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Safety data sheet

BASF safety data sheet. This is a translation of the country-specific safety data sheet into a language other than that required by law. This document does not replace the safety data sheet provided according to Regulation (EC) No 1907/2006.
Date / Revised: 26.07.2024 Version: 2.0
Date / Previous version: 16.12.2022 Previous version: 1.0
Product: **Ammonium Chloride RWT**
(ID no. 30714109/SDS_GEN_DE/EN)
Date of print 14.11.2024

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

1.1. Product identifier

Ammonium Chloride RWT

UFI: C6MR-H00H-E00K-03V5

The substance/mixture contains nanoforms.

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

Relevant identified uses: chemical for the chemical industry
Recommended use: Raw material, auxiliary, inorganic salts

For the detailed identified uses of the product see appendix of the safety data sheet.

1.3. Details of the supplier of the safety data sheet

Company:
BASF SE
67056 Ludwigshafen
GERMANY
Division Monomers

Telephone: +49 621 60 42737
E-mail address: pss.monomers@basf.com

1.4. Emergency telephone number

International emergency number:
Telephone: +49 180 2273-112

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

For the classification of the mixture the following methods have been applied: extrapolation on the concentration levels of the hazardous substances, on basis of test results and after evaluation of experts. The methodologies used are mentioned at the respective test results.

According to Regulation (EC) No 1272/2008 [CLP]

Acute Tox. 4 (oral)	H302 Harmful if swallowed.
Eye Dam./Irrit. 2	H319 Causes serious eye irritation.

For the classifications not written out in full in this section the full text can be found in section 16.

2.2. Label elements

According to Regulation (EC) No 1272/2008 [CLP]

Pictogram:

Signal Word:

Warning

Hazard Statement:

H319	Causes serious eye irritation.
H302	Harmful if swallowed.

Precautionary Statements (Prevention):

P280	Wear eye and face protection.
P270	Do not eat, drink or smoke when using this product.
P264	Wash contaminated skin thoroughly with plenty of water and soap after handling.

Precautionary Statements (Response):

P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330	Rinse mouth.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical attention.

Precautionary Statements (Disposal):

P501	Dispose of contents and container to hazardous or special waste collection point.

Hazard determining component(s) for labelling: ammonium chloride

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

No specific dangers known, if the regulations/notes for storage and handling are considered.
The product does not contain a substance above legal limits fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria.
Product does not contain a substance above legal limits included in the list established in accordance with Article 59(1) of Regulation (EC) No 1907/2006 for having endocrine disrupting properties or is identified to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.
If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Chemical nature

ammonium chloride
Contains:formulation auxiliary, anticaking agent

Regulatory relevant ingredients

ammonium chloride

Content (W/W): > 99 %	Acute Tox. 4 (oral)
CAS Number: 12125-02-9	Eye Dam./Irrit. 2
EC-Number: 235-186-4	H319, H302
REACH registration number: 01-2119487950-27, 01-2119489385-24	
INDEX-Number: 017-014-00-8	

For the classifications not written out in full in this section, including the hazard classes and the hazard statements, the full text is listed in section 16.

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

Remove contaminated clothing.

If inhaled:
After inhalation of decomposition products: Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:
Wash thoroughly with soap and water

On contact with eyes:
Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:
Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

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

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.

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

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media

Suitable extinguishing media:
water spray

5.2. Special hazards arising from the substance or mixture

Endangering substances: ammonia, anhydrous, hydrogen chloride
Advice: The substances/groups of substances mentioned can be released if the product is involved in a fire.

5.3. Advice for fire-fighters

Special protective equipment:
Wear a self-contained breathing apparatus.

Further information:
Product itself is non-combustible; fire extinguishing method of surrounding areas must be considered. In case of fire and/or explosion do not breathe fumes. Large quantities of extinguishing water containing dissolved product should be contained. Contaminated extinguishing water must be disposed of in accordance with official regulations.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective clothing.

6.2. Environmental precautions

Do not empty into drains.

6.3. Methods and material for containment and cleaning up

For residues: Pick up in dry form. Dispose of absorbed material in accordance with regulations.

6.4. Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice.

Protection against fire and explosion:
No special precautions necessary.

7.2. Conditions for safe storage, including any incompatibilities

Segregate from alkalies and alkalizing substances. Segregate from nitrites. Segregate from oxidants.
Do not store with: Sodium nitrate

Suitable materials for containers: Polyester resin, glass reinforced (Palatal A410), High density polyethylene (HDPE), Low density polyethylene (LDPE), Stainless steel 1.4571, rubberized, enamelled, Paper/Fibreboard
Further information on storage conditions: Protect against moisture.

Storage class according to TRGS 510 (originally VCI, Germany): (13) Non-combustible solids

7.3. Specific end use(s)

See exposure scenario(s) in the attachment to this safety data sheet.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Components with occupational exposure limits

The substance mentioned develops if the regulation/notes for storage and handling are not observed.

7647-01-0: hydrogen chloride
TWA value 8 mg/m3 ; 5 ppm (OEL (EU))
indicative
STEL value 15 mg/m3 ; 10 ppm (OEL (EU))
indicative
OEL 3 mg/m3 ; 2 ppm (TRGS 900 (DE))
Ceiling limit value/factor: 2
If the occupational exposure limit value (AGW) and the biological limit value (BGW) are complied with, there should be no risk of damage for the unborn child (see TRGS 900, Number 2.7)
Short Term Exposure Classification: (TRGS 900 (DE))
Category I: Substances for which the localized effect has an assigned exposure limit or for substances with a sensitizing effect in respiratory passages

7664-41-7: ammonia, anhydrous
STEL value 36 mg/m3 ; 50 ppm (OEL (EU))
indicative
TWA value 14 mg/m3 ; 20 ppm (OEL (EU))
indicative
OEL 14 mg/m3 ; 20 ppm (TRGS 900 (DE))
Ceiling limit value/factor: 2
If the occupational exposure limit value (AGW) and the biological limit value (BGW) are complied with, there should be no risk of damage for the unborn child (see TRGS 900, Number 2.7)
Short Term Exposure Classification: (TRGS 900 (DE))
Category I: Substances for which the localized effect has an assigned exposure limit or for substances with a sensitizing effect in respiratory passages

No substance specific occupational exposure limits known.

Components with PNEC

12125-02-9: ammonium chloride
freshwater: 0,25 mg/l
marine water: 0,025 mg/l
intermittent release: 0,43 mg/l
sediment (freshwater):
No hazard identified.
sediment (marine water):
No hazard identified.
soil: 50,7 mg/kg
STP:
No hazard identified.

