



S.A. LIPMES
08243 Manresa (Barcelona)

Date printed 25.04.2022, Revision 25.04.2022

Version 04. Supersedes version: 03

Page 1 / 13

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

1.1 Product identifier

Zinc ammonium chloride liquid

Registration number 01-2119557900-37-0001

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

1.2.1 Relevant uses

Raw material for industrial applications
Usage only in accordance with the identified usages as stipulated in the CSR/CSA.

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company S.A. LIPMES
Creu Guixera s/n
08243 Manresa (Barcelona) / SPAIN
Phone +34 938770447
Fax +34 938741160
E-mail lipmes@lipmes.com

Address enquiries to

Technical information lipmes@lipmes.com
Safety Data Sheet sdb@chemiebuero.de

1.4 Emergency telephone number

Advisory body +49 (0)89-19240 (24h) (English)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture [REGULATION (GB) CLP]

Acute Tox. 4: H302 Harmful if swallowed.
Skin Corr. 1B: H314 Causes severe skin burns and eye damage.
STOT SE 3: H335 May cause respiratory irritation.
Aquatic Acute 1: H400 Very toxic to aquatic life.
Aquatic Chronic 1: H410 Very toxic to aquatic life with long lasting effects.






S.A. LIPMES
08243 Manresa (Barcelona)

Date printed 25.04.2022, Revision 25.04.2022

Version 04. Supersedes version: 03

Page 2 / 13

2.2 Label elements

	The product is required to be labelled in accordance with regulation CLP.	
Hazard pictograms		
		
Signal word	DANGER	
Contains:	Ammonium zinc chloride Triammonium pentachlorozincate(3-) Diammonium tetrachlorozincate(2-) Ammonium chloride Zinc chloride	
Hazard statements	H302 Harmful if swallowed. H314 Causes severe skin burns and eye damage. H335 May cause respiratory irritation. H410 Very toxic to aquatic life with long lasting effects.	
Precautionary statements	P273 Avoid release to the environment. P280 Wear protective gloves / protective clothing / eye protection / face protection. P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or 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. P310 Immediately call a POISON CENTER / doctor. P405 Store locked up.	

2.3 Other hazards

Other hazards No particular hazards known.

SECTION 3: Composition / Information on ingredients

3.1 Substances
not applicable



S.A. LIPMES
08243 Manresa (Barcelona)

Date printed 25.04.2022, Revision 25.04.2022

Version 04. Supersedes version: 03

Page 3 / 13

3.2 Mixtures

The product is a mixture.

Range [%]	Substance
> 40	Ammonium zinc chloride CAS: 52628-25-8, EINECS/ELINCS: 258-054-8, Reg-No.: 01-2119557900-37-XXXX GHS/CLP: Acute Tox. 4: H302 - Skin Corr. 1B: H314 - STOT SE 3: H335 - Aquatic Chronic 1: H410
1 - 5	Zinc chloride CAS: 7646-85-7, EINECS/ELINCS: 231-592-0, EU-INDEX: 030-003-00-2, Reg-No.: 01-2119472431-44-XXXX GHS/CLP: Acute Tox. 4: H302 - Skin Corr. 1B: H314 - Aquatic Acute 1: H400 - Aquatic Chronic 1: H410, M-Factor (acute): 1, M-Factor (chronic): 1 SCL [%]: >= 5: STOT SE 3: H335
1 - 5	Ammonium chloride CAS: 12125-02-9, EINECS/ELINCS: 235-186-4, EU-INDEX: 017-014-00-8, Reg-No.: 01-2119487950-27-XXXX GHS/CLP: Acute Tox. 4: H302 - Eye Irrit. 2: H319
1 - 5	Diammonium tetrachlorozincate(2-) CAS: 14639-97-5, EINECS/ELINCS: 238-687-6 GHS/CLP: Acute Tox. 4: H302 - Skin Corr. 1B: H314 - Aquatic Chronic 1: H410
1 - 5	Triammonium pentachlorozincate(3-) CAS: 14639-98-6, EINECS/ELINCS: 238-688-1 GHS/CLP: Acute Tox. 4: H302 - Skin Corr. 1B: H314 - Aquatic Chronic 1: H410

Comment on component parts

This product is a mixture of salts.
Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.
For full text of H-statements: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information	Remove contaminated soaked clothing immediately and dispose of safely.
Inhalation	Consult a doctor immediately. Ensure supply of fresh air.
Skin contact	Immediate medical treatment necessary, as untreated burns can result in slow-healing wounds. In case of contact with skin wash off immediately with plenty of water.
Eye contact	Shield unaffected eye. In case of contact with eyes rinse thoroughly with plenty of water and seek medical advice.
Ingestion	Consult a doctor immediately. Rinse out mouth and give plenty of water to drink. Do not induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	Product itself is non-combustible. Fire extinguishing method of surrounding areas must be considered.
Extinguishing media that must not be used	Full water jet.

