



9.3. Exposure scenario 3: Use at industrial sites - Use of silver nitrate in coating

Product category used: PC 7: Base metals and alloys; PC 14: Metal surface treatment products; PC 15: Non-metal-surface treatment products; PC 20: Products such as ph-regulators, flocculants, precipitants, neutralization agents

Sector of use: SU 13: Manufacture of other non-metallic mineral products, e.g. plasters, cement; SU 16: Manufacture of computer, electronic and optical products, electrical equipment; SU 24: Scientific research and development

Environment contributing scenario(s):			SPERC
CS 1	Use of silver nitrate in coating	ERC 5	Eurometaux SPERC 5.1.v3
CS 2	Use of silver nitrate in coating - no emissions to water	ERC 5	
Worker contributing scenario(s):			SWED
CS 3	Chemical production where opportunity for exposure arises	PROC 4	
CS 4	Mixing or blending in batch processes	PROC 5	
CS 5	Industrial spraying	PROC 7	
CS 6	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)	PROC 9	
CS 7	Roller application or brushing	PROC 10	
CS 8	Treatment of articles by dipping and pouring	PROC 13	
CS 9	Production of metal powders (wet processes)	PROC 27b	
CS 10	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions	PROC 2	
CS 11	Transfer of substance or mixture (charging/discharging) at dedicated facilities	PROC 8b	
CS 12	Manual activities involving hand contact	PROC 19	
CS 13	Manual maintenance (cleaning and repair) of machinery	PROC 28	

Subsequent service life exposure scenario(s):

ES10: Service life (consumers) - Service life of articles coated with metallic silver

9.3.1. Env CS 1: Use of silver nitrate in coating (ERC 5)

Assessment entity group used for the assessment of this contributing scenario: ENV RA

9.3.1.1. Conditions of use

Amount used, frequency and duration of use (or from service life)
<ul style="list-style-type: none"> Annual use amount at site: ≤ 0.5 tonnes/year <i>All the amounts are expressed as Ag as this is the driver for the environmental risk assessment.</i>
<ul style="list-style-type: none"> Daily use amount at site: $\leq 2.3E-3$ tonnes/day <i>220 days per year is the 10th percentile of reported site-specific number of emission days for 97 sites. Default number of emission days are derived from a multi-metal background database of measured site-specific release factors collected under the former Directive of New and Existing Substances and REACH 2010 registration dossiers.</i>
Technical and organisational conditions and measures
<ul style="list-style-type: none"> On site treatment of off-air: Electrostatic precipitators or wet electrostatic precipitators or cyclones or fabric/bag filter or ceramic/metal mesh filter according to the BAT Reference Document in the Non-Ferrous Metals Industry



