

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

1.1. Product identifier

Product form : Mixture
Trade name : 1084
Type of product : Hardener (Crosslinker)

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

1.2.1. Relevant identified uses

Intended for general public
Main use category : Industrial use
Industrial/Professional use spec : Intended for general public
Industrial
Use of the substance/mixture : Laminating hardener, casting, injection, winding, infusion, gluing, foaming, coatings and sealants.

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

RESOLTECH
249 AVENUE GASTON IMBERT Zone Industrielle de Rousset
13790 ROUSSET - France
T +33 (0) 4 42 95 01 95 (8h-12h & 14h-18h) - F +33 (0) 4 42 95 01 98
fds@resoltech.com - www.resoltech.com

1.4. Emergency telephone number

Emergency number : ORFILA (FRANCE) : +33 (0)1 45 42 59 59 (24h/24, 7j/7)

Country	Organisation/Company	Address	Emergency number	Comment
United Kingdom	National Poisons Information Service Edinburgh Royal Infirmary of Edinburgh	Little France Crescent EH16 4SA Edinburgh	0344 892 0111	
United Kingdom	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER London	+44 20 7188 7188	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Acute toxicity (oral), Category 4 H302
Skin corrosion/irritation, Category 1B H314
Skin sensitisation, Category 1 H317
Specific target organ toxicity — Repeated exposure, Category 2 H373
Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



Signal word (CLP) : Danger
Hazardous ingredients : 4,4'-methylenebis(cyclohexylamine); 3-aminomethyl-3,5,5-trimethylcyclohexylamine
Hazard statements (CLP) : H302 - Harmful if swallowed.
H314 - Causes severe skin burns and eye damage.
H317 - May cause an allergic skin reaction.
H373 - May cause damage to organs through prolonged or repeated exposure.

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

Precautionary statements (CLP)

: P102 - Keep out of reach of children.
 P270 - Do not eat, drink or smoke when using this product.
 P271 - Use only outdoors or in a well-ventilated area.
 P273 - Avoid release to the environment.
 P280 - Wear protective gloves, protective clothing, eye protection.
 P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
 P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
4,4'-methylenebis(cyclohexylamine)	(CAS-No.) 1761-71-3 (EC-No.) 217-168-8 (REACH-no) 01-2119541673-38	60 - 100	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Skin Sens. 1, H317 STOT RE 2, H373
3-aminomethyl-3,5,5-trimethylcyclohexylamine	(CAS-No.) 2855-13-2 (EC-No.) 220-666-8 (EC Index-No.) 612-067-00-9 (REACH-no) 01-2119514687-32	10 - 50	Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Chronic 3, H412

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Assure fresh air breathing. Respiratory arrest: artificial respiration or oxygen. If unconscious place in recovery position and seek medical advice.
First-aid measures after skin contact	: Wash contaminated clothing before reuse. Take off contaminated clothes, wash skin with plenty of water or have a shower (during minimum 15 minutes) and if necessary take medical advice. If on skin and if skin irritation or rash occurs, seek medical advice and attention.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Continue to rinse eye with clean water for 20-30 minutes, retracting eyelids often. Consult an eye specialist if necessary.
First-aid measures after ingestion	: Rinse mouth. Do not induce vomiting because of corrosive effects. Immediately call a POISON CENTER/doctor.

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

Symptoms/effects after inhalation	: Cough. May cause respiratory irritation. Severe inhalation hazard.
Symptoms/effects after skin contact	: May cause moderate irritation.
Symptoms/effects after eye contact	: May cause moderate irritation, including burning sensation, tearing, redness or swelling. Risk of damage to eyes.
Symptoms/effects after ingestion	: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

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

For the Anti-poison Center indicate all the components including the non dangerous ones to obtain (when possible) a total of 100 %.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Water spray. Foam. Dry powder. Carbon dioxide.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Do not breathe fumes from fires or vapours from decomposition.
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Hazardous decomposition products in case of fire : Carbon dioxide. Carbon monoxide. Nitrogen oxides.