5.2 Special hazards arising from the substance or mixture

Hydrogen chloride (HCl).
Nitrogen oxides (NOx).



S.A. LIPMES
08243 Manresa (Barcelona)

Date printed 25.04.2022, Revision 25.04.2022

Version 04. Supersedes version: 03

Page 4 / 13

5.3 Advice for firefighters

Wear full protective suit.
Use self-contained breathing apparatus.

Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.

6.2 Environmental precautions

Prevent spread over a wide area (e.g. by containment or oil barriers).
Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Pick up with absorbent material (e.g. sand, sawdust, universal absorbent, diatomaceous earth).
Dispose of absorbed material in accordance within the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

No special measures necessary if used correctly.
No special measures necessary.
Do not eat, drink or smoke when using this product.
Clean skin thoroughly after work, apply skin cream.
Use barrier skin cream.
Contaminated work clothing should not be allowed out of the workplace.
Take off contaminated clothing and wash before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Provide acid-resistant floor.
Do not store with alkalis.
Keep container in a well-ventilated place.
Keep container tightly closed.

7.3 Specific end use(s)

See product use, SECTION 1.2
Usage only in accordance with the identified usages as stipulated in the CSR/CSA.



S.A. LIPMES
08243 Manresa (Barcelona)

Date printed 25.04.2022, Revision 25.04.2022

Version 04. Supersedes version: 03

Page 5 / 13

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored (GB)

Substance
Zinc chloride
CAS: 7646-85-7, EINECS/ELINCS: 231-592-0, EU-INDEX: 030-003-00-2, Reg-No.: 01-2119472431-44-XXXX
Long-term exposure: 1 mg/m ³ , fume
Short-term exposure (15-minute): 2 mg/m ³
Ammonium chloride
CAS: 12125-02-9, EINECS/ELINCS: 235-186-4, EU-INDEX: 017-014-00-8, Reg-No.: 01-2119487950-27-XXXX
Long-term exposure: 10 mg/m ³
Short-term exposure (15-minute): 20 mg/m ³

DNEL

Substance
Ammonium zinc chloride, CAS: 52628-25-8
Industrial, dermal, Long-term - systemic effects, 8.3 mg/kg bw/d (NOAEL) (AF=1)
Industrial, inhalative (dust), Long-term - systemic effects, 1 mg/m ³ (NOAEC) (AF=1)
general population, oral, Long-term - systemic effects, 0.83 mg/kg bw/d (NOAEL) (AF=1)
general population, dermal, Long-term - systemic effects, 8.3 mg/kg bw/d (NOAEL) (AF=1)
general population, inhalative (dust), Long-term - systemic effects, 1.3 mg/m ³ (NOAEC) (AF=1)
Ammonium chloride, CAS: 12125-02-9
Industrial, dermal, Long-term - systemic effects, 128.9 mg/kg
Industrial, inhalative, Long-term - systemic effects, 43.97 mg/m ³
general population, oral, Long-term - systemic effects, 55.2 mg/kg
general population, dermal, Long-term - systemic effects, 55.2 mg/kg
general population, inhalative, Long-term - systemic effects, 9.4 mg/m ³
Zinc chloride, CAS: 7646-85-7
Industrial, inhalative, Long-term - systemic effects, 1 mg/m ³ (AF=1)
Industrial, dermal, Long-term - systemic effects, 8.3 mg/kg bw/d (AF=1)
general population, inhalative, Long-term - systemic effects, 1.25 mg/m ³ (AF=1)
general population, dermal, Long-term - systemic effects, 8.3 mg/kg bw/d (AF=1)
general population, oral, Long-term - systemic effects, 0.83 mg/kg bw/d (AF=1)

