

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Product form : Mixture  
Trade name : Aluminum Flux Paste

**1.2. Relevant identified uses of the substance or mixture and uses advised against****1.2.1. Relevant identified uses**

Main use category : Industrial use, Professional use  
Use of the substance/mixture : Soldering flux

**1.2.2. Uses advised against**

No additional information available

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

LA-CO Industries Europe S.A.S.  
Parc Industriel de la Plaine de  
l'Ain - Allée des Combes.  
01150.BLYES.France.  
Phone: +33 (0)4 74 46 23 23  
Fax: +33 (0)4 74 46 23 29  
E-mail: info@eu.laco.com  
Web: http://www.markal.com

**1.4. Emergency telephone number**

Emergency number : 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887

EU Member State	Officieel adviesorgaan	Adres	Noodnummer
AUSTRIA	Vergiftungsinformationszentrale (Poisons Information Centre)	Allgemeines Krankenhaus Waehringer Geurtel 18-20 1090 Wien	+43 1 406 43 43
BELARUS	The Belarus Republican Poisons Centre	Kizhevatova str. 58 220115 Minsk	+375 (0)17 201 9158
BELGIUM	Centre Anti-Poisons/Antigifocentrum c/o Hôpital Central de la Base - Reine Astrid	Rue Bruyn 1 B -1120 Bruxelles/Brussel	+32 70 245 245
BULGARIA	Национален токсикологичен информационен център National Clinical Toxicology Centre, Emergency Medical Institute "Pirogov"	21 Tottleben Boulevard 1606 SOFIA	+359 2 9154 409
CROATIA	Poisons Control Centre Institute of Medical Research & Occupational Health	Ksaverska Cesta 2 P.O. Box 291 HR-10000 Zagreb	+385 1 234 8342
CZECH REPUBLIC	Toxikologické informační středisko Clinic For Occupational Medicine, 1st Medical Faculty, Charles University	Na Bojišti 1 120 00 Praha 2	+42 2 2491 9293 +42 2 2491 5402
DENMARK	Gifflinjen Bispebjerg Hospital	Bispebjerg Bakke 23, 60, 1 DK-2400 København NV	+45 82 12 12 12 +45 35 31 55 55
ESTONIA	Mürgistusteabekeskus	Gonsiori 29 15027 Tallinn	+372 626 93 90
FINLAND	Myrkytystietokeskus	P.O.B 340 (Haartmaninkatu 4) HUS SF - 00029 Helsinki	+358 9 471 977
FRANCE	ORFILA		+33 1 45 42 59 59
GERMANY	Berliner Betrieb für Zentrale Gesundheitliche Aufgaben	Oranienburger Strasse 285 13437 Berlin	+49 30 19240
GERMANY	Informations und Beratungszentrum für Vergiftungsfälle	Kirrberger Straße, Gebäude 9 D-66421 Homburg/Saar	+49 6841 19240
GERMANY	Beratungstelle bei Vergiftungen, Klinische Toxikologie und Beratungsstelle bei Vergiftungen	Langenbeckstrasse 1 55131 Mainz	+49 6131 19240
GREECE	Poisons Information Centre	11527 Athens	+30 10 779 3777
HUNGARY	Országos Kémiai Biztonsági Intézet (National Institute of Chemical Safety) Egészségügyi Toxikológiai Tájékoztató Szolgálat (Health Toxicological Information Service)	1437 Budapest PO Box 839 1097 Budapest, Nagyváradi tér 2	+36 80 20 11 99
ICELAND	Eitrunarmiðstöðin	Eitrunarmiðstöðin 108 Reykjavík	+354 543 22 22
IRELAND	National Poisons Information Centre	Beaumont Hospital PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2166

