



S.A. LIPMES
08243 Manresa (Barcelona)

Date printed 25.04.2022, Revision 25.04.2022

Version 05. Supersedes version: 04

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

1.1 Product identifier

Zinc ammonium chloride Powder

Registration number	01-2119557900-37-0001
IUPAC	Ammonium zinc chloride
EINECS/ELINCS	258-054-8
CAS	52628-25-8

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
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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)
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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.

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 EINECS: 258-054-8

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

P260 Do not breathe dust.
P280 Wear protective gloves / protective clothing / eye protection / face protection.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P273 Avoid release to the environment.
P405 Store locked up.



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2.3 Other hazards

Environmental hazards The product/the substance has the Water Hazard Class 3.
Other hazards none

SECTION 3: Composition / Information on ingredients

3.1 Substances

The product is a substance.

Range [%]	Substance
> 94	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.

3.2 Mixtures

not applicable

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 Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Shield unaffected eye.
If eye irritation persists: Get medical advice/attention.

Ingestion Consult a doctor immediately.
Do not induce vomiting.
Rinse out mouth and give plenty of water to drink.

4.2 Most important symptoms and effects, both acute and delayed

No information available.



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4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
Forward this sheet to your doctor.

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).

5.3 Advice for firefighters

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

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

Avoid dust formation.
Use breathing apparatus if exposed to dust.
Use personal protective equipment.

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Take up mechanically.
Avoid raising dust.
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

Avoid the formation and deposition of dust.
Provide vacuuming if dust raised.
Use breathing apparatus when transferring large quantities without vacuuming facilities.

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.



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7.2 Conditions for safe storage, including any incompatibilities

Provide acid-resistant floor.

Do not store with alkalis.

Store in a dry place.

Keep container in a well-ventilated place.

Keep container tightly closed.

7.3 Specific end use(s)

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



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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



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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: Nitrile rubber, >480 min (EN 374-1/-2/-3). In splash contact: > 0.4 mm: Nitrile rubber, >480 min (EN 374-1/-2/-3).
Skin protection	Acid-resistant protective clothing (EN 340)
Other	Avoid contact with eyes and skin. Do not inhale dust.
Respiratory protection	Respiratory protection mask in the event of high concentrations. 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.



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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	powder
Color	white
Odor	odourless
Odour threshold	not applicable
pH-value	ca. 5 (100 g/l)
pH-value [1%]	No information available.
Boiling point [°C]	730
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]	<0.1 (20°C)
Density [g/cm ³]	2.9
Relative density	not determined
Bulk density [kg/m ³]	1800
Solubility in water	630 - 920 g/l (31° - 50° Bé)
Solubility other solvents	No information available.
Partition coefficient [n-octanol/water]	No information available.
Kinematic viscosity	not applicable
Relative vapour density	not applicable
Evaporation speed	not applicable
Melting point [°C]	318
Auto-ignition temperature	not applicable
Decomposition temperature [°C]	not determined
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

Reactions with damp air and moisture.
Strong heating.

10.5 Incompatible materials

Various metals.



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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 (CSA)
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	Product is caustic. Based on the available information, the classification criteria are fulfilled.
Respiratory or skin sensitisation	Non-sensitizing. Based on the available information, the classification criteria are not fulfilled.
Specific target organ toxicity — single exposure	May cause respiratory irritation. Based on the available information, the classification criteria are fulfilled.
Specific target organ toxicity — repeated exposure	Based on the available information, the classification criteria are not fulfilled.
Mutagenicity	Ames-test: negative. Based on the available information, the classification criteria are not fulfilled.
Reproduction toxicity	Based on the available information, the classification criteria are not fulfilled.
Carcinogenicity	Based on the available information, the classification criteria are not fulfilled.
Aspiration hazard	Based on the available information, the classification criteria are not fulfilled.
General remarks	

The toxicological data are those of the pure product.
The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists.

11.2 Information on other hazards

Endocrine disrupting properties	No information available.
Other information	No information available.



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SECTION 12: Ecological information

12.1 Toxicity

Product
LC50, (96h), Pimephales promelas, 0.78/0.33 mgZn/l (CSA)
LC50, (96h), Oncorhynchus mykiss, 0.169 mgZn/l (CSA)
EC50, (48h), Ceriodaphnia dubia, 0.147 - 0.413 mgZn/l (CSA)
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	not determined
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.



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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.
Coordinate disposal with the disposal contractor/authorities if necessary.

Waste no. (recommended) 060313*

Contaminated packaging

Uncontaminated packaging may be taken for recycling.
Packaging that cannot be cleaned should be disposed of as for product.

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 2331

Inland navigation (ADN) 2331

Marine transport in accordance with IMDG 2331

Air transport in accordance with IATA 2331



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14.2 UN proper shipping name

Transport by land according to ADR/RID Zinc chloride, anhydrous, mixture

- Classification Code C2



- Label  

- ADR LQ 5 kg

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



Inland navigation (ADN) Zinc chloride, anhydrous, mixture

- Classification Code C2

- Label  

Marine transport in accordance with IMDG Zinc chloride, anhydrous, mixture

- EMS F-A, S-B

- Label  

- IMDG LQ 5 kg

Air transport in accordance with IATA Zinc chloride, anhydrous, mixture

- 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



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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. Used data correspond to the CSReport of the manufacturer. The manufacturer is accountable for the accuracy.

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.



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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. (Weight of evidence)
Skin Corr. 1B: H314 Causes severe skin burns and eye damage. (Weight of evidence)
STOT SE 3: H335 May cause respiratory irritation. (Weight of evidence)
Aquatic Acute 1: H400 Very toxic to aquatic life. (Weight of evidence)
Aquatic Chronic 1: H410 Very toxic to aquatic life with long lasting effects. (Weight of evidence)

Modified position

none

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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	