5.3. Advice for firefighters

Precautionary measures fire : Evacuate personnel to a safe area. Do not enter fire area without proper protective equipment, including respiratory protection.

Firefighting instructions : Exercise caution when fighting any chemical fire. Unauthorized persons are not admitted. Eliminate all ignition sources if safe to do so. Prevent fire fighting water from entering the environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self contained breathing apparatus. Special protective equipment for fire-fighters.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : No open flames. No smoking. Spill should be handled by trained cleaning personnel properly equipped with respiratory and eye protection.

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Avoid release to the environment. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it. Do not allow to enter drains or water courses.

6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8. Concerning disposal elimination after cleaning, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Provide good ventilation in process area to prevent formation of vapour. Avoid all unnecessary exposure. Do not handle until all safety precautions have been read and understood. Keep containers closed.

Hygiene measures : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in original container. Store, if possible, in a cool, well ventilated place away from incompatible materials.

Incompatible products : Strong acids. Oxidizing agent. Halogenated hydrocarbons.

Incompatible materials : Heat sources.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Personal protective equipment:

Self-contained breathing apparatus. Gloves. Gas mask. Protective clothing. Protective goggles. High gas/vapour concentration: gas mask with filter type K.

Hand protection:

Nitrile-rubber protective gloves. Chemical resistant gloves (according to European standard NF EN 374 or equivalent)

Eye protection:

Chemical goggles or face shield

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

[In case of inadequate ventilation] wear respiratory protection. High gas/vapour concentration: gas mask with filter type K

Personal protective equipment symbol(s):**Consumer exposure controls:**

Avoid contact during pregnancy/while nursing.

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state	: Liquid
Colour	: colourless to slightly yellow.
Odour	: Amine-like.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: 0.95
Solubility	: No data available
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 23°C
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity**10.1. Reactivity**

No additional information available

10.2. Chemical stability

Stable in use and storage conditions as recommended in item 7.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Heat. Open flame. Sparks.

10.5. Incompatible materials

Strong acids. Oxidizing agent. metals. halogenated hydrocarbons.

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide. Nitrogen oxides.

SECTION 11: Toxicological information**11.1. Information on toxicological effects**

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

ATE CLP (oral)	389.344 mg/kg bodyweight
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4,4'-methylenebis(cyclohexylamine) (1761-71-3)

LD50 oral rat	380 mg/kg
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3-aminomethyl-3,5,5-trimethylcyclohexylamine (2855-13-2)

LD50 oral rat	1030 mg/kg
Skin corrosion/irritation	: Causes severe skin burns and eye damage.
Serious eye damage/irritation	: Serious eye damage, category 1, implicit
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified

SECTION 12: Ecological information**12.1. Toxicity**

Acute aquatic toxicity	: Not classified
Chronic aquatic toxicity	: Not classified

4,4'-methylenebis(cyclohexylamine) (1761-71-3)

LC50 fish 1	32 mg/l
EC50 Daphnia 1	7.07 mg/l
EC50 other aquatic organisms 1	141.1 mg/l

3-aminomethyl-3,5,5-trimethylcyclohexylamine (2855-13-2)

LC50 fish 1	110 mg/l
EC50 Daphnia 1	23 mg/l <Traduction manquante : />
EC50 other aquatic organisms 1	37 mg/l
EC50 72h algae (1)	> 50 mg/l

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

No additional information available

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
UN 2735	UN 2735	UN 2735	UN 2735	UN 2735
14.2. UN proper shipping name				
AMINES, LIQUID, CORROSIVE, N.O.S.	AMINES, LIQUID, CORROSIVE, N.O.S.	Amines, liquid, corrosive, n.o.s.	AMINES, LIQUID, CORROSIVE, N.O.S.	AMINES, LIQUID, CORROSIVE, N.O.S.