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LATVIA	Valsts Toksikoloģijas centra Saindēšanās un zāļu informācijas centrs	2 Hipocrate Street LV 1038 Riga	+371 67 04 24 73
LITHUANIA	Apsinuodijimų kontrolės ir informacijos biuras	Siltnamiu 29 2043 Vilnius	+370 5 236 20 52/+370 687 53 378
MALTA	Medicines & Poisons Info Office	Mater Dei Hospital, Msida MSD 2090 Malta	25450000
NETHERLANDS	Nationaal Vergiftigingen Informatie Centrum National Institute for Public Health and the Environment, NB this service is only available to health professionals	Huispostnummer B.00.118, PO Box 85500 3508 GA Utrecht	+31 30 274 88 88
PORTUGAL	Centro de Informação Antivenenos Instituto Nacional de Emergência Médica (INEM)	Rua Almirante Barroso, 36 1000-013 Lisboa	808 250 143 (for use only in Portugal), +351 21 330 3284
ROMANIA	Biroul pentru Regulamentul Sanitar International si Informare Toxicologica	Str. Dr. Leonte Anastasievici Nr.1-3, Sector 5 50463 Bucuresti	+40 21 318 36 06
SLOVAKIA	Národné toxikologické informačné centrum University Hospital Bratislava	Limbová 5 833 05 Bratislava	+421 2 54 77 4 166
SPAIN	Servicio de Información Toxicológica Instituto Nacional de Toxicología, Departamento de Madrid	Calle Luis Cabrera 9 E-28002 Madrid	+34 91 562 04 20
SWEDEN	Giftinformationscentralen Swedish Poisons Information Centre, Karolinska Hospital	Box 60 500 SE-171 76 Stockholm	+46 8 33 12 31 (International) 112 (National)
SWITZERLAND	Centre Suisse d'Information Toxicologique	Freiestrasse 16 Postfach CH-8028 Zurich	+41 44 251 51 51 (International) 145 (National)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

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

Acute Tox. 4 (Oral)	H302
Acute Tox. 4 (Inhalation:dust,mist)	H332
Skin Corr. 1B	H314
Eye Dam. 1	H318
Skin Sens. 1	H317
Muta. 2	H341
Repr. 2	H361
STOT SE 3	H335
STOT RE 2	H373
Aquatic Chronic 2	H411

Full text of classification categories and 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

: 2-aminoethanol, tin chloride, zinc chloride, ammonium fluoride, ammonium hydrogendifluoride

Hazard statements (CLP)

: H302+H332 - Harmful if swallowed or if inhaled  
H314 - Causes severe skin burns and eye damage  
H317 - May cause an allergic skin reaction  
H335 - May cause respiratory irritation  
H341 - Suspected of causing genetic defects  
H361 - Suspected of damaging fertility or the unborn child  
H373 - May cause damage to organs through prolonged or repeated exposure  
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (CLP)

: P201 - Obtain special instructions before use  
P202 - Do not handle until all safety precautions have been read and understood  
P260 - Do not breathe fume, spray  
P264 - Wash hands, forearms and face thoroughly after handling

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P270 - Do not eat, drink or smoke when using this product  
P271 - Use only outdoors or in a well-ventilated area  
P272 - Contaminated work clothing should not be allowed out of the workplace  
P273 - Avoid release to the environment  
P280 - Wear eye protection, face shield, protective clothing, protective gloves  
P301+P312 - If swallowed: Call a poison center or doctor  
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting  
P302+P352 - IF ON SKIN: Wash with plenty of water  
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
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  
P312 - Call a poison center or doctor if you feel unwell  
P321 - Specific treatment (see First aid measures on this label)  
P330 - Rinse mouth  
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention  
P362+P364 - Take off contaminated clothing and wash it before reuse  
P391 - Collect spillage  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed  
P405 - Store locked up  
P501 - Dispose of contents/container to an approved waste disposal plant

