowed.
R66	Repeated exposure may cause skin dryness or cracking.
R67	Vapours may cause drowsiness and dizziness.

· **Department issuing MSDS:** MACC -Materials & Chemistry Centre· *** Data compared to the previous version altered.**