<p><i>Direct air emissions should be reduced by implementing one or more of the following RMMs (air concentration range for which the RMM is suitable is specified in parenthesis):</i></p> <ul style="list-style-type: none"> • <i>Electrostatic precipitators using wide electrode spacing: 5 – 15 mg/Nm³</i> • <i>Wet electrostatic precipitators: < 5 mg/Nm³</i> • <i>Cyclones, but as primary collector: < 50 mg/Nm³</i> • <i>Fabric or bag filters: high efficiency in controlling fine particulate (melting): achieve emission values < 5mg/Nm³. Membrane filtration techniques can achieve < 1 mg/Nm³</i> • <i>Ceramic and metal mesh filters. PM10 particles are removed: 0.1 mg/Nm³</i> <p><i>Wet scrubbers: < 4 mg/Nm³</i></p>
<ul style="list-style-type: none"> • <i>On site treatment of wastewater: Chemical precipitation or sedimentation or filtration or electrolysis or reverse osmosis or ion exchange according to the BAT Reference Document in the Non-Ferrous Metals Industry (2017) applying minimum xx% removal efficiency</i> <p><i>Direct water emissions should be reduced by implementing one or more of the following RMMs:</i></p> <ul style="list-style-type: none"> • <i>Chemical precipitation: used primarily to remove the metal ions (e.g. the use of Ca(OH)₂ to a pH 11: >99% removal efficiency; the use of Fe(OH)₃ to a pH 11: 96% removal efficiency)</i> • <i>Sedimentation (e.g. Na₂S, pH 11, >99% removal efficiency) • Filtration: used as final clarification step (e.g. ultrafiltration, pH 5.1: 93% removal efficiency, nanofiltration: 97% removal efficiency, reverse osmosis, pH 4-11: 99% removal efficiency)</i> • <i>Electrolysis: for low metal concentration at about 2 g/L (e.g. electrodialysis: 13% removal efficiency within 2 hours, membrane electrolysis, electrochemical precipitation, pH 4-10, >99% removal efficiency) • Reverse osmosis: extensively used for the removal of dissolved metals; Ion exchange: final cleaning step in the removal of heavy metal from process wastewater (e.g. 90% removal efficiency for clinoptinolite and 100% removal efficiency for synthetic zeolite)</i> <p><i>Following the Integrated Pollution Prevention and Control – BAT Reference note document, the treatment methods are very much dependent on the specific processes and the metals involved. More information can be found in the BAT Reference Document for the Non-Ferrous Metals Industry (2017).</i></p>
<p>Conditions and measures related to biological sewage treatment plant</p> <ul style="list-style-type: none"> • <i>Biological STP: Site specific [Effectiveness Water: 80.1%]</i> • <i>Discharge rate of STP: >= 2E3 m3/day</i> • <i>Application of the STP sludge on agricultural soil: No</i>
<p>Conditions and measures related to external treatment of waste (including article waste)</p> <ul style="list-style-type: none"> • <i>Particular considerations on the waste treatment operations: No (low concentration)</i> <p><i>Particular risks from waste treatment unlikely due low concentration of substance in waste stream. Waste disposal according to national/local legislation is sufficient. If the metal content of the waste is elevated enough, internal or external recovery/recycling is considered.</i></p>

Fate (release percentage) in the biological sewage treatment plant

The biological STP is site specific and the releases to the various compartments have been set by the assessor for some assessment entities. They are distributed in the following way:

Assessment entities	Ag dissolved
Release to water	19.9%
Release to air	0%
Release to sludge	80.1%
Release degraded	0%

Explanation for Ag dissolved:

Based on available monitoring data and values cited in the literature.

9.3.1.2. Releases

The releases have been estimated on the basis of SPERC Eurometaux SPERC 5.1.v3: Industrial use of metals and metal compounds in metallic coating

Modification date: 09/09/2021

Description of activities/processes covered by the SPERC



Since metal SPERCs are based on measured data at end-of-pipe on-site, all indicated PROCs are integrated in the release fractions from raw materials handling to cleaning and maintenance. A distinction can be made between hot dip batch process, continuous hot dip process and continuous electroplating process. Electroplating is a plating process that uses electrical current to reduce cations of a desired material from a solution and coat a conductive object with a thin layer of the material, such as a metal. Mechanical milling to remove oxide layers. Pickling. Chemical treatment or blasting of internal tube surfaces. Cleaning and stain removal. Polishing. Pre-patination. Raw materials handling and storing of produced substances are also included in this SPERC. Release defaults are derived from measured emissions.

Product/substance domain:

Scope of the SPERC

User groups: Industrial use of metals and metal compounds in plating, galvanising.

Substance groups or functions:

Metal (compounds). Included in the metal definition (Eurometaux SPERCs): alkali metals, alkaline earth metals, transition metals, post-transition metals, metalloids and their compounds

Excluded from the metal definition: non-metals, halogens, noble gases and metallo-organic compounds.

SPERC valid for metals with solid water partition coefficient for suspended matter between 25,000 L/kg and 400,000 L/kg.

Types of products: Metal and/or metal compounds (solid, powder, salts in solution)

Sub-SPERC Eurometaux SPERC 5.1.v3 is used for Ag dissolved:

Explanation for the release factor to water:

release after STP

Default release factors are derived from a multi-metal background database of measured site-specific release factors collected from peer-reviewed EU Risk Assessment Reports under the former Directive of New and Existing Substances and REACH 2010 registration dossiers.

The 90th percentile of reported site-specific release factors to wastewater for 114 sites.

Explanation for the release factor to air:

release after RMM

Default release factors are derived from a multi-metal background database of measured site-specific release factors collected from peer-reviewed EU Risk Assessment Reports under the former Directive of New and Existing Substances and REACH 2010 registration dossiers.

The 90th percentile of reported site-specific release factors to air for 97 sites.