### 2.3. Other hazards

PBT: not yet assessed

vPvB: not yet assessed

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
2-aminoethanol	(CAS No) 141-43-5 (EC no) 205-483-3 (EC index no) 603-030-00-8	50 – 60	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Corr. 1B, H314 STOT SE 3, H335
ammonium hydrogendifluoride	(CAS No) 1341-49-7 (EC no) 215-676-4 (EC index no) 009-009-00-4	10 – 20	Acute Tox. 3 (Oral), H301 Skin Corr. 1B, H314
tin chloride	(CAS No) 7772-99-8 (EC no) 231-868-0	10 – 20	Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Corr. 1C, H314 Skin Sens. 1, H317 Muta. 2, H341 Repr. 2, H361 STOT SE 3, H335 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
zinc chloride	(CAS No) 7646-85-7 (EC no) 231-592-0 (EC index no) 030-003-00-2	5 – 10	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 STOT SE 3, H335 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
ammonium fluoride	(CAS No) 12125-01-8 (EC no) 235-185-9 (EC index no) 009-006-00-8	0.1 – 1	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation:dust,mist), H331

Name	Product identifier	Specific concentration limits
2-aminoethanol	(CAS No) 141-43-5 (EC no) 205-483-3 (EC index no) 603-030-00-8	(C >= 5) STOT SE 3, H335
ammonium hydrogendifluoride	(CAS No) 1341-49-7 (EC no) 215-676-4 (EC index no) 009-009-00-4	(0.1 =< C < 1) Eye Irrit. 2, H319 (0.1 =< C < 1) Skin Irrit. 2, H315 (C >= 1) Skin Corr. 1B, H314
zinc chloride	(CAS No) 7646-85-7 (EC no) 231-592-0 (EC index no) 030-003-00-2	(C >= 5) STOT SE 3, H335

Full text of R- and H-statements: see section 16

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### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. Immediately call a POISON CENTER or doctor/physician.
- First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician. Wash with plenty of soap and water. If skin irritation or rash occurs: Get immediate medical advice/attention. Wash contaminated clothing before reuse.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
- First-aid measures after ingestion : Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

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

- Symptoms/injuries : Suspected of causing genetic defects. Suspected of damaging fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure.
- Symptoms/injuries after inhalation : Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled. May cause respiratory irritation.
- Symptoms/injuries after skin contact : Causes severe skin burns and eye damage. May cause an allergic skin reaction.
- Symptoms/injuries after eye contact : Causes serious eye damage.
- Symptoms/injuries after ingestion : Swallowing a small quantity of this material will result in serious health hazard. Harmful if swallowed.

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

All treatments should be based on observed signs and symptoms of distress in the patient.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

- Suitable extinguishing media : Carbon dioxide. Dry powder. Foam.
- Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

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

- Fire hazard : No particular fire or explosion hazard.
- Hazardous decomposition products in case of fire : Burning produces irritating, toxic and noxious fumes. Carbon monoxide. ammonia. Hydrogen fluoride.

#### 5.3. Advice for firefighters

- Firefighting instructions : Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses. Cool adjacent structures and containers with water spray to protect and prevent ignition.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear fire/flame resistant/retardant clothing. Wear a self contained breathing apparatus. EN469.

### SECTION 6: Accidental release measures

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

- General measures : Avoid all eye and skin contact and do not breathe vapour and mist.

##### 6.1.1. For non-emergency personnel

- Protective equipment : Chemical goggles or safety glasses. Wear suitable gloves. Face shield.
- Emergency procedures : Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

- Protective equipment : Wear suitable gloves. Chemical goggles or safety glasses. Face shield.
- Emergency procedures : Ventilate area.

#### 6.2. Environmental precautions

Avoid release to the environment. Do not discharge into drains or the environment. Prevent entry to sewers and public waters.

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

- For containment : Stop the flow of material, if this is without risk.
- Methods for cleaning up : Take up in non-combustible absorbent material and shove into container for disposal.

#### 6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

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### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Precautions for safe handling : Use only outdoors or in a well-ventilated area. Do not breathe fume, spray. Obtain special instructions before use. Use personal protective equipment as required. Do not handle until all safety precautions have been read and understood.
- Hygiene measures : 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. Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace.

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

- Technical measures : Comply with applicable regulations.
- Storage conditions : Keep only in original container. Keep container tightly closed.
- Incompatible products : Strong oxidizers.
- Incompatible materials : Sodium nitrite. Hydrogen fluoride.
- Prohibitions on mixed storage : Incompatible materials.
- Storage area : Store in dry, cool, well-ventilated area.