Components with DNEL

12125-02-9: ammonium chloride

worker: Long-term exposure- systemic effects, Inhalation: 43,97 mg/m3
worker: Long-term exposure- systemic effects, dermal: 128,9 mg/kg
consumer: Long-term exposure- systemic effects, Inhalation: 9,4 mg/m3
consumer: Long-term exposure- systemic effects, dermal: 55,2 mg/kg
consumer: Long-term exposure- systemic effects, oral: 55,2 mg/kg

8.2. Exposure controls

Personal protective equipment

Respiratory protection:
Breathing protection if dusts are formed. Particle filter with low efficiency for solid particles (e.g. EN 143 or 149, Type P1or FFP1)

Hand protection:
Chemical resistant protective gloves (EN ISO 374-1)
Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1):
chloroprene rubber (CR) - 0.5 mm coating thickness
butyl rubber (butyl) - 0.7 mm coating thickness
nitrile rubber (NBR) - 0.4 mm coating thickness
fluoroelastomer (FKM) - 0.7 mm coating thickness
polyvinylchloride (PVC) - 0.7 mm coating thickness
Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.
Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection:
Safety glasses with side-shields (frame goggles) (e.g. EN 166)

General safety and hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Avoid inhalation of dusts. When using, do not eat, drink or smoke. Remove contaminated clothing immediately and clean before re-use or dispose it if necessary.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

State of matter:	solid
Form:	crystalline, powder
Colour:	white
Odour:	almost odourless
Odour threshold:	
	not applicable, odour not perceivable

Melting point:	338 °C Literature data. The substance / product decomposes.	
boiling temperature:	The substance / product decomposes therefore not determined.	
Sublimation point:	338 °C The substance / product decomposes.	
Flammability:	not flammable	(Regulation 440/2008/EC, A.10)
Lower explosion limit:	For solids not relevant for classification and labelling.	
Upper explosion limit:	For solids not relevant for classification and labelling.	
Flash point:	not applicable	
Auto-ignition temperature:	The substance / product decomposes therefore not determined.	
Self-ignition temperature:	not self-igniting	Test type: Self-ignition at high temperatures.
Thermal decomposition:	To avoid thermal decomposition, do not overheat.	
SADT:	Not a substance/mixture liable to self-decomposition according to GHS.	
pH value:	4,7 (200 g/l, 25 °C)	(DIN ISO 976)
Viscosity, dynamic:	not applicable, the product is a solid	
Solubility in water:	296 - 298 g/l (20 °C, pH 5,4)	(OECD Guideline 105)
Partitioning coefficient n-octanol/water (log Kow):	The value has not been determined because the substance is inorganic.	
Vapour pressure:	66 mbar (250 °C) Literature data.	
Density:	1,5274 g/cm3 (20 °C) Literature data.	

Particle characteristics

Particle size distribution:	100 - 125 µm	(D50, measured)

9.2. Other information

Information with regard to physical hazard classes

Explosives

Explosion hazard:	not explosive	(Regulation 440/2008/EC, A.14)
Impact sensitivity:	Based on the chemical structure there is no shock-sensitivity.	

Oxidizing properties

Fire promoting properties:	not fire-propagating	(Regulation 440/2008/EC, A.17)

Pyrophoric properties

Self-ignition temperature:		Test type: Spontaneous self-ignition at room-temperature.
	not self-igniting	

Self-heating substances and mixtures

Self heating ability:	It is not a substance capable of spontaneous heating.

Other safety characteristics

Bulk density:	600 - 900 kg/m3	(DIN ISO 697)
pKA:	not applicable	
Information on: ammonia, anhydrous		
pKA:	*Study scientifically not justified., The substance does not dissociate.*	

Hygroscopy:	hygroscopic
:	Study scientifically not justified.
Surface tension:	Based on chemical structure, surface activity is not to be expected.
Evaporation rate:	The product is a non-volatile solid.

SECTION 10: Stability and Reactivity

10.1. Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

10.2. Chemical stability

The product is chemically stable.

10.3. Possibility of hazardous reactions

Violent reaction under influence of oxidizing agents. Incompatible with bases. Reacts with nitrites. The product is stable if stored and handled as prescribed/indicated.

10.4. Conditions to avoid

Avoid heat. Avoid moisture. See SDS section 7 - Handling and storage.

10.5. Incompatible materials

Substances to avoid:
nitrites, nitrates, oxidizing agents

10.6. Hazardous decomposition products

Hazardous decomposition products:
hydrogen chloride, ammonia, anhydrous

SECTION 11: Toxicological Information

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

Acute toxicity

Assessment of acute toxicity:

Of moderate toxicity after single ingestion. Virtually nontoxic after a single skin contact.

Experimental/calculated data:

LD50 rat (oral): 1.410 mg/kg (BASF-Test)
(by inhalation):No data available.
LD50 rat (dermal): > 2.000 mg/kg (Directive 92/69/EEC, B.3)
No mortality was observed.

Irritation

Assessment of irritating effects:

Not irritating to the skin. Eye contact causes irritation.

Experimental/calculated data:

Skin corrosion/irritation

rabbit: non-irritant (Draize test)

Serious eye damage/irritation

rabbit: Irritant. (BASF-Test)

Respiratory/Skin sensitization

Assessment of sensitization:

Skin sensitizing effects were not observed in animal studies.

Experimental/calculated data:

Guinea pig maximization test guinea pig: Non-sensitizing. (similar to OECD guideline 406)

Germ cell mutagenicity

Assessment of mutagenicity:

In the majority of studies performed with microorganisms and in mammalian cell culture, a mutagenic effect was not found. A mutagenic effect was also not observed in in vivo tests.

Carcinogenicity

Assessment of carcinogenicity:
In long-term studies in rats in which the substance was given by feed, a carcinogenic effect was not observed.

Reproductive toxicity

Assessment of reproduction toxicity:
Study scientifically not justified.

Developmental toxicity

Assessment of teratogenicity:

No indications of a developmental toxic / teratogenic effect were seen in animal studies.

Specific target organ toxicity (single exposure)

Assessment of STOT single:
Apart from effects causing lethality, no specific target organ toxicity was observed in experimental studies.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:

Repeated oral uptake of the substance did not cause substance-related effects.

Aspiration hazard

not applicable

Interactive effects

No data available.

11.2. Information on other hazards

Endocrine disrupting properties

Product does not contain a substance above legal limits included in the list established in accordance with Article 59(1) of Regulation (EC) No 1907/2006 for having endocrine disrupting properties or is identified to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

SECTION 12: Ecological Information

12.1. Toxicity

Assessment of aquatic toxicity:
Harmful to aquatic life.
Acutely harmful for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish:
LC50 (96 h) 42,91 mg/l Ammonium chloride, Oncorhynchus mykiss (other, other)

Aquatic invertebrates:
EC50 (48 h) 136,6 mg/l, Daphnia magna (other, static)

Aquatic plants:
EC50 (5 d) 1.300 mg/l (growth rate), Chlorella vulgaris (other, static)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

EC50 (18 d) 2.700 mg/l (biomass), Chlorella vulgaris (other, static)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Microorganisms/Effect on activated sludge:
EC20 (0,5 h) approx. 850 mg/l, activated sludge, domestic (OECD Guideline 209, aquatic)

Chronic toxicity to fish:
EC10 (30 d) 4,28 mg/l ammonium chloride, Lepomis macrochirus (other, Flow through.)

Chronic toxicity to aquatic invertebrates:
EC10 (70 d) 2,52 mg/l ammonium chloride, aquatic crustacea (other, semistatic)

Assessment of terrestrial toxicity:
Toxic effects have been observed in studies with soil living organisms.

Soil living organisms:
LC50 (14 d) 163 mg/kg, Eisenia foetida (other, artificial soil)

Terrestrial plants:
No observed effect concentration (84 d) 626 mg/l
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Other terrestrial non-mammals:
Study scientifically not justified.

12.2. Persistence and degradability

Assessment biodegradation and elimination (H2O):
Inorganic product which cannot be eliminated from water by biological purification processes. Can be oxidized to nitrate, or be reduced to nitrogen, by microorganisms.

Elimination information:
not applicable

Assessment of stability in water:
According to structural properties, hydrolysis is not expected/probable.
Study scientifically not justified.

Information on Stability in Water (Hydrolysis):
Study scientifically not justified.

12.3. Bioaccumulative potential

Assessment bioaccumulation potential:
Accumulation in organisms is not to be expected.

Bioaccumulation potential:
Accumulation in organisms is not to be expected.

12.4. Mobility in soil

Assessment transport between environmental compartments:
Volatility: The substance will not evaporate into the atmosphere from the water surface. Study scientifically not justified.
Adsorption in soil: Adsorption to solid soil phase is possible.