Explanation for the release factor to soil:

ERC default

The local releases to the environment are reported in the following table.

Table 9.36. Local releases to the environment

Release	Assessment entity	Release factor	Local release rate
Water	Ag dissolved	0.5%	0.011 kg/day
Air	Ag dissolved	0.2%	4.6E-3 kg/day
Non agricultural soil	Ag dissolved	1%	- kg/day

Releases to waste

Release factor to external waste: 1 %

Default release factors are derived from a multi-metal background database of measured site-specific release factors collected from peer-reviewed EU Risk Assessment Reports under the former Directive of New and Existing Substances and REACH 2010 registration dossiers.

The 90th percentile of reported site-specific release factors to solid waste for 32 downstream user sites covering zinc, nickel, lead, antimony

9.3.1.3. Exposure and risks for the environment and man via the environment

The exposure concentrations and risk characterisation ratios (RCR) are reported in the following table. The exposure estimates have been obtained with EUSES 2.1.2 unless stated otherwise.

Table 9.37. Exposure concentrations and risks for the environment and man via the environment



Protection target	Assessment entity	Exposure concentration	Risk quantification
Fresh water	Ag dissolved	Local PEC: 3.57E-5 mg/L RCR = 0.776	Final RCR = 0.776
Sediment (freshwater)	Ag dissolved	Local PEC: 6.806 mg/kg dw RCR = 0.016	Final RCR = 0.016
Marine water	Ag dissolved	Local PEC: 4.88E-6 mg/L RCR = 5.67E-3	Final RCR < 0.01
Sediment (marine water)	Ag dissolved	Local PEC: 0.929 mg/kg dw RCR = 2.12E-3	Final RCR < 0.01
Sewage Treatment Plant	Ag dissolved	Local PEC: 1.14E-3 mg/L RCR = 0.046	Final RCR = 0.046
Agricultural soil	Ag dissolved	Local PEC: 0.096 mg/kg dw RCR = 0.092	Final RCR = 0.092
Man via environment - Inhalation (systemic effects)	Ag dissolved	Concentration in air: 8.47E-7 mg/m ³ RCR = 5.65E-6	Final RCR < 0.01
Man via environment - Oral	Ag dissolved	Exposure via food consumption: 3.84 µg/kg bw/day (Measured data: See section 9.0.3.6) RCR = 0.035	Final RCR = 0.035
Man via environment - combined routes			Final RCR = 0.035

Remarks on measured exposure:

See section 9.0.3.6 for Ag dissolved:

Identity of the substance used: Ag

Explanation: Worst case exposure of 3.84 µg Ag/kg bw/day from food (section 9.0.3.6) was taken forward to the risk characterisation.

The intake via drinking water calculated with CHESAR was 3-4 orders of magnitudes lower compared to the intake via food and has thus not been taken into account.

9.3.2. Env CS 2: Use of silver nitrate in coating - no emissions to water (ERC 5)

Assessment entity group used for the assessment of this contributing scenario: ENV RA

9.3.2.1. Conditions of use

Amount used, frequency and duration of use (or from service life)
<ul style="list-style-type: none"> Annual use amount at site: <= 200 tonnes/year <i>All the amounts are expressed as Ag as this is the driver for the environmental risk assessment.</i>
<ul style="list-style-type: none"> Daily use amount at site: <= 0.909 tonnes/day <i>220 days per year is the 10th percentile of reported site-specific number of emission days for 97 sites. Default number of emission days are derived from a multi-metal background database of measured site-specific release factors collected under the former Directive of New and Existing Substances and REACH 2010 registration dossiers.</i>
Technical and organisational conditions and measures
<ul style="list-style-type: none"> On site treatment of off-air: Electrostatic precipitators or wet electrostatic precipitators or cyclones or fabric/bag filter or ceramic/metal mesh filter according to the BAT Reference Document in the Non-Ferrous Metals Industry <i>Direct air emissions should be reduced by implementing one or more of the following RMMs (air concentration range for which the RMM is suitable is specified in parenthesis):</i> <ul style="list-style-type: none"> Electrostatic precipitators using wide electrode spacing: 5 – 15 mg/Nm³ Wet electrostatic precipitators: < 5 mg/Nm³