#### 7.3. Specific end use(s)

Flux.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

2-aminoethanol (141-43-5)		
EU	IOELV TWA (mg/m <sup>3</sup> )	2.5 mg/m <sup>3</sup>
EU	IOELV TWA (ppm)	1 ppm
EU	IOELV STEL (mg/m <sup>3</sup> )	7.6 mg/m <sup>3</sup>
EU	IOELV STEL (ppm)	3 ppm
EU	Notes	Skin
Denmark	Grænseværdie (kortvarig) (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
Denmark	Grænseværdie (kortvarig) (ppm)	2 ppm
Denmark	Anmærkninger (DK)	H
Finland	HTP-arvo (8h) (mg/m <sup>3</sup> )	2.5 mg/m <sup>3</sup>
Finland	HTP-arvo (8h) (ppm)	1 ppm
Finland	HTP-arvo (15 min)	7.6 mg/m <sup>3</sup>
Finland	HTP-arvo (15 min) (ppm)	3 ppm
Finland	Huomautus (FI)	iho
France	Note (FR)	Peau
Germany	TRGS 900 Limitation of exposure peaks (mg/m <sup>3</sup> )	10.2 mg/m <sup>3</sup>
Germany	TRGS 900 Limitation of exposure peaks (ppm)	4 ppm
Netherlands	Grenswaarde TGG 8H (ppm)	1 ppm
Netherlands	Grenswaarde TGG 15MIN (ppm)	3 ppm
Slovakia	NPHV (priemerná) (mg/m <sup>3</sup> )	2.5 mg/m <sup>3</sup>
Slovakia	NPHV (priemerná) (ppm)	1 ppm
Slovakia	Upozornenie (SK)	K
Spain	VLA-ED (mg/m <sup>3</sup> )	2.5 mg/m <sup>3</sup>
Spain	VLA-ED (ppm)	1 ppm
Spain	VLA-EC (mg/m <sup>3</sup> )	7.5 mg/m <sup>3</sup>
Spain	VLA-EC (ppm)	3 ppm
Spain	Notes	vía dérmica,VLI
Sweden	Anmärkning (SE)	H
zinc chloride (7646-85-7)		
Belgium	Remark (BE)	(chlorure de, fumées)
Czech Republic	Remark (CZ)	I
Poland	Remark (PL)	dymy
Spain	VLA-ED (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Spain	VLA-EC (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Sweden	Anmärkning (SE)	respirable dust 1

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zinc chloride (7646-85-7)		
United Kingdom	Remark (WEL)	(fume)
Switzerland	Remark (CH)	(alveolengängiger Staub)
ammonium hydrogendifluoride (1341-49-7)		
EU	IOELV TWA (mg/m <sup>3</sup> )	2.5 mg/m <sup>3</sup>
EU	Notes	(as F)
France	VME (mg/m <sup>3</sup> )	2.5 mg/m <sup>3</sup>
France	Note (FR)	(en F)
Germany	TRGS 900 Occupational exposure limit value (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Germany	TRGS 900 Limitation of exposure peaks (mg/m <sup>3</sup> )	4 mg/m <sup>3</sup>
Germany	Remark (TRGS 900)	(einatembar, als Fluoride berechnet)
United Kingdom	WEL TWA (mg/m <sup>3</sup> )	2.5 mg/m <sup>3</sup>
United Kingdom	Remark (WEL)	(as F)

### 8.2. Exposure controls

Appropriate engineering controls	: Avoid creating mist or spray. Emergency safety showers should be available in the immediate vicinity of any potential exposure. Eyewash stations. Either local exhaust or general room ventilation is usually required.
Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: Wear suitable gloves resistant to chemical penetration. Use rubber gloves. EN 374.
Eye protection	: Face shield. Chemical goggles or safety glasses. EN 166.
Skin and body protection	: Wear suitable protective clothing. Impervious clothing. EN702.
Respiratory protection	: Wear appropriate mask. Use air-purifying respirator equipped with particulate filtering cartridges. EN 12083.
Other information	: Do not eat, drink or smoke when using this product.