12.5. Results of PBT and vPvB assessment

The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative). Not applicable for inorganic substances.

12.6. Endocrine disrupting properties

Product does not contain a substance above legal limits included in the list established in accordance with Article 59(1) of Regulation (EC) No 1907/2006 for having endocrine disrupting properties or is identified to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

12.7. Other adverse effects

The substance is not listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

Additional information

Add. remarks environm. fate & pathway:
The product has not been tested. The statements on environmental fate and pathway have been derived from the properties of the individual components.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Contact manufacturer regarding recycling.
Contact waste centre regarding recycling.

Contaminated packaging:
Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

SECTION 14: Transport Information

Land transport

ADR

	Not classified as a dangerous good under transport regulations
UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

RID

	Not classified as a dangerous good under transport regulations
UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

Inland waterway transport
ADN

	Not classified as a dangerous good under transport regulations
UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user:	None known

Transport in inland waterway vessel
Not evaluated

Sea transport

IMDG

	Not classified as a dangerous good under transport regulations
UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

Air transport

IATA/ICAO

	Not classified as a dangerous good under transport regulations
UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

14.1. UN number or ID number
See corresponding entries for “UN number or ID number” for the respective regulations in the tables above.

14.2. UN proper shipping name
See corresponding entries for “UN proper shipping name” for the respective regulations in the tables above.

14.3. Transport hazard class(es)
See corresponding entries for “Transport hazard class(es)” for the respective regulations in the tables above.

14.4. Packing group
See corresponding entries for “Packing group” for the respective regulations in the tables above.

14.5. Environmental hazards
See corresponding entries for “Environmental hazards” for the respective regulations in the tables above.

14.6. Special precautions for user
See corresponding entries for “Special precautions for user” for the respective regulations in the tables above.

14.7. Maritime transport in bulk according to IMO instruments

Maritime transport in bulk is not intended.

Further information
Specific national features of transport regulations must be observed. They are to be found in the shipping documents.

SECTION 15: Regulatory Information

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

Prohibitions, Restrictions and Authorizations

Annex XVII of Regulation (EC) No 1907/2006: Number on List: 75

Hazardous Incident Ordinance (Germany):
Listed in above regulation: no
Classification applies for standard conditions of temperature and pressure.

Directive 2012/18/EU - Control of Major Accident Hazards involving dangerous substances (EU):
Listed in above regulation: no
Classification applies for standard conditions of temperature and pressure.

Classification according to 'TA-Luft' (Germany):

5.2.1: total dust, including fine dust

Water hazard class (§6 AwSV para.4 (Legal binding announcement of the substance in the Federal Gazette)): (1) Weakly water polluting. ID-No.: 213

15.2. Chemical Safety Assessment

Chemical Safety Assessment performed

SECTION 16: Other Information

Assessment of the hazard classes according to UN GHS criteria (most recent version)

Acute Tox. 4 (oral)
Aquatic Acute 3
Eye Dam./Irrit. 2A

chemical industry

Full text of the classifications, including the hazard classes and the hazard statements, if mentioned in section 2 or 3:

Acute Tox.	Acute toxicity
Eye Dam./Irrit.	Serious eye damage/eye irritation
H319	Causes serious eye irritation.
H302	Harmful if swallowed.

Abbreviations
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road. ADN = The European Agreement concerning the International Carriage of Dangerous Goods by Inland waterways. ATE = Acute Toxicity Estimates. CAO = Cargo Aircraft Only. CAS = Chemical Abstract Service. CLP = Classification, Labelling and Packaging of substances and mixtures. DIN = German national organization for standardization. DNEL = Derived No Effect Level. EC50 = Effective concentration median for 50% of the population. EC = European Community. EN = European Standards. IARC = International Agency for Research on Cancer. IATA = International Air Transport Association. IBC-Code = Intermediate Bulk Container code. IMDG = International Maritime Dangerous Goods Code. ISO = International Organization for Standardization. STEL = Short-Term Exposure Limit. LC50 = Lethal concentration median for 50% of the population. LD50 = Lethal dose median for 50% of the population. TLV = Threshold Limit Value. MARPOL = The International Convention for the Prevention of Pollution from Ships. NEN = Dutch Norm. NOEC = No Observed Effect Concentration. OEL = Occupational Exposure Limit. OECD = Organization for Economic Cooperation and Development. PBT = Persistent, Bioaccumulative and Toxic. PNEC = Predicted No Effect Level. PPM = Parts per million. RID = The European Agreement concerning the International Carriage of Dangerous Goods by Rail. TWA = Time Weight Average. UN-number = UN number at transport. vPvB = very Persistent and very Bioaccumulative.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

Vertical lines in the left hand margin indicate an amendment from the previous version.

Annex: Exposure Scenarios

Index

12. Use as Reactive process agent, Use in/as Fertilizers, Use in Metallurgy, Use in Metal surface treatment, Use in Textile finishing, Use in Biotechnology, Use in leather tanning, finishing, impregnation, Professional applications, (outdoor use)
PW; SU5, SU10, SU14, SU15; ERC8e; PROC2, PROC3, PROC4, PROC5, PROC6, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC14, PROC19, PROC26

13. Use in Wood articles, Service life of articles, Consumer applications
C; C; ERC10a, ERC11a; AC11

14. Use in Biotechnology, Industrial applications
ERC6a, ERC6b; PROC4, PROC9

15. Use in Metal surface treatment, Consumer applications
C; C; ERC8b, ERC8e; PC14, PC38

16. Use in/as Fertilizers, Consumer applications
C; C; ERC8b, ERC8e; PC12, PC27

17. Use in Adhesives, Use in Surface treatment products, Wood treatment, Use in Wood articles, Consumer applications
C; C; ERC8c, ERC8f; PC1

18. Use in Batteries, Consumer applications
C; C; ERC9a, ERC9b; PC42

19. Use in Batteries, Service life of articles, Consumer applications
C; C; ERC10a, ERC11a, ERC12a; AC3

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1. Short title of exposure scenario

Manufacture of substance, Distribution of substance, Industrial applications
IS; IS; ERC1; PROC1, PROC2, PROC3, PROC4, PROC8b, PROC9, PROC15

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC1: Manufacture of the substance As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions. Use domain: industrial

Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,0343 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000266
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,01 mg/m³
Risk Characterization Ratio (RCR)	0,000227
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker

	Worker - dermal, long-term - systemic
Exposure estimate	1,3714 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,010639
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,5 mg/m³
Risk Characterization Ratio (RCR)	0,011371
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,6857 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00532
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC4: Chemical production where opportunity for exposure arises Use domain: industrial
Operational conditions	

Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395

Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC15: Use a laboratory reagent. Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa

Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,3429 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00266
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,5 mg/m³
Risk Characterization Ratio (RCR)	0,011371
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

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2. Short title of exposure scenario

Formulation & (re)packing of substances and mixtures, Industrial applications
IS; IS; ERC2; PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC13, PROC14, PROC15, PROC19, PROC26

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC2: Formulation into mixture As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions. Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance	130 Pa

during use	
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,0343 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000266
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,01 mg/m³
Risk Characterization Ratio (RCR)	0,000227
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	1,3714 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,010639
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,5 mg/m³
Risk Characterization Ratio (RCR)	0,011371

Guidance to Downstream Users
For scaling see: http://www.ecetoc.org/tra

Contributing exposure scenario	
Use descriptors covered	PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,6857 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00532
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC4: Chemical production where opportunity for exposure arises Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C

Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC5: Mixing or blending in batch processes Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario

Use descriptors covered	PROC8a: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	

Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC13: Treatment of articles by dipping and pouring. Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride

	Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC14: Tabletting, compression, extrusion, pelletisation, granulation Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	3,4286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,026599
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker

	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC15: Use a laboratory reagent. Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,3429 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00266
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,5 mg/m³
Risk Characterization Ratio (RCR)	0,011371
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC19: Manual activities involving hand contact Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C

Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable chemically resistant gloves.	Effectiveness: 80 %
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	28,2857 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,219439
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC26: Handling of solid inorganic substances at ambient temperature Use domain: industrial
Operational conditions	
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	Qualitative assessment
Additional good practice advice	
There is no corresponding TRA entry concerning PROC 26 and thus, calculation of PROC 26 with TRA is not possible. To approximately map the activities described by PROC 26, PROC 5, 8b and 9 were used. PROC 8b and 9 were used to address the transfer, packaging, unpacking, and weighing while PROC 5 addresses mixing and blending activities	
There is no corresponding TRA entry concerning PROC 26 and thus, calculation of PROC 26 with TRA is not possible. To approximately map the activities described by PROC 26, PROC 5, 8b and 9 were used. PROC 8b and 9 were used to address the transfer, packaging, unpacking, and weighing while PROC 5 addresses mixing and blending activities	

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3. Short title of exposure scenario

Formulation & (re)packing of substances and mixtures, (solid preparations), Industrial applications

IS; IS; ERC3; PROC2, PROC3, PROC4, PROC5, PROC6, PROC8b, PROC9, PROC13, PROC14, PROC15, PROC19, PROC26

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC3: Formulation into solid matrix As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	1,3714 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,010639
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,5 mg/m³
Risk Characterization Ratio (RCR)	0,011371
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent

	containment condition Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,6857 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00532
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC4: Chemical production where opportunity for exposure arises Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	

Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC5: Mixing or blending in batch processes Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC6: Calendering operations Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %

Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	27,4286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,21279
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³

Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC13: Treatment of articles by dipping and pouring. Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week

Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC14: Tabletting, compression, extrusion, pelletisation, granulation Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	3,4286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,026599
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC15: Use a laboratory reagent.

	Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,3429 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00266
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,5 mg/m³
Risk Characterization Ratio (RCR)	0,011371
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC19: Manual activities involving hand contact Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable chemically resistant gloves.	Effectiveness: 80 %
Use suitable eye protection.	
Exposure estimate and reference to its source	

Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	28,2857 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,219439
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC26: Handling of solid inorganic substances at ambient temperature Use domain: industrial
Operational conditions	
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	Qualitative assessment
Additional good practice advice	
There is no corresponding TRA entry concerning PROC 26 and thus, calculation of PROC 26 with TRA is not possible. To approximately map the activities described by PROC 26, PROC 5, 8b and 9 were used. PROC 8b and 9 were used to address the transfer, packaging, unpacking, and weighing while PROC 5 addresses mixing and blending activities	
There is no corresponding TRA entry concerning PROC 26 and thus, calculation of PROC 26 with TRA is not possible. To approximately map the activities described by PROC 26, PROC 5, 8b and 9 were used. PROC 8b and 9 were used to address the transfer, packaging, unpacking, and weighing while PROC 5 addresses mixing and blending activities	

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4. Short title of exposure scenario

Use as a Process chemical, Use in Metallurgy, Use for Electroplating, Use in Textile finishing, Use in Biotechnology, Use in leather tanning, finishing, impregnation, Industrial applications
IS; SU5, SU9, SU14, SU15, SU24; ERC4; PROC2, PROC3, PROC4, PROC5, PROC6, PROC8b, PROC9, PROC10, PROC13, PROC15, PROC22, PROC23, PROC24, PROC25, PROC26

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC4: Use of non-reactive processing aid at industrial site

	(no inclusion into or onto article) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	1,3714 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,010639
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,5 mg/m³
Risk Characterization Ratio (RCR)	0,011371
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %

Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,6857 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00532
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC4: Chemical production where opportunity for exposure arises Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic

Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC5: Mixing or blending in batch processes Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC6: Calendering operations Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week

Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	27,4286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,21279
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC9: Transfer of substance or preparation into small

	containers (dedicated filling line, including weighing). Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC10: Roller application or brushing Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker

	Worker - dermal, long-term - systemic
Exposure estimate	27,4286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,21279
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC13: Treatment of articles by dipping and pouring. Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC15: Use a laboratory reagent. Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness

Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,3429 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00266
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,5 mg/m³
Risk Characterization Ratio (RCR)	0,011371
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC22: Manufacturing and processing of minerals and/or metals at substantially elevated temperature Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, low dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	2,8286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,021944
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743

Guidance to Downstream Users
For scaling see: http://www.ecetoc.org/tra

Contributing exposure scenario	
Use descriptors covered	PROC23: Open processing and transfer operations at substantially elevated temperature Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, low dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	1,4143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,010972
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC24: High (mechanical) energy work-up of substances bound in /on materials and/or articles Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, low dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week

Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	2,8286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,021944
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC25: Other hot work operations with metals Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, low dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,2829 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,002194
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC26: Handling of solid inorganic substances at ambient temperature

	Use domain: industrial
Operational conditions	
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	Qualitative assessment
Additional good practice advice	
There is no corresponding TRA entry concerning PROC 26 and thus, calculation of PROC 26 with TRA is not possible. To approximately map the activities described by PROC 26, PROC 5, 8b and 9 were used. PROC 8b and 9 were used to address the transfer, packaging, unpacking, and weighing while PROC 5 addresses mixing and blending activities	
There is no corresponding TRA entry concerning PROC 26 and thus, calculation of PROC 26 with TRA is not possible. To approximately map the activities described by PROC 26, PROC 5, 8b and 9 were used. PROC 8b and 9 were used to address the transfer, packaging, unpacking, and weighing while PROC 5 addresses mixing and blending activities	

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5. Short title of exposure scenario

Use in Batteries, Production, (solid preparations), Industrial applications
IS; SU6b, SU8, SU16; ERC5; PROC2, PROC3, PROC4, PROC5, PROC6, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15, PROC19, PROC21, PROC26

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC5: Use at industrial site leading to inclusion into/onto article As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride

	Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	1,3714 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,010639
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,5 mg/m³
Risk Characterization Ratio (RCR)	0,011371
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,6857 mg/kg bw/day

Risk Characterization Ratio (RCR)	0,00532
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC4: Chemical production where opportunity for exposure arises Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC5: Mixing or blending in batch processes Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance	130 Pa

during use	
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC6: Calendering operations Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	27,4286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,21279
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor

Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC10: Roller application or brushing Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	27,4286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,21279
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC13: Treatment of articles by dipping and pouring. Use domain: industrial
Operational conditions	

Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC14: Tabletting, compression, extrusion, pelletisation, granulation Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	3,4286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,026599

Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC15: Use a laboratory reagent. Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,3429 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00266
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,5 mg/m³
Risk Characterization Ratio (RCR)	0,011371
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC19: Manual activities involving hand contact Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C

Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable chemically resistant gloves.	Effectiveness: 80 %
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	28,2857 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,219439
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC21: Low energy manipulation and handling of substances bound in/on materials or articles Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	2,8286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,021944
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	3 mg/m³
Risk Characterization Ratio (RCR)	0,068228
Guidance to Downstream Users	

For scaling see: http://www.ecetoc.org/tra

Contributing exposure scenario	
Use descriptors covered	PROC26: Handling of solid inorganic substances at ambient temperature Use domain: industrial
Operational conditions	
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	Qualitative assessment
Additional good practice advice	
There is no corresponding TRA entry concerning PROC 26 and thus, calculation of PROC 26 with TRA is not possible. To approximately map the activities described by PROC 26, PROC 5, 8b and 9 were used. PROC 8b and 9 were used to address the transfer, packaging, unpacking, and weighing while PROC 5 addresses mixing and blending activities	
There is no corresponding TRA entry concerning PROC 26 and thus, calculation of PROC 26 with TRA is not possible. To approximately map the activities described by PROC 26, PROC 5, 8b and 9 were used. PROC 8b and 9 were used to address the transfer, packaging, unpacking, and weighing while PROC 5 addresses mixing and blending activities	