PNEC

Substance
Ammonium zinc chloride, CAS: 52628-25-8
sediment (freshwater), 117.8 mg/kg dw (AF=1)
freshwater, 20.6 µg/l (AF=1)
sewage treatment plants (STP), 52 µg/l (AF=100)
sediment (seawater), 56.5 mg/kg dw (AF=1)
soil, 35.6 mg/kg dw (AF=1)
seawater, 6.1 µg/l (AF=1)
Ammonium chloride, CAS: 12125-02-9
freshwater, 0.25 mg/l
seawater, 0.025 mg/l
sediment (freshwater), 0.9 mg/kg



S.A. LIPMES
08243 Manresa (Barcelona)

Date printed 25.04.2022, Revision 25.04.2022

Version 04. Supersedes version: 03

Page 6 / 13

sewage treatment plants (STP), 13.1 mg/l
sediment (seawater), 0.09 mg/kg
soil, 50.7 mg/kg
Zinc chloride, CAS: 7646-85-7
freshwater, 20.6 µg/L (AF=1)
sewage treatment plants (STP), 100 µg/l (AF=1)
soil, 35.6 mg/kg dw (AF=1)
sediment (seawater), 56.5 mg/kg dw (AF=1)
sediment (freshwater), 117.8 mg/kg dw (AF=1)
seawater, 6.1 µg/L (AF=1)

8.2 Exposure controls

Additional advice on system design	Ensure adequate ventilation on workstation. Generic Exposure Scenarios only in accordance with the identified usages as stipulated in the CSR/CSA.
Eye protection	Tightly fitting goggles. (EN 166:2001)
Hand protection	The details concerned are recommendations. Please contact the glove supplier for further information. In full contact: > 0.4 mm/ Butyl rubber, >480 min (EN 374-1/-2/-3).
Skin protection	Acid-resistant protective clothing (EN 340)
Other	Avoid contact with eyes and skin. The product is to be handled only by regularly instructed technical personnel.
Respiratory protection	Breathing apparatus in the event of aerosol or mist formation. Short term: filter apparatus, filter P2. (DIN EN 143)
Thermal hazards	not applicable
Delimitation and monitoring of the environmental exposition	Comply with applicable environmental regulations limiting discharge to air, water and soil.



S.A. LIPMES
08243 Manresa (Barcelona)

Date printed 25.04.2022, Revision 25.04.2022

Version 04. Supersedes version: 03

Page 7 / 13

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Color	colourless
Odor	odourless
Odour threshold	not applicable
pH-value	acidic
pH-value [1%]	No information available.
Boiling point [°C]	No information available.
Flash point [°C]	not applicable
Flammability (solid, gas) [°C]	not applicable
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Oxidising properties	no
Vapour pressure/gas pressure [kPa]	No information available.
Density [g/cm ³]	No information available.
Relative density	not determined
Bulk density [kg/m ³]	not applicable
Solubility in water	miscible
Solubility other solvents	No information available.
Partition coefficient [n-octanol/water]	No information available.
Kinematic viscosity	not applicable
Relative vapour density	No information available.
Evaporation speed	No information available.
Melting point [°C]	No information available.
Auto-ignition temperature	not applicable
Decomposition temperature [°C]	not applicable
Particle characteristics	No information available.

9.2 Other information

No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reactions known if used as directed.

10.2 Chemical stability

Stable under normal ambient conditions (ambient temperature).

10.3 Possibility of hazardous reactions

Reactions with alkalis (lyes).

10.4 Conditions to avoid

Strong heating.

10.5 Incompatible materials

Various metals.



S.A. LIPMES
08243 Manresa (Barcelona)

Date printed 25.04.2022, Revision 25.04.2022

Version 04. Supersedes version: 03

Page 8 / 13

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute oral toxicity

Product
LD50, oral, Rat, 1100 - 1260 mg/kg (akt. Sub.)
Substance
Ammonium zinc chloride, CAS: 52628-25-8
LD50, oral, Rat, 1100 - 1260 mg/kg bw
Ammonium chloride, CAS: 12125-02-9
LD50, oral, Rat, 1650 mg/kg (IUCLID)
Zinc chloride, CAS: 7646-85-7
LD50, oral, Rat, 1100 mg/kg bw

Acute dermal toxicity

Substance
Zinc chloride, CAS: 7646-85-7
LD50, dermal, Rat, > 2000 mg/kg bw

Acute inhalational toxicity

Substance
Zinc chloride, CAS: 7646-85-7
LC50, inhalative, Rat, 1.975 mg/L (10 min)

Serious eye damage/irritation	Toxicological data of complete product are not available.
Skin corrosion/irritation	Toxicological data of complete product are not available. Product is caustic. Calculation method
Respiratory or skin sensitisation	Toxicological data of complete product are not available. No classification. Calculation method
Specific target organ toxicity — single exposure	Toxicological data of complete product are not available. May cause respiratory irritation. Calculation method
Specific target organ toxicity — repeated exposure	Toxicological data of complete product are not available. No classification. Calculation method
Mutagenicity	Based on available data, the classification criteria are not met.
Reproduction toxicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.
General remarks	The toxicological information is based on the main components.