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

Transport document description

UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (4,4'-methylenebis(cyclohexylamine) ; 3-aminomethyl-3,5,5-trimethylcyclohexylamine), 8, II, (E)	UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (4,4'-methylenebis(cyclohexylamine) ; 3-aminomethyl-3,5,5-trimethylcyclohexylamine), 8, II	UN 2735 Amines, liquid, corrosive, n.o.s. (4,4'-methylenebis(cyclohexylamine) ; 3-aminomethyl-3,5,5-trimethylcyclohexylamine), 8, II	UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (4,4'-methylenebis(cyclohexylamine) ; 3-aminomethyl-3,5,5-trimethylcyclohexylamine), 8, II	UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (4,4'-methylenebis(cyclohexylamine) ; 3-aminomethyl-3,5,5-trimethylcyclohexylamine), 8, II
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14.3. Transport hazard class(es)

8	8	8	8	8
				

14.4. Packing group

II	II	II	II	II
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14.5. Environmental hazards

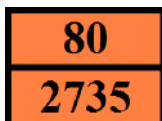
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : Yes	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
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No supplementary information available

14.6. Special precautions for user

Overland transport

Classification code (ADR)	: C7
Special provisions (ADR)	: 274
Limited quantities (ADR)	: 1I
Excepted quantities (ADR)	: E2
Packing instructions (ADR)	: P001, IBC02
Mixed packing provisions (ADR)	: MP15
Portable tank and bulk container instructions (ADR)	: T11
Portable tank and bulk container special provisions (ADR)	: TP1, TP27
Tank code (ADR)	: L4BN
Vehicle for tank carriage	: AT
Transport category (ADR)	: 2
Hazard identification number (Kemler No.)	: 80
Orange plates	:



Tunnel restriction code (ADR)	: E
EAC code	: 2X
APP code	: B

Transport by sea

Special provisions (IMDG)	: 274
Packing instructions (IMDG)	: P001
IBC packing instructions (IMDG)	: IBC02
Tank instructions (IMDG)	: T11
Tank special provisions (IMDG)	: TP1, TP27
EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-B
Stowage category (IMDG)	: A
Segregation (IMDG)	: SG35
Properties and observations (IMDG)	: Colourless to yellowish liquids or solutions with a pungent odour. Miscible with or soluble in water. When involved in a fire, evolve toxic gases. Corrosive to most metals, especially to copper and its alloys. Reacts violently with acids. Cause burns to skin, eyes and mucous membranes.

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Air transport

PCA Excepted quantities (IATA)	: E2
PCA Limited quantities (IATA)	: Y840
PCA limited quantity max net quantity (IATA)	: 0.5L
PCA packing instructions (IATA)	: 851
PCA max net quantity (IATA)	: 1L
CAO packing instructions (IATA)	: 855
CAO max net quantity (IATA)	: 30L
Special provisions (IATA)	: A3, A803
ERG code (IATA)	: 8L

Inland waterway transport

Classification code (ADN)	: C7
Special provisions (ADN)	: 274
Limited quantities (ADN)	: 1 L
Excepted quantities (ADN)	: E2
Carriage permitted (ADN)	: T
Equipment required (ADN)	: PP, EP
Number of blue cones/lights (ADN)	: 0

Rail transport

Classification code (RID)	: C7
Special provisions (RID)	: 274
Limited quantities (RID)	: 1L
Excepted quantities (RID)	: E2
Packing instructions (RID)	: P001, IBC02
Mixed packing provisions (RID)	: MP15
Portable tank and bulk container instructions (RID)	: T11
Portable tank and bulk container special provisions (RID)	: TP1, TP27
Tank codes for RID tanks (RID)	: L4BN
Transport category (RID)	: 2
Colis express (express parcels) (RID)	: CE6
Hazard identification number (RID)	: 80

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

Not applicable

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****15.1.1. EU-Regulations**

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

Substance(s) are not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC.

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information**Indication of changes:**

Revision - See : *.

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

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Other information

: Information in this safety data sheet is based on actual knowledge in our possession and our experience. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. It is the user's responsibility to take mentioned precaution measures and ensure that this information is complete and sufficient for the use of this product.

Full text of H- and EUH-statements:	
Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Skin Corr. 1B	Skin corrosion/irritation, Category 1B
Skin Sens. 1	Skin sensitisation, Category 1
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product