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6. Short title of exposure scenario

Use as an intermediate, Production of Fertilizers, Formulation of catalysts, Industrial applications
IS; SU1, SU8; ERC6a; PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC13, PROC14, PROC15, PROC26

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC6a: Use of intermediate As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

	Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	1,3714 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,010639
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,5 mg/m³
Risk Characterization Ratio (RCR)	0,011371
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	

Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,6857 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00532
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC4: Chemical production where opportunity for exposure arises Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC5: Mixing or blending in batch processes Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride

	Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC8a: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker

	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa

Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC13: Treatment of articles by dipping and pouring. Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC14: Tabletting, compression, extrusion, pelletisation, granulation Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	3,4286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,026599
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC15: Use a laboratory reagent. Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	

Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,3429 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00266
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,5 mg/m³
Risk Characterization Ratio (RCR)	0,011371
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC26: Handling of solid inorganic substances at ambient temperature Use domain: industrial
Operational conditions	
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	Qualitative assessment
Additional good practice advice	
There is no corresponding TRA entry concerning PROC 26 and thus, calculation of PROC 26 with TRA is not possible. To approximately map the activities described by PROC 26, PROC 5, 8b and 9 were used. PROC 8b and 9 were used to address the transfer, packaging, unpacking, and weighing while PROC 5 addresses mixing and blending activities	
There is no corresponding TRA entry concerning PROC 26 and thus, calculation of PROC 26 with TRA is not possible. To approximately map the activities described by PROC 26, PROC 5, 8b and 9 were used. PROC 8b and 9 were used to address the transfer, packaging, unpacking, and weighing while PROC 5 addresses mixing and blending activities	

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7. Short title of exposure scenario

Use as Reactive process agent, Use in Metallurgy, Use in Metal surface treatment, Use in Textile finishing, Use in leather tanning, finishing, impregnation, Use in Biotechnology, Industrial applications IS; SU5, SU9, SU14, SU15, SU24; ERC6b; PROC2, PROC3, PROC4, PROC5, PROC6, PROC8b, PROC9, PROC10, PROC13, PROC15, PROC22, PROC23, PROC25, PROC26

Control of exposure and risk management measures

Contributing exposure scenario

Use descriptors covered	ERC6b: Use of reactive processing aid at industrial site (no inclusion into or onto article) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	1,3714 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,010639
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,5 mg/m³
Risk Characterization Ratio (RCR)	0,011371
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride

	Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,6857 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00532
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC4: Chemical production where opportunity for exposure arises Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker

	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC5: Mixing or blending in batch processes Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC6: Calendering operations Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C

Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	27,4286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,21279
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario

Use descriptors covered	PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC10: Roller application or brushing Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic

Exposure estimate	27,4286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,21279
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC13: Treatment of articles by dipping and pouring. Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC15: Use a laboratory reagent. Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance	130 Pa

during use	
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,3429 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00266
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,5 mg/m³
Risk Characterization Ratio (RCR)	0,011371
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC22: Manufacturing and processing of minerals and/or metals at substantially elevated temperature Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, low dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	2,8286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,021944
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	

For scaling see: http://www.ecetoc.org/tra

Contributing exposure scenario	
Use descriptors covered	PROC23: Open processing and transfer operations at substantially elevated temperature Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, low dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	1,4143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,010972
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC25: Other hot work operations with metals Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, low dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor

Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,2829 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,002194
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC26: Handling of solid inorganic substances at ambient temperature Use domain: industrial
Operational conditions	
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	Qualitative assessment
Additional good practice advice	
There is no corresponding TRA entry concerning PROC 26 and thus, calculation of PROC 26 with TRA is not possible. To approximately map the activities described by PROC 26, PROC 5, 8b and 9 were used. PROC 8b and 9 were used to address the transfer, packaging, unpacking, and weighing while PROC 5 addresses mixing and blending activities	
There is no corresponding TRA entry concerning PROC 26 and thus, calculation of PROC 26 with TRA is not possible. To approximately map the activities described by PROC 26, PROC 5, 8b and 9 were used. PROC 8b and 9 were used to address the transfer, packaging, unpacking, and weighing while PROC 5 addresses mixing and blending activities	

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8. Short title of exposure scenario

Use as Cross-linking agent, Production of woodbased materials (panels, bricks, etc), Production of bonded fibers or fiber mats
IS; SU6a; ERC6d; PROC6, PROC14

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC6d: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	PROC6: Calendering operations Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	27,4286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,21279
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC14: Tabletting, compression, extrusion, pelletisation, granulation Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride

	Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	3,4286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,026599
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

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9. Short title of exposure scenario

Use as a Process chemical, Professional applications, (indoor use)
PW; SU1, SU8; ERC8a; PROC2, PROC3, PROC4, PROC5, PROC8b, PROC9, PROC13, PROC14, PROC15, PROC19, PROC26

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC8a: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions Use domain: professional

Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	1,3714 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,010639
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker

	Worker - dermal, long-term - systemic
Exposure estimate	0,6857 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00532
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC4: Chemical production where opportunity for exposure arises Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC5: Mixing or blending in batch processes Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %

Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³

Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC13: Treatment of articles by dipping and pouring. Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week

Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC14: Tabletting, compression, extrusion, pelletisation, granulation Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	3,4286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,026599
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC15: Use a laboratory reagent.

	Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,3429 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00266
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,5 mg/m³
Risk Characterization Ratio (RCR)	0,011371
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC19: Manual activities involving hand contact Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable chemically resistant gloves.	Effectiveness: 80 %
Use suitable eye protection.	
Exposure estimate and reference to its source	

Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	28,2857 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,219439
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC26: Handling of solid inorganic substances at ambient temperature Use domain: professional
Operational conditions	
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	Qualitative assessment
Additional good practice advice	
There is no corresponding TRA entry concerning PROC 26 and thus, calculation of PROC 26 with TRA is not possible. To approximately map the activities described by PROC 26, PROC 5, 8b and 9 were used. PROC 8b and 9 were used to address the transfer, packaging, unpacking, and weighing while PROC 5 addresses mixing and blending activities	
There is no corresponding TRA entry concerning PROC 26 and thus, calculation of PROC 26 with TRA is not possible. To approximately map the activities described by PROC 26, PROC 5, 8b and 9 were used. PROC 8b and 9 were used to address the transfer, packaging, unpacking, and weighing while PROC 5 addresses mixing and blending activities	

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10. Short title of exposure scenario

Use as Reactive process agent, Use in/as Fertilizers, Use in Metallurgy, Use in Metal surface treatment, Use in Textile finishing, Use in Biotechnology, Professional applications, (indoor use)
PW; SU5, SU14, SU15; ERC8b; PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC11, PROC13, PROC14, PROC15, PROC19, PROC23, PROC26

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC8b: Widespread use of reactive processing aid (no

	inclusion into or onto article, indoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	1,3714 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,010639
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %

Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,6857 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00532
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1 mg/m³
Risk Characterization Ratio (RCR)	0,022743
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC4: Chemical production where opportunity for exposure arises Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic

Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC5: Mixing or blending in batch processes Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC6: Calendering operations Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week

Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	27,4286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,21279
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC8a: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	10 mg/m³
Risk Characterization Ratio (RCR)	0,227428
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or mixture (charging and

	discharging) at dedicated facilities Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	

Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC11: Non industrial spraying Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - < 1 %
Physical state	liquid
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
	Any sized room
Application rate	> 3 l/min
Risk Management Measures	
Ensure that the task is carried out only downward.	
Surface spraying with no or low compressed air use.	
Ensure doors and windows are opened (general ventilation).	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	10,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,083121
Assessment method	EASY TRA v4.2, Advanced REACH Tool v1.5
	Worker - inhalation, long-term - systemic
Exposure estimate	12 mg/m³
Risk Characterization Ratio (RCR)	0,272913
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC11: Non industrial spraying Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - < 1 %
Physical state	liquid
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
	Any sized room
Application rate	> 3 l/min
Risk Management Measures	
Ensure that the task is carried out only downward.	
Ensure doors and windows are opened (general ventilation).	
Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m).	
Ensure that the worker is in a personal enclosure	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	10,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,083121
Assessment method	EASY TRA v4.2, Advanced REACH Tool v1.5
	Worker - inhalation, long-term - systemic
Exposure estimate	21 mg/m³
Risk Characterization Ratio (RCR)	0,477598
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC13: Treatment of articles by dipping and pouring. Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %

Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC14: Tabletting, compression, extrusion, pelletisation, granulation Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	3,4286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,026599
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic

Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC15: Use a laboratory reagent. Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,3429 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00266
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,5 mg/m³
Risk Characterization Ratio (RCR)	0,011371
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC19: Manual activities involving hand contact Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week

Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable chemically resistant gloves.	Effectiveness: 80 %
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	28,2857 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,219439
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC23: Open processing and transfer operations at substantially elevated temperature Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, low dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	1,4143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,010972
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	3 mg/m³
Risk Characterization Ratio (RCR)	0,068228
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC26: Handling of solid inorganic substances at ambient temperature Use domain: professional
Operational conditions	
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	Qualitative assessment
Additional good practice advice	
There is no corresponding TRA entry concerning PROC 26 and thus, calculation of PROC 26 with TRA is not possible. To approximately map the activities described by PROC 26, PROC 5, 8b and 9 were used. PROC 8b and 9 were used to address the transfer, packaging, unpacking, and weighing while PROC 5 addresses mixing and blending activities	
There is no corresponding TRA entry concerning PROC 26 and thus, calculation of PROC 26 with TRA is not possible. To approximately map the activities described by PROC 26, PROC 5, 8b and 9 were used. PROC 8b and 9 were used to address the transfer, packaging, unpacking, and weighing while PROC 5 addresses mixing and blending activities	

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11. Short title of exposure scenario

Use as a Process chemical, Professional applications, (outdoor use)
PW; SU1, SU8, SU10; ERC8d; PROC2, PROC3, PROC4, PROC5, PROC8b, PROC9, PROC13, PROC14, PROC15, PROC19, PROC26

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC8d: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions Use domain: professional

Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	1,3714 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,010639
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,7 mg/m³
Risk Characterization Ratio (RCR)	0,01592
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	

Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,6857 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00532
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,7 mg/m³
Risk Characterization Ratio (RCR)	0,01592
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC4: Chemical production where opportunity for exposure arises Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	3,5 mg/m³
Risk Characterization Ratio (RCR)	0,0796
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC5: Mixing or blending in batch processes Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %

Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	3,5 mg/m³
Risk Characterization Ratio (RCR)	0,0796
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic

Exposure estimate	3,5 mg/m³
Risk Characterization Ratio (RCR)	0,0796
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	3,5 mg/m³
Risk Characterization Ratio (RCR)	0,0796
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC13: Treatment of articles by dipping and pouring. Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C

Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	3,5 mg/m³
Risk Characterization Ratio (RCR)	0,0796
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC14: Tabletting, compression, extrusion, pelletisation, granulation Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	3,4286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,026599
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	3,5 mg/m³
Risk Characterization Ratio (RCR)	0,0796
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario

Use descriptors covered	PROC15: Use a laboratory reagent. Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,3429 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00266
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,35 mg/m³
Risk Characterization Ratio (RCR)	0,00796
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC19: Manual activities involving hand contact Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	
Use suitable chemically resistant gloves.	Effectiveness: 80 %
Use suitable eye protection.	

Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	28,2857 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,219439
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	3,5 mg/m³
Risk Characterization Ratio (RCR)	0,0796
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC26: Handling of solid inorganic substances at ambient temperature Use domain: professional
Operational conditions	
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	Qualitative assessment
Additional good practice advice	
There is no corresponding TRA entry concerning PROC 26 and thus, calculation of PROC 26 with TRA is not possible. To approximately map the activities described by PROC 26, PROC 5, 8b and 9 were used. PROC 8b and 9 were used to address the transfer, packaging, unpacking, and weighing while PROC 5 addresses mixing and blending activities	
There is no corresponding TRA entry concerning PROC 26 and thus, calculation of PROC 26 with TRA is not possible. To approximately map the activities described by PROC 26, PROC 5, 8b and 9 were used. PROC 8b and 9 were used to address the transfer, packaging, unpacking, and weighing while PROC 5 addresses mixing and blending activities	

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12. Short title of exposure scenario

Use as Reactive process agent, Use in/as Fertilizers, Use in Metallurgy, Use in Metal surface treatment, Use in Textile finishing, Use in Biotechnology, Use in leather tanning, finishing, impregnation, Professional applications, (outdoor use)
PW; SU5, SU10, SU14, SU15; ERC8e; PROC2, PROC3, PROC4, PROC5, PROC6, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC14, PROC19, PROC26

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC8e: Widespread use of reactive processing aid (no inclusion into or onto article, outdoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	1,3714 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,010639
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,7 mg/m³
Risk Characterization Ratio (RCR)	0,01592
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Use domain: professional

Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,6857 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00532
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,7 mg/m³
Risk Characterization Ratio (RCR)	0,01592
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC4: Chemical production where opportunity for exposure arises Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day

Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	3,5 mg/m³
Risk Characterization Ratio (RCR)	0,0796
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC5: Mixing or blending in batch processes Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	3,5 mg/m³
Risk Characterization Ratio (RCR)	0,0796
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC6: Calendering operations Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa

Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	27,4286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,21279
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	3,5 mg/m³
Risk Characterization Ratio (RCR)	0,0796
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	3,5 mg/m³
Risk Characterization Ratio (RCR)	0,0796
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	3,5 mg/m³
Risk Characterization Ratio (RCR)	0,0796
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC10: Roller application or brushing Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	

Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	27,4286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,21279
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	3,5 mg/m³
Risk Characterization Ratio (RCR)	0,0796
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC11: Non industrial spraying Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - < 1 %
Physical state	liquid
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Application rate	> 3 l/min
Risk Management Measures	
Ensure that the task is carried out only downward.	
Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m).	
Ensure that the worker is in a personal enclosure	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	10,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,083121
Assessment method	EASY TRA v4.2, Advanced REACH Tool v1.5
	Worker - inhalation, long-term - systemic
Exposure estimate	0,26 mg/m³
Risk Characterization Ratio (RCR)	0,005913

Guidance to Downstream Users
For scaling see: http://www.ecetoc.org/tra

Contributing exposure scenario	
Use descriptors covered	PROC11: Non industrial spraying Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - < 1 %
Physical state	liquid
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Application rate	> 3 l/min
Risk Management Measures	
Ensure that the task is carried out only downward.	
Surface spraying with no or low compressed air use.	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	10,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,083121
Assessment method	EASY TRA v4.2, Advanced REACH Tool v1.5
	Worker - inhalation, long-term - systemic
Exposure estimate	3,2 mg/m³
Risk Characterization Ratio (RCR)	0,072777
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC13: Treatment of articles by dipping and pouring. Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa

Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	13,7143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,106395
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	3,5 mg/m³
Risk Characterization Ratio (RCR)	0,0796
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC14: Tabletting, compression, extrusion, pelletisation, granulation Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	3,4286 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,026599
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	3,5 mg/m³
Risk Characterization Ratio (RCR)	0,0796
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC19: Manual activities involving hand contact Use domain: professional
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	
Use suitable chemically resistant gloves.	Effectiveness: 80 %
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	28,2857 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,219439
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	3,5 mg/m³
Risk Characterization Ratio (RCR)	0,0796
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC26: Handling of solid inorganic substances at ambient temperature Use domain: professional
Operational conditions	
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	Qualitative assessment
Additional good practice advice	

There is no corresponding TRA entry concerning PROC 26 and thus, calculation of PROC 26 with TRA is not possible. To approximately map the activities described by PROC 26, PROC 5, 8b and 9 were used. PROC 8b and 9 were used to address the transfer, packaging, unpacking, and weighing while PROC 5 addresses mixing and blending activities
There is no corresponding TRA entry concerning PROC 26 and thus, calculation of PROC 26 with TRA is not possible. To approximately map the activities described by PROC 26, PROC 5, 8b and 9 were used. PROC 8b and 9 were used to address the transfer, packaging, unpacking, and weighing while PROC 5 addresses mixing and blending activities

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13. Short title of exposure scenario

Use in Wood articles, Service life of articles, Consumer applications
C; C; ERC10a, ERC11a; AC11

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC10a: Widespread use of articles with low release (outdoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	ERC11a: Widespread use of articles with low release (indoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	AC11-3: Wood and wood furniture: toys.
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 2 %
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	365 uses per year

Duration and Frequency of activity	365 uses per year
body weight	7,2 kg
Uptake fraction dermal	100 %
Uptake fraction oral	100 %
	Amount per use 10 g Relevant for dermal exposure estimates
	Amount ingested 0,1 g Relevant for oral exposure estimates
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	27,7778 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,503221
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Oral model: direct intake, Uptake model: Uptake fraction
	Consumer - oral, long-term - systemic
Exposure estimate	0,2778 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,005032
	The calculation is based on the internal chronic dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	AC11-1: Wood and wood furniture: flooring.
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 5 %
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	365 uses per year
body weight	65 kg
Uptake fraction dermal	100 %
	Amount per use 8,75 g Relevant for dermal exposure estimates
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant

	application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	6,7308 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,121934
	The calculation is based on the internal chronic dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	AC11: Wood articles
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 10 %
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	182 uses per year
Duration and Frequency of activity	182 uses per year
body weight	7,2 kg
Uptake fraction dermal	100 %
Uptake fraction oral	100 %
	Amount per use 0,56 g Relevant for dermal exposure estimates
	Amount ingested 0,1 g Relevant for oral exposure estimates
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	3,8782 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,070258
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Oral model: direct intake, Uptake model: Uptake fraction
	Consumer - oral, long-term - systemic
Exposure estimate	0,6925 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,012546
	The calculation is based on the internal chronic dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	AC11-2: Wood and wood furniture: furniture.
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 10 %
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	365 uses per year
body weight	65 kg
Uptake fraction dermal	100 %
	Amount per use 8,75 g Relevant for dermal exposure estimates
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	13,4615 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,243868
	The calculation is based on the internal chronic dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

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14. Short title of exposure scenario

Use in Biotechnology, Industrial applications
ERC6a, ERC6b; PROC4, PROC9

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC6a: Use of intermediate As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	ERC6b: Use of reactive processing aid at industrial site (no inclusion into or onto article)

	As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	PROC4: Chemical production where opportunity for exposure arises Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid, medium dustiness
Vapour pressure of the substance during use	130 Pa

Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	6,8571 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053197
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,113714
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

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15. Short title of exposure scenario

Use in Metal surface treatment, Consumer applications
C; C; ERC8b, ERC8e; PC14, PC38

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC8b: Widespread use of reactive processing aid (no inclusion into or onto article, indoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	ERC8e: Widespread use of reactive processing aid (no inclusion into or onto article, outdoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	PC14: Metal surface treatment products, including galvanic and electroplating products.

Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	240 uses per year
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, Other consideration (non-standard tool)
	Consumer - dermal, long-term - systemic
Exposure estimate	2,8 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,050725
Assessment method	EASY TRA v4.2, Other consideration (non-standard tool)
	Consumer - inhalation, long-term - systemic
Exposure estimate	5 mg/m³
Risk Characterization Ratio (RCR)	0,531915
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PC38: Welding and soldering products, flux products.
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 4 h 240 uses per year
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, Other consideration (non-standard tool)
	Consumer - dermal, long-term - systemic
Exposure estimate	0,3 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,005435
Assessment method	EASY TRA v4.2, Other consideration (non-standard tool)
	Consumer - inhalation, long-term - systemic
Exposure estimate	6 mg/m³
Risk Characterization Ratio (RCR)	0,638298
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

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16. Short title of exposure scenario

Use in/as Fertilizers, Consumer applications
C; C; ERC8b, ERC8e; PC12, PC27

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC8b: Widespread use of reactive processing aid (no inclusion into or onto article, indoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	ERC8e: Widespread use of reactive processing aid (no inclusion into or onto article, outdoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	PC12: Fertilizers.
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 35 %
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	12 uses per year
Exposed skin area	Both hands (820 cm²)
Uptake fraction dermal	100 %
Uptake fraction oral	100 %
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA, Consumer
	Consumer - dermal, long-term - systemic
Exposure estimate	2,0008 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,036247

Assessment method	EASY TRA v4.2, ECETOC TRA, Consumer
	Consumer - oral, long-term - systemic
Exposure estimate	0,42 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,007609
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PC27: Plant Protection products.
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 35 %
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	1 uses per month
Duration and Frequency of activity	1 uses per month
body weight	65 kg
Uptake fraction dermal	100 %
Uptake fraction oral	100 %
	Amount per use 8,6 g Relevant for dermal exposure estimates
	Amount ingested 0,3 g Relevant for oral exposure estimates
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	1,5436 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,027964
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Oral model: direct intake, Uptake model: Uptake fraction
	Consumer - oral, long-term - systemic
Exposure estimate	0,0538 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000975
	The calculation is based on the internal chronic dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

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17. Short title of exposure scenario

Use in Adhesives, Use in Surface treatment products, Wood treatment, Use in Wood articles, Consumer applications
C; C; ERC8c, ERC8f; PC1

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC8c: Widespread use leading to inclusion into/onto article (indoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	ERC8f: Widespread use leading to inclusion into/onto article (outdoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	PC1_2: Subcategory: Glues DIY-use (carpet glue, tile glue, wood parquet glue)
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 20 %
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 10 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 10 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	< 1 uses per year
Room size	1 m3
Ventilation rate per hour	0,6
Temperature (Application)	20 °C
body weight	65 kg

Uptake fraction dermal	100 %
	Amount per use 0,2 g Relevant for dermal exposure estimates
Release area	320 cm²
	Release area is constant
Release duration	10 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0006 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000011
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0194 mg/m³
Risk Characterization Ratio (RCR)	0,002064
	The exposure calculation is based on the mean concentration per year.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC1_2: Subcategory: Glues DIY-use (carpet glue, tile glue, wood parquet glue)
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 30 %
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 75 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 75 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	< 1 uses per year
Room size	58 m3
Ventilation rate per hour	0,5
Temperature (Application)	20 °C
body weight	65 kg