11.2 Information on other hazards

Endocrine disrupting properties	No information available.
Other information	none



S.A. LIPMES
08243 Manresa (Barcelona)

Date printed 25.04.2022, Revision 25.04.2022

Version 04. Supersedes version: 03

Page 9 / 13

SECTION 12: Ecological information

12.1 Toxicity

Product
LC50, (96h), Pimephales promelas, 0.78/0.33 mg Zn/l (Lit.)
LC50, (96h), Oncorhynchus mykiss, 0.169 mg Zn/l (Lit.)
EC50, (48h), Ceriodaphnia dubia, 0.147 - 0.413 mg Zn/l (Lit.)

Substance
Ammonium zinc chloride, CAS: 52628-25-8
LC50, (48h), Daphnia magna, 100 - 800 µg/l
LC50, (96h), Oncorhynchus mykiss, 169 µg/l
Ammonium chloride, CAS: 12125-02-9
LC50, (96h), Salmo clarki, 123.8 - 166.6 mg/l (IUCLID)
EC50, (48h), Daphnia magna, > 100 mg/l (Lit.)
Zinc chloride, CAS: 7646-85-7
LC50, (48h), Daphnia magna, 1220 µg Zn/l
LC50, (96h), fish, 439 µg Zn/l
LC50, (96h), Pimephales promelas, 0.78 mg Zn/l (Lit.)
LC50, (96h), Oncorhynchus mykiss, 0.169 mg Zn/l
EC50, (48h), Ceriodaphnia dubia, 0.147 - 0.413 mg Zn/l (Lit.)
IC50, (72h), Selenastrum capricornutum, 0.136 mg Zn/l (Lit.)

12.2 Persistence and degradability

Behaviour in environment compartments

Behaviour in sewage plant not determined

Biological degradability not applicable

12.3 Bioaccumulative potential

Product has having no bioaccumulation potential.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

12.6 Endocrine disrupting properties

No information available.

12.7 Other adverse effects

Do not discharge product unmonitored into the environment.



S.A. LIPMES
08243 Manresa (Barcelona)

Date printed 25.04.2022, Revision 25.04.2022

Version 04. Supersedes version: 03

Page 10 / 13

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

Product

Dispose of as hazardous waste.

Waste no. (recommended) 060313*

Contaminated packaging

Packaging that cannot be cleaned should be disposed of as for product.
Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

Waste no. (recommended) 150110* packaging containing residues of or contaminated by hazardous substances

SECTION 14: Transport information

14.1 UN number or ID number

Transport by land according to ADR/RID 1840

Inland navigation (ADN) 1840

Marine transport in accordance with IMDG 1840

Air transport in accordance with IATA 1840



S.A. LIPMES
08243 Manresa (Barcelona)

Date printed 25.04.2022, Revision 25.04.2022



Version 04. Supersedes version: 03

Page 11 / 13

14.2 UN proper shipping name

Transport by land according to ADR/RID ZINC CHLORIDE SOLUTION

- Classification Code C1

- Label  

- ADR LQ 5 l

- ADR 1.1.3.6 (8.6) Transport category (tunnel restriction code) 3 (E)

Inland navigation (ADN) ZINC CHLORIDE SOLUTION

- Classification Code C1

- Label  

Marine transport in accordance with IMDG Zinc chloride, solution

- EMS F-A, S-B

- Label  

- IMDG LQ 5 l

Air transport in accordance with IATA Zinc chloride, solution

- Label 

14.3 Transport hazard class(es)

Transport by land according to ADR/RID 8 (N)

Inland navigation (ADN) 8 (N)

Marine transport in accordance with IMDG 8

Air transport in accordance with IATA 8

14.4 Packing group

Transport by land according to ADR/RID III

Inland navigation (ADN) III

Marine transport in accordance with IMDG III

Air transport in accordance with IATA III



S.A. LIPMES
08243 Manresa (Barcelona)

Date printed 25.04.2022, Revision 25.04.2022

Version 04. Supersedes version: 03

Page 12 / 13

14.5 Environmental hazards

Transport by land according to ADR/RID	yes
Inland navigation (ADN)	yes
Marine transport in accordance with IMDG	MARINE POLLUTANT
Air transport in accordance with IATA	yes

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

14.7 Maritime transport in bulk according to IMO instruments

No information available.