## SECTION 9: Physical and chemical properties

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

Physical state	: Solid
Colour	: light amber.
Odour	: Ammonia-like.
Odour threshold	: No data available
pH	: 6 - 8
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: > 93.3 °C
Flash point	: > 93 °C
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	: 1.33
Solubility	: Soluble in water.
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

### 9.2. Other information

VOC content	: 0 %
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## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Thermal decomposition generates : Corrosive vapours.

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### 10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Heat.

### 10.5. Incompatible materials

Strong oxidizers. Sodium nitrite.

### 10.6. Hazardous decomposition products

Thermal decomposition generates : Corrosive vapours. Hydrogen fluoride. ammonia. Carbon monoxide. Burning produces irritating, toxic and noxious fumes.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

**Acute toxicity** : Oral: Harmful if swallowed. Dermal: Not classified. Inhalation:dust,mist: Harmful if inhaled.

Aluminum Flux Paste	
LD50 oral rat	671 mg/kg
ATE CLP (oral)	671.000 mg/kg bodyweight
ATE CLP (dust,mist)	2.174 mg/l/4h

2-aminoethanol (141-43-5)	
LD50 oral rat	1515 mg/kg
LD50 dermal rabbit	1822 (1822 - 3451) mg/kg
LC50 inhalation rat (mg/l)	> 1.3 mg/l
ATE CLP (oral)	1515.000 mg/kg bodyweight
ATE CLP (dermal)	1822.000 mg/kg bodyweight
ATE CLP (dust,mist)	1.500 mg/l/4h

tin chloride (7772-99-8)	
LD50 oral rat	2274.6 mg/kg bodyweight
LC50 inhalation rat (mg/l)	2 mg/l/4h
ATE CLP (oral)	2274.600 mg/kg bodyweight
ATE CLP (vapours)	2.000 mg/l/4h
ATE CLP (dust,mist)	2.000 mg/l/4h

zinc chloride (7646-85-7)	
LD50 oral rat	1100 mg/kg
LD50 oral	1260 mg/kg mouse
LD50 dermal rabbit	> 2000 mg/kg no effects were seen
LC50 inhalation rat (mg/l)	2000 mg/m <sup>3</sup> calculated
ATE CLP (oral)	1100.000 mg/kg bodyweight

ammonium fluoride (12125-01-8)	
LD50 oral rat	200 (200 - 2000) mg/kg
LC50 inhalation rat (mg/l)	1 mg/l/4h read-across NaF
ATE CLP (oral)	200.000 mg/kg bodyweight
ATE CLP (dermal)	300.000 mg/kg bodyweight
ATE CLP (vapours)	1.000 mg/l/4h
ATE CLP (dust,mist)	1.000 mg/l/4h

ammonium hydrogendifluoride (1341-49-7)	
LD50 oral rat	130 mg/kg
ATE CLP (oral)	130.000 mg/kg bodyweight

**Skin corrosion/irritation** : Causes severe skin burns and eye damage.

**Serious eye damage/irritation** : Causes serious eye damage.

**Respiratory or skin sensitisation** : May cause an allergic skin reaction.

**Germ cell mutagenicity** : Suspected of causing genetic defects.

**Carcinogenicity** : Not classified (Based on available data, the classification criteria are not met)

**Reproductive toxicity** : Suspected of damaging fertility or the unborn child.

**Specific target organ toxicity (single exposure)** : May cause respiratory irritation.

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<b>Specific target organ toxicity (repeated exposure)</b>	: May cause damage to organs through prolonged or repeated exposure.
<b>Aspiration hazard</b>	: Not classified (Based on available data, the classification criteria are not met)

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - water : Toxic to aquatic life with long lasting effects.