Uptake fraction dermal	100 %
Release area	40000 cm²
	Release area is constant
Release duration	75 min
	Relevant for inhalative exposure estimates
Contact rate	30 mg/min
Release duration	75 min
	Relevant for dermal exposure estimates
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: constant application rate, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0071 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000129
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0978 mg/m³
Risk Characterization Ratio (RCR)	0,010405
	The exposure calculation is based on the mean concentration per year.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC1_2: Subcategory: Glues DIY-use (carpet glue, tile glue, wood parquet glue)
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 30 %
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 240 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 240 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	< 1 uses per year
Room size	58 m3
Ventilation rate per hour	0,5
Temperature (Application)	20 °C
body weight	65 kg

Uptake fraction dermal	100 %
	Amount per use 0,5 g Relevant for dermal exposure estimates
Release area	10000 cm²
	Release area is constant
Release duration	240 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0016 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000029
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,1408 mg/m³
Risk Characterization Ratio (RCR)	0,014979
	The exposure calculation is based on the mean concentration per year.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC1_2: Subcategory: Glues DIY-use (carpet glue, tile glue, wood parquet glue)
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 20 %
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 480 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 480 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	< 1 uses per year
Room size	58 m3
Ventilation rate per hour	0,5
Temperature (Application)	20 °C
body weight	65 kg
Uptake fraction dermal	100 %

Release area	10000 cm²
	Release area is constant
Release duration	480 min
	Relevant for inhalative exposure estimates
Contact rate	30 mg/min
Release duration	480 min
	Relevant for dermal exposure estimates
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: constant application rate, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0152 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000275
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,3041 mg/m³
Risk Characterization Ratio (RCR)	0,032355
	The exposure calculation is based on the mean concentration per year.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC1_2: Subcategory: Glues DIY-use (carpet glue, tile glue, wood parquet glue)
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 30 %
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 240 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 30 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	2 uses per year
Room size	20 m3
Ventilation rate per hour	0,6
Temperature (Application)	20 °C
body weight	65 kg
Uptake fraction dermal	100 %

	Amount per use 0,25 g Relevant for dermal exposure estimates
Release area	10000 cm²
	Release area increases over time
Release duration	30 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0063 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000115
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	1,2723 mg/m³
Risk Characterization Ratio (RCR)	0,135346
	The exposure calculation is based on the mean concentration per year.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC1_1: Subcategory: Glues, hobby use
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 30 %
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 240 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 5 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	12 uses per year
Room size	20 m3
Ventilation rate per hour	0,6
Temperature (Application)	20 °C
body weight	65 kg
Uptake fraction dermal	100 %
	Amount per use 0,025 g Relevant for dermal exposure

	estimates
Release area	2 cm²
	Release area increases over time
Release duration	5 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0038 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000069
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0155 mg/m³
Risk Characterization Ratio (RCR)	0,001647
	The exposure calculation is based on the mean concentration per year.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC1_1: Subcategory: Glues, hobby use
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 30 %
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 5 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 5 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	3 uses per year
Room size	1 m3
Ventilation rate per hour	0,6
Temperature (Application)	20 °C
body weight	65 kg
Uptake fraction dermal	100 %
	Amount per use 0,05 g Relevant for dermal exposure estimates
Release area	20 cm²

	Release area is constant
Release duration	5 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0019 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000034
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0763 mg/m³
Risk Characterization Ratio (RCR)	0,008118
	The exposure calculation is based on the mean concentration per year.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC1_1: Subcategory: Glues, hobby use
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 30 %
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 240 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 30 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	3 uses per year
Room size	20 m3
Ventilation rate per hour	0,6
Temperature (Application)	20 °C
body weight	65 kg
Uptake fraction dermal	100 %
	Amount per use 0,1 g Relevant for dermal exposure estimates
Release area	500 cm²
	Release area increases over time
Release duration	30 min

	Relevant for inhalative exposure estimates
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0038 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000069
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,153 mg/m³
Risk Characterization Ratio (RCR)	0,01628
	The exposure calculation is based on the mean concentration per year.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC1_1: Subcategory: Glues, hobby use
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 30 %
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 45 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 30 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	3 uses per year
Room size	10 m3
Ventilation rate per hour	2
Temperature (Application)	20 °C
body weight	65 kg
Uptake fraction dermal	100 %
Release area	250 cm²
	Release area increases over time
Release duration	30 min
	Relevant for inhalative exposure estimates
Contact rate	50 mg/min
Release duration	30 min
	Relevant for dermal exposure estimates

Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: constant application rate, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0569 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,001031
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,2373 mg/m³
Risk Characterization Ratio (RCR)	0,025246
	The exposure calculation is based on the mean concentration per year.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC1_1: Subcategory: Glues, hobby use
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 30 %
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 240 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 30 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	1 uses per year
Room size	20 m3
Ventilation rate per hour	0,6
Temperature (Application)	20 °C
body weight	65 kg
Uptake fraction dermal	100 %
	Amount per use 0,5 g Relevant for dermal exposure estimates
Release area	15000 cm²
	Release area increases over time
Release duration	30 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant

	application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0063 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000115
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,9541 mg/m³
Risk Characterization Ratio (RCR)	0,101499
	The exposure calculation is based on the mean concentration per year.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC1_1: Subcategory: Glues, hobby use
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 5 %
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 240 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 10 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	52 uses per year
Room size	20 m3
Ventilation rate per hour	0,6
Temperature (Application)	20 °C
body weight	65 kg
Uptake fraction dermal	100 %
	Amount per use 0,08 g Relevant for dermal exposure estimates
Release area	200 cm²
	Release area increases over time
Release duration	10 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic

Exposure estimate	0,0088 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000159
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	1,411 mg/m³
Risk Characterization Ratio (RCR)	0,150111
	The exposure calculation is based on the mean concentration on the day of exposure.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC1_1: Subcategory: Glues, hobby use
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 5 %
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 240 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 20 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	52 uses per year
Room size	20 m3
Ventilation rate per hour	0,6
Temperature (Application)	20 °C
body weight	65 kg
Uptake fraction dermal	100 %
	Amount per use 0,08 g Relevant for dermal exposure estimates
Release area	400 cm²
	Release area increases over time
Release duration	20 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0088 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000159

	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	1,5604 mg/m³
Risk Characterization Ratio (RCR)	0,166004
	The exposure calculation is based on the mean concentration on the day of exposure.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC1_3: Subcategory: Glue from spray
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 10 %
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 240 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	12 uses per year
Room size	20 m3
Ventilation rate per hour	0,6
body weight	65 kg
Uptake fraction dermal	100 %
Spray duration	169,8 sec
Contact rate	100 mg/min
Release duration	2,83 min
	Relevant for dermal exposure estimates
Risk Management Measures	
Consumer Measures	Ensure spraying away from persons.
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: constant application rate, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000259
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model: Exposure to spray/dust
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,1799 mg/m³

Risk Characterization Ratio (RCR)	0,019135
	The exposure calculation is based on the mean concentration per year.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

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18. Short title of exposure scenario

Use in Batteries, Consumer applications
C; C; ERC9a, ERC9b; PC42

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC9a: Widespread use of functional fluid (indoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	ERC9b: Widespread use of functional fluid (outdoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	PC42: Electrolytes for batteries Use in closed system is assumed Exposure of the consumer can be ruled out.
Operational conditions	
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C

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19. Short title of exposure scenario

Use in Batteries, Service life of articles, Consumer applications
C; C; ERC10a, ERC11a, ERC12a; AC3

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC10a: Widespread use of articles with low release (outdoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	ERC11a: Widespread use of articles with low release (indoor) As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	ERC12a: Processing of articles at industrial sites with low release As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.
Operational conditions	

Contributing exposure scenario	
Use descriptors covered	AC3: Electrical batteries and accumulators Use in closed system is assumed Exposure of the consumer can be ruled out.
Operational conditions	
Vapour pressure of the substance during use	130 Pa
Process temperature	20 °C

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