SECTION 15: Regulatory information

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

EEC-REGULATIONS	2008/98/EC 2000/532/EC; 2010/75/EU; 2004/42/EC; (EC) 648/2004; (EC) 1907/2006 (REACH); (EU) 1272/2008; 75/324/EEC ((EC) 2016/2037); (EU) 2020/878; (EU) 2016/131; (EU) 517/2014
TRANSPORT-REGULATIONS	ADR (2021); IMDG-Code (2021, 40. Amdt.); IATA-DGR (2022)
NATIONAL REGULATIONS (GB):	EH40/2005 Workplace exposure limits (Second edition, published December 2011); UK REACH; GB CLP.
- Observe employment restrictions for people	Observe employment restrictions for mothers-to-be and nursing mothers. Observe employment restrictions for young people.
- VOC (2010/75/CE)	not applicable

15.2 Chemical safety assessment

For this substance a chemical safety assessment has been carried out.

SECTION 16: Other information

16.1 Hazard statements (SECTION 3)

H400 Very toxic to aquatic life.
H319 Causes serious eye irritation.
H410 Very toxic to aquatic life with long lasting effects.
H335 May cause respiratory irritation.
H314 Causes severe skin burns and eye damage.
H302 Harmful if swallowed.



S.A. LIPMES

08243 Manresa (Barcelona)

Date printed 25.04.2022, Revision 25.04.2022

Version 04. Supersedes version: 03

Page 13 / 13

16.2 Abbreviations and acronyms:

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
 RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
 ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
 ATE = acute toxicity estimate
 CAS = Chemical Abstracts Service
 CLP = Classification, Labelling and Packaging
 DMEL = Derived Minimum Effect Level
 DNEL = Derived No Effect Level
 EC50 = Median effective concentration
 ECB = European Chemicals Bureau
 EEC = European Economic Community
 EINECS = European Inventory of Existing Commercial Chemical Substances
 EL50 = Median effective loading
 ELINCS = European List of Notified Chemical Substances
 EmS = Emergency Schedules
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
 IC50 = Inhibition concentration, 50%
 IMDG = International Maritime Code for Dangerous Goods
 IUCLID = International Uniform Chemical Information Database
 IVIS = In vitro irritation score
 LC50 = Lethal concentration, 50%
 LD50 = Median lethal dose
 LC0 = lethal concentration, 0%
 LOAEL = lowest-observed-adverse-effect level
 LL50 = Median lethal loading
 LQ = Limited Quantities
 MARPOL = International Convention for the Prevention of Marine Pollution from Ships
 NOAEL = No Observed Adverse Effect Level
 NOEC = No Observed Effect Concentration
 PBT = Persistent, Bioaccumulative and Toxic substance
 PNEC = Predicted No-Effect Concentration
 REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
 STP = Sewage Treatment Plant
 TLV@TWA = Threshold limit value – time-weighted average
 TLV@STEL = Threshold limit value – short-time exposure limit
 VOC = Volatile Organic Compounds
 vPvB = very Persistent and very Bioaccumulative

16.3 Other information**Customs Tariff**

not determined

Classification procedure

Acute Tox. 4: H302 Harmful if swallowed. (Calculation method)
 Skin Corr. 1B: H314 Causes severe skin burns and eye damage. (Calculation method)
 STOT SE 3: H335 May cause respiratory irritation. (Calculation method)
 Aquatic Acute 1: H400 Very toxic to aquatic life. (Calculation method)
 Aquatic Chronic 1: H410 Very toxic to aquatic life with long lasting effects. (Calculation method)