<ul style="list-style-type: none"> • Cyclones, but as primary collector: < 50 mg/Nm³ • Fabric or bag filters: high efficiency in controlling fine particulate (melting): achieve emission values < 5mg/Nm³. Membrane filtration techniques can achieve < 1 mg/Nm³ • Ceramic and metal mesh filters. PM10 particles are removed: 0.1 mg/Nm³ <p>Wet scrubbers: < 4 mg/Nm³</p>
<ul style="list-style-type: none"> • The substance should not be released to water <p><i>Emissions to surface water or to the sewage system are not allowed in this scenario</i></p>
Conditions and measures related to biological sewage treatment plant
<ul style="list-style-type: none"> • Biological STP: None [Effectiveness Water: 0%]
Conditions and measures related to external treatment of waste (including article waste)
<ul style="list-style-type: none"> • Particular considerations on the waste treatment operations: No (low concentration) <p><i>Particular risks from waste treatment unlikely due low concentration of substance in waste stream. Waste disposal according to national/local legislation is sufficient. If the metal content of the waste is elevated enough, internal or external recovery/recycling is considered.</i></p>
Other conditions affecting environmental exposure
<ul style="list-style-type: none"> • Discharge rate of effluent: >= 2E3 m³/day

9.3.2.2. Releases

The local releases to the environment are reported in the following table. Note that the releases reported do not account for the removal in the modelled biological STP.

Table 9.38. Local releases to the environment

Release	Assessment entity	Release estimation method	Explanations
Water	Ag dissolved	Estimated release factor	<p>Release factor before on site RMM: 0% Release factor after on site RMM: 0% Local release rate: 0 kg/day Explanation: Based on questionnaire responses some companies have no emissions to water so a scenario without emissions has been included as well.</p>
Air	Ag dissolved	Estimated release factor (based on SPERC Eurometaux SPERC 5.1.v3)	<p>Release factor before on site RMM: 0.2% Release factor after on site RMM: 0.2% Local release rate: 1.818 kg/day Explanation: release after RMM Default release factors are derived from a multi-metal background database of measured site-specific release factors collected from peer-reviewed EU Risk Assessment Reports under the former Directive of New and Existing Substances and REACH 2010 registration dossiers. The 90th percentile of reported site-specific release factors to air for 97 sites.</p>
Non agricultural soil	Ag dissolved	Estimated release factor	<p>Release factor after on site RMM: 0% Explanation: No direct emissions to soil.</p>

Releases to waste

Release factor to external waste: 1 %

Default release factors are derived from a multi-metal background database of measured site-specific release factors collected from peer-reviewed EU Risk Assessment Reports under the former Directive of New and Existing Substances and REACH 2010 registration dossiers.



The 90th percentile of reported site-specific release factors to solid waste for 32 downstream user sites covering zinc, nickel, lead, antimony

9.3.2.3. Exposure and risks for the environment and man via the environment

The exposure concentrations and risk characterisation ratios (RCR) are reported in the following table. The exposure estimates have been obtained with EUSES 2.1.2 unless stated otherwise.

Table 9.39. Exposure concentrations and risks for the environment and man via the environment

Protection target	Assessment entity	Exposure concentration	Risk quantification
Fresh water	Ag dissolved	Local PEC: 6.06E-6 mg/L RCR = 0.132	Final RCR = 0.132
Sediment (freshwater)	Ag dissolved	Local PEC: 1.155 mg/kg dw RCR = 2.64E-3	Final RCR < 0.01
Marine water	Ag dissolved	Local PEC: 1.91E-6 mg/L RCR = 2.22E-3	Final RCR < 0.01
Sediment (marine water)	Ag dissolved	Local PEC: 0.364 mg/kg dw RCR = 8.31E-4	Final RCR < 0.01
Sewage Treatment Plant	Ag dissolved	Local PEC: 0 mg/L RCR = 0	Final RCR < 0.01
Agricultural soil	Ag dissolved	Local PEC: 0.179 mg/kg dw RCR = 0.171	Final RCR = 0.171
Man via environment - Inhalation (systemic effects)	Ag dissolved	Concentration in air: 3.05E-4 mg/m ³ RCR = 2.03E-3	Final RCR < 0.01
Man via environment - Oral	Ag dissolved	Exposure via food consumption: 3.84 µg/kg bw/day (Measured data: See section 9.0.3.6) RCR = 0.035	Final RCR = 0.035
Man via environment - combined routes			Final RCR = 0.037

Remarks on measured exposure:

See section 9.0.3.6 for Ag dissolved:

Identity of the substance used: Ag

Explanation: Worst case exposure of 3.84 µg Ag/kg bw/day from food (section 9.0.3.6) was taken forward to the risk characterisation.