<b>2-aminoethanol (141-43-5)</b>	
LC50 fish 1	165 mg/l 48 h
EC50 Daphnia 1	65 mg/l 48 h
<b>tin chloride (7772-99-8)</b>	
NOEC chronic crustacea	0.18 mg/l
<b>zinc chloride (7646-85-7)</b>	
LC50 fish 1	0.727 (0.727 - 1.65) mg/l <i>Oncorhynchus kisutch</i>
EC50 Daphnia 1	0.33 (0.33 - 0.66) mg/l
<b>ammonium fluoride (12125-01-8)</b>	
LC50 fish 1	209 mg/l 96 h
EC50 other aquatic organisms 1	26 - 48 mg/l 96 h, trichoptera aquatic larvae
NOEC (acute)	11.8 mg/l test mat. estimated from NH <sub>3</sub> -N content according to EPA-600/3-79-091
<b>ammonium hydrogendifluoride (1341-49-7)</b>	
LC50 fish 1	421.4 nM
EC50 Daphnia 1	109 - 340 mg/l

#### 12.2. Persistence and degradability

<b>Aluminum Flux Paste</b>	
Persistence and degradability	May cause long-term adverse effects in the environment.
<b>2-aminoethanol (141-43-5)</b>	
Persistence and degradability	Readily biodegradable.
<b>tin chloride (7772-99-8)</b>	
Persistence and degradability	Readily biodegradable.

#### 12.3. Bioaccumulative potential

<b>2-aminoethanol (141-43-5)</b>	
Log Pow	-1.31
<b>tin chloride (7772-99-8)</b>	
Log Pow	-2.1506
<b>zinc chloride (7646-85-7)</b>	
Bioaccumulative potential	Not expected to bioaccumulate.

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Results of PBT and vPvB assessment

<b>Aluminum Flux Paste</b>	
PBT: not yet assessed	
vPvB: not yet assessed	

#### 12.6. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Sewage disposal recommendations	: Do not dispose of waste into sewer.
Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	: Avoid release to the environment.
European List of Waste (LoW) code	: For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used.



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H code	: H10 - 'Toxic for reproduction': substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence. H11 - 'Mutagenic': substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence. H13 - 'Sensitizing': substances and preparations which, if they are inhaled or if they penetrate the skin, are capable of eliciting a reaction of hypersensitization such that on further exposure to the substance or preparation, characteristic adverse effects are produced. H14 - 'Ecotoxic': waste which presents or may present immediate or delayed risks for one or more sectors of the environment. H8 - 'Corrosive': substances and preparations which may destroy living tissue on contact. H5 - 'Harmful': substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.
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### SECTION 14: Transport information

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

#### 14.1. UN number

UN-No. (ADR)	: 1759
UN-No. (IATA)	: 1759
UN-No. (IMDG)	: 1759
UN-No. (ADN)	: 1759

#### 14.2. UN proper shipping name

Proper Shipping Name (ADR)	: Corrosive solid, n.o.s. (2-aminoethanol, ammonium dihydrogenfluoride)
Proper Shipping Name (IATA)	: Corrosive solid, n.o.s. (2-aminoethanol, ammonium dihydrogenfluoride)
Proper Shipping Name (IMDG)	: CORROSIVE SOLID, N.O.S. (2-aminoethanol, ammonium dihydrogenfluoride)
Proper Shipping Name (ADN)	: CORROSIVE SOLID, N.O.S. (2-aminoethanol, ammonium dihydrogenfluoride)
Transport document description (ADR)	: UN 1759 CORROSIVE SOLID, N.O.S. (2-aminoethanol, ammonium dihydrogenfluoride), 8, II, (E), ENVIRONMENTALLY HAZARDOUS

#### 14.3. Transport hazard class(es)

Class (ADR)	: 8
Classification code (ADR)	: C10
Class (IATA)	: 8
Class (IMDG)	: 8
Class (ADN)	: 8
Classification code (ADN)	: C10

#### 14.4. Packing group

Packing group (ADR)	: II
Packing group (IATA)	: II
Packing group (IMDG)	: II
Packing group (ADN)	: II

#### 14.5. Environmental hazards

Dangerous for the environment :



Other information : No supplementary information available.