Modified position

none

Copyright: Chemiebüro®

Number (ES)	Exposure Scenario Title	Chemical product category [PC]	Life cycle stage covered by ES					Sector of use category [SU]	Process category [PROC]	Article Category [AC]	Environmental release category [ERC]	
			Manufacture	Formulation	End use							Service life
					Use at industrial site	Widespread use by professional workers	consumer use					
1	Ammonium zinc chloride recovery Manufacture (IU001)	19, 20, 21	X		X			X	8, 9	2, 3, 5, 9, 8b, 26	1	
8	Electroplating Manufacture (IU001)	7, 14	X		X			X	15, 17, 0.NACE C26.1.1:	3, 8b, 21	2, 7	2, 5
11	steel surface treatment prior to hot-dip galvanizing	38			X			X	8, 14, 15, 18, 19, 0.Nace C25.6.1	2, 4, 8b, 25, 13	1, 2, 3, 7	5, 8a, 10a, 11a
13	Laboratory reagents	19, 21, 28, 39	X		X	X		X	10, 24	1, 2, 3, 5, 8b, 9, 15		1, 2, 4, 6a, 6b, 8a, 8d
15	Zinc production by pyrometallurgy	7			X			X	14, 0.NACE C24.4.3	2, 8b, 23, 26		1
18	Production of coatings, paints, inks, enamels, varnishes	1, 9a, 9b, 9c, 14, 15, 18, 26, 32	X		X			X	5, 8, 9, 10, 11, 12, 13, 14	1, 2, 3, 4, 5, 8b, 9		1, 2, 3, 4, 5, 7
21	Use of AZC containing paper coatings in a mixture	1, 9a, 9b, 9c, 15, 18			X	X		X	6b, 10	4, 5, 6, 8b, 9, 10, 13, 19	0	8a, 8d, 10a, 10b
23	Use of AZC containing coatings for in a mixture	15, 23, 34			X			X	10, 5	4, 5, 6, 8b, 9, 13, 19	5, 6	8a, 8d, 10a, 11a
25	Batteries /fuel cells	14, 19, 20, 21		X	X			X	0.NACE- CodeC2 7.2, 16	13, 14, 3, 5	3	2, 5
27	Production of polymermatrices, plastics and related preparations	19, 20, 32, 33	X	X	X			X	10, 12	2, 3, 5, 6, 8b, 9, 10, 13, 14, 21, 24	1, 2, 3, 13	1, 3, 5, 6a
30	Additive / component for the production of Lubricants / Grease / Metal working fluids	14, 24, 25, 32		X	X	X	X	X	10, 18	3, 4, 5, 8b, 9, 10, 13	1, 2, 7	1, 3, 2, 5, 6a, 6d, 8b, 9a, 9b, 11a

Number (ES)	Exposure Scenario Title	Chemical product category [PC]	Life cycle stage covered by ES					Sector of use category [SU]	Process category [PROC]	Article Category [AC]	Environmental release category [ERC]	
			Manufacture	Formulation	End use							Service life
					Use at industrial site	Widespread use by professional workers	consumer use					
31	Use of AZC containing Lubricants / Grease / Metal working fluids	14, 24, 25, 32	X		X	X		X	17, 18	7, 8a, 8b, 9, 10, 11, 13, 14, 17, 19, 21	1, 11, 2, 7	8a, 8c, 8d, 8f
35	Additive component for production of de-icing products	4, 35, 20			X			X	8, 9	3, 5, 8b, 9		2, 5, 8c, 8f
38	Additive for the formulation of biocidal products	37, 8		X	X			X	9	5, 8b, 9		2
41	Additive for the formulation of fertilizers	12, 20, 21, 9b		X	X			X	1, 10, 8	1, 2, 3, 4, 5, 8b, 9, 13		2, 3, 5, 10a, 10b
45	Additive in the formulation of pharma / veterinary products	20, 21, 29		X	X			X	10, 9, 20, 0.Nace C21.1	8b, 9, 5, 3, 2, 13, 14, 15, 1		2, 5, 8a, 8d
12	Use of ammonium zinc chloride based fluxing agents before welding/soldering processes	25, 38, 8			X	X		X	16, 17, 18, 0.Nace C23.9.9	13, 2, 25, 4, 8b	1, 2, 3, 7	10a, 10b, 3, 5, 8a, 8d
29	Use of AZC containing Sealants / Adhesives	1, 14, 19, 20, 24, 32, 9a, 9b, 9c		X	X	X	X	X	5, 6a, 6b, 11, 12, 13, 15, 19	10, 11, 13, 14, 17, 19, 21, 7, 8b, 9	1, 2, 11, 7	8a, 8c, 8d
33	Use of AZC containing Polishes / wax blends	14, 25, 31, 9a, 9b, 9c		X		X	X	X	18, 9	10, 11, 13, 14, 19, 21, 7, 8a, 8b, 9	1, 2, 7, 11	8a, 8c, 8d, 8f
40	Use of AZC containing cleaning products	8, 35, 39		X		X	X	X	9	10, 11, 13, 8a, 8b, 9		8a
44	Use of cosmetics	28, 35, 39		X		X	X	X	9	10, 11, 8a, 8b, 9		8a
22	Textile and leather coating treatment	15, 19, 20, 21, 23, 34, 35, 9a			X			X	5, 8, 9, 10	3, 4, 5, 6, 8b, 9, 13	6, 5	6b, 3
24	Additive in the manufacturing of electric/electronic components	20, 33			X			X	0.NACE C26.1.1: , 10, 13, 16	3, 5, 8b, 9, 14, 22	2, 4	2, 5