The intake via drinking water calculated with CHESAR was 3-4 orders of magnitudes lower compared to the intake via food and has thus not been taken into account.

9.3.3. Worker CS 3: Chemical production where opportunity for exposure arises (PROC 4)

Assessment entity group used for the assessment of this contributing scenario: HH RA

9.3.3.1. Conditions of use

	Method
Product (article) characteristics	
• Percentage (w/w) of substance in mixture/article: <= 100 %	MEASE 1.02.01
• Physical form of the used product: Liquid, including paste/slurry/suspension <i>Note that 'aqueous solution' was selected in MEASE to reflect the very low emission potential of the substance.</i>	MEASE 1.02.01
Amount used (or contained in articles), frequency and duration of use/exposure	



	Method
• Duration of activity: <= 8 h/day	MEASE 1.02.01
Technical and organisational conditions and measures	
• Occupational Health and Safety Management System: Advanced	MEASE 1.02.01
• Pattern of use: Non-dispersive use	MEASE 1.02.01
• Pattern of exposure control: Direct handling	MEASE 1.02.01
• Contact level: Extensive	MEASE 1.02.01
Conditions and measures related to personal protection, hygiene and health evaluation	
• Dermal protection: Chemical resistant dermal protection with basic employee training. (effectiveness >= 90%)	MEASE 1.02.01
• Respiratory protective equipment (RPE) as precautionary measure: RPE protecting from local effects via inhalation <i>Due to potential adverse effects of the substance to the respiratory tract, RPE is prescribed on a precautionary basis for all workplaces unless inhalation exposure to the substance can be excluded.</i>	
• Gloves as precautionary measure: Gloves protecting from local effects to the skin (high hazard) <i>Due to the potential adverse effects of the substance to skin, protective gloves according to EN 374 have to be worn at all workplaces. Additionally, face protection is required to be worn as appropriate.</i>	
• Eye protection: Eye protection to be worn to protect from adverse effects to the eyes <i>Due to the adverse effects of the substance to the eyes, direct contact of the eyes with the substance is to be avoided including hand to eye transfer after touching contaminated surfaces. Suitable eye protection equipment (e.g. goggles or visors) must be worn.</i>	
Other conditions affecting workers exposure	
• Place of use: Indoor	

9.3.3.2. Exposure and risks for workers

The exposure concentrations and risk characterisation ratios (RCR) are reported in the following table.

Table 9.40. Exposure concentrations and risks for workers

Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic, long term	Silver nitrate	0.05 mg/m ³ (MEASE 1.02.01) RCR = 0.052	Final RCR = 0.052
Inhalation, local, long term	Silver nitrate	0.05 mg/m ³ (MEASE 1.02.01)	Qualitative risk
Dermal, systemic, long term	Silver nitrate	0.034 mg/kg bw/day (MEASE 1.02.01) RCR = 0.101	Final RCR = 0.101
Combined routes, systemic, long-term			Final RCR = 0.153

Risk characterisation

Qualitative risk characterisation (Inhalation, local, long term, Inhalation, local, acute, Dermal, local, long term, Dermal, local, acute, Eye, local):

See section 9.0.4.2

9.3.4. Worker CS 4: Mixing or blending in batch processes (PROC 5)

Assessment entity group used for the assessment of this contributing scenario: HH RA