#### 14.6. Special precautions for user

##### 14.6.1. Overland transport

Hazard identification number (Kemler No.)	: 80
Classification code (ADR)	: C10
Orange plates	:



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

##### 14.6.2. Transport by sea

EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-B

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Stowage category (IMDG) : A

### 14.6.3. Inland waterway transport

Carriage prohibited (ADN) : No

### 14.7. 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

#### 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

VOC content : 0 %

#### 15.1.2. National regulations

##### Germany

Water hazard class (WGK) : 3 - severe hazard to waters

WGK remark : Classification based on the components in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS)

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

## SECTION 16: Other information

according to Regulation (EU) 2015/830

Indication of changes:

Transport information.

Abbreviations and acronyms:

	ACGIH (American Conference of Government Industrial Hygienists)
	ATE: Acute Toxicity Estimate
	CAS (Chemical Abstracts Service) number
	CLP: Classification, Labelling, Packaging.
	EC50: Environmental Concentration associated with a response by 50% of the test population.
	GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).
	LD50: Lethal Dose for 50% of the test population
	OSHA: Occupational Safety & Health Administration
	PBT: Persistent, Bioaccumulative, Toxic
	PNEC: Predicted No Effect Level
	STEL: Short Term Exposure Limits
	TSCA: Toxic Substances Control Act
	TWA: Time Weighted Average

Data sources

: Canadian Centre for Occupational Health and Safety. Accessed at: [http://www.ccohs.ca/oshanswers/legisl/whmis\\_classifi.html](http://www.ccohs.ca/oshanswers/legisl/whmis_classifi.html).

ESIS (European chemical Substances Information System); accessed at: <http://esis.jrc.ec.europa.eu/index.php?PGM=cla>.

European Chemicals Agency (ECHA) Registered Substances list. Accessed at <http://echa.europa.eu/>. Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition.

National Fire Protection Association; Fire Protection Guide to Hazardous Materials; 10th edition.

OSHA 29CFR 1910.1200 Hazard Communication Standard.

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.

TSCA Chemical Substance Inventory. Accessed at <http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html>.

Other information

: None.

Full text of R-, H- and EUH-statements:

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Acute Tox. 3 (Dermal)	Acute toxicity (dermal), Category 3
Acute Tox. 3 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Muta. 2	Germ cell mutagenicity, Category 2
Repr. 2	Reproductive toxicity, Category 2
Skin Corr. 1B	Skin corrosion/irritation, Category 1B
Skin Corr. 1C	Skin corrosion/irritation, Category 1C
Skin Sens. 1	Sensitisation — Skin, category 1
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H301	Toxic if swallowed
H302	Harmful if swallowed
H311	Toxic in contact with skin
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
H331	Toxic if inhaled
H332	Harmful if inhaled
H335	May cause respiratory irritation
H341	Suspected of causing genetic defects
H361	Suspected of damaging fertility or the unborn child
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects
R20	Harmful by inhalation
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed
R22	Harmful if swallowed
R23/24/25	Toxic by inhalation, in contact with skin and if swallowed
R25	Toxic if swallowed
R34	Causes burns
R35	Causes severe burns
R37	Irritating to respiratory system
R43	May cause sensitisation by skin contact
R48/22	Harmful: danger of serious damage to health by prolonged exposure if swallowed
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
C	Corrosive
N	Dangerous for the environment
T	Toxic
Xi	Irritant
Xn	Harmful

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Acute Tox. 4 (Oral)	H302	On basis of test data
Acute Tox. 4 (Inhalation:dust,mist)	H332	Calculation method
Skin Corr. 1B	H314	Calculation method
Eye Dam. 1	H318	Expert judgment
Skin Sens. 1	H317	Calculation method
Muta. 2	H341	Calculation method
Repr. 2	H361	Calculation method

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STOT SE 3	H335	Calculation method
STOT RE 2	H373	Calculation method
Aquatic Chronic 2	H411	Calculation method

LA-CO EU CLP SDS

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*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*