Number (ES)	Exposure Scenario Title	Chemical product category [PC]	Life cycle stage covered by ES					Sector of use category [SU]	Process category [PROC]	Article Category [AC]	Environmental release category [ERC]	
			Manufacture	Formulation	End use							Service life
					Use at industrial site	Widespread use by professional workers	consumer use					
26	Component for production of rubber, resins and related preparations	9a, 9b, 18, 19, 20, 24, 33, 32	X	X	X			X	10, 11	3, 5, 6, 8b, 9, 10, 13, 14, 21, 24	10	2, 3, 4, 5, 6d, 10a, 11a
28	Additive / component for the production of Sealants / Adhesives / Mastics	1, 14, 19, 20, 24, 32, 9a		X	X			X	8, 10	10, 11, 13, 14, 20, 21, 24, 3, 5, 8b, 9	1, 2, 7, 11	1, 2, 3, 5, 6a, 6d, 8b, 8c, 10a, 10b, 11a
32	Additive / component for the production of Polishes / wax blends	9a, 9b, 9c, 14, 25, 31		X	X	X	X	X	10, 18, 9	10, 11, 13, 19, 3, 4, 5, 7, 8b, 9	1, 2, 7	1, 2, 3, 5, 6a, 6d, 8a, 8b
34	Use of AZC containing catalysts in a mixture	19, 2, 20, 40, 9a, 9b, 9c			X			X	10, 8, 9	2, 3, 5, 1, 14, 8b, 9		1, 4, 5, 6a, 6b
37	Additive for the formulation of animal feedstuffs	20, 29		X				X	4	3, 5, 8b, 9		2, 10a
39	Additive for the formulation of cleaning products	8, 35, 37		X	X			X	9, 10	5, 8b, 9		2, 8a, 8b
43	Additive in the formulation of cosmetics	28, 35, 39		X	X			X	10	1, 13, 14, 15, 2, 3, 5, 8b, 9		
36	Use of AZC containing de-icing products	4, 20, 35		X		X	X	X	9, 18	7, 8a, 8b, 9, 10, 11, 13, 14, 19, 21		8a, 10a
42	Use of AZC containing fertilizer's formulations	9b, 12, 20		X		X	X	X	9, 1	7, 8a, 8b, 9, 10, 11, 13, 19, 2, 26		8a, 8b, 8d, 8e, 9b, 10b
46	Use of of Pharma / veterinary products	20, 21, 29		X		X	X		20	8a, 8b, 9, 11, 10		8a
2	Ammonium zinc chloride production and refining Manufacture (IU001)	20, 21	X		X			X	8, 9	2.CS2, 3, 5, 8b, 9, 26		1
10	Production of Ammonium zinc chloride based fluxing agents Manufacture (IU001)	19, 20, 21	X		X			X	8, 9, 10	2, 3, 5, 8b, 9, 15		2, 5, 1, 6a

Number (ES)	Exposure Scenario Title	Chemical product category [PC]	Life cycle stage covered by ES					Sector of use category [SU]	Process category [PROC]	Article Category [AC]	Environmental release category [ERC]	
			Manufacture	Formulation	End use							Service life
					Use at industrial site	Widespread use by professional workers	consumer use					
14	Catalytic agent	20, 19			X	X		X	9, 10	4, 5, 8b, 9, 15	4, 6b	
20	Component for paper coating or treatment for paper products	9a, 15, 18, 21, 20, 23, 34, 35			X			X	6b, 7, 8, 9, 10	3, 4, 5, 6, 8b, 9, 13	6b, 2	