**9.3.4.1. Conditions of use**

	Method
Product (article) characteristics	
• Percentage (w/w) of substance in mixture/article: ≤ 100 %	MEASE 1.02.01
• Physical form of the used product: Liquid, including paste/slurry/suspension <i>Note that 'aqueous solution' was selected in MEASE to reflect the very low emission potential of the substance.</i>	MEASE 1.02.01
Amount used (or contained in articles), frequency and duration of use/exposure	
• Duration of activity: ≤ 8 h/day	MEASE 1.02.01
Technical and organisational conditions and measures	
• Occupational Health and Safety Management System: Advanced	MEASE 1.02.01
• Pattern of use: Non-dispersive use	MEASE 1.02.01
• Pattern of exposure control: Direct handling	MEASE 1.02.01
• Contact level: Extensive	MEASE 1.02.01
Conditions and measures related to personal protection, hygiene and health evaluation	
• Dermal protection: Chemical resistant dermal protection with basic employee training. (effectiveness ≥ 90%)	MEASE 1.02.01
• Respiratory protective equipment (RPE) as precautionary measure: RPE protecting from local effects via inhalation <i>Due to potential adverse effects of the substance to the respiratory tract, RPE is prescribed on a precautionary basis for all workplaces unless inhalation exposure to the substance can be excluded.</i>	
• Gloves as precautionary measure: Gloves protecting from local effects to the skin (high hazard) <i>Due to the potential adverse effects of the substance to skin, protective gloves according to EN 374 have to be worn at all workplaces. Additionally, face protection is required to be worn as appropriate.</i>	
• Eye protection: Eye protection to be worn to protect from adverse effects to the eyes <i>Due to the adverse effects of the substance to the eyes, direct contact of the eyes with the substance is to be avoided including hand to eye transfer after touching contaminated surfaces. Suitable eye protection equipment (e.g. goggles or visors) must be worn.</i>	
Other conditions affecting workers exposure	
• Place of use: Indoor	

9.3.4.2. Exposure and risks for workers

The exposure concentrations and risk characterisation ratios (RCR) are reported in the following table.

Table 9.41. Exposure concentrations and risks for workers

Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic, long term	Silver nitrate	0.05 mg/m ³ (MEASE 1.02.01) RCR = 0.052	Final RCR = 0.052
Inhalation, local, long term	Silver nitrate	0.05 mg/m ³ (MEASE 1.02.01)	Qualitative risk
Dermal, systemic, long term	Silver nitrate	0.034 mg/kg bw/day (MEASE 1.02.01) RCR = 0.101	Final RCR = 0.101
Combined routes, systemic, long-term			Final RCR = 0.153

**Risk characterisation**

Qualitative risk characterisation (Inhalation, local, long term, Inhalation, local, acute, Dermal, local, long term, Dermal, local, acute, Eye, local):

See section 9.0.4.2

9.3.5. Worker CS 5: Industrial spraying (PROC 7)

Assessment entity group used for the assessment of this contributing scenario: HH RA

9.3.5.1. Conditions of use

	Method
Product (article) characteristics	
• Percentage (w/w) of substance in mixture/article: $\leq 100\%$	MEASE 1.02.01
• Physical form of the used product: Liquid, including paste/slurry/suspension <i>Note that 'aqueous solution' was selected in MEASE to reflect the very low emission potential of the substance.</i>	MEASE 1.02.01
Amount used (or contained in articles), frequency and duration of use/exposure	
• Duration of activity: ≤ 8 h/day	MEASE 1.02.01
Technical and organisational conditions and measures	
• Occupational Health and Safety Management System: Advanced	MEASE 1.02.01
• Pattern of use: Non-dispersive use	MEASE 1.02.01
• Pattern of exposure control: Direct handling	MEASE 1.02.01
• Contact level: Extensive	MEASE 1.02.01
• Generic local exhaust ventilation: Lower confidence limit (industrial use) [Effectiveness Inhalation: 78%] <i>Standard efficiency</i> Inhalation explanation: <i>Efficiency for industrial use</i>	MEASE 1.02.01
Conditions and measures related to personal protection, hygiene and health evaluation	
• Dermal protection: Chemical resistant dermal protection with basic employee training. (effectiveness $\geq 90\%$)	MEASE 1.02.01
• Respiratory protection: Yes (APF ≥ 10)	MEASE 1.02.01
• Respiratory protective equipment (RPE) as precautionary measure: RPE protecting from local effects via inhalation <i>Due to potential adverse effects of the substance to the respiratory tract, RPE is prescribed on a precautionary basis for all workplaces unless inhalation exposure to the substance can be excluded.</i>	
• Gloves as precautionary measure: Gloves protecting from local effects to the skin (high hazard) <i>Due to the potential adverse effects of the substance to skin, protective gloves according to EN 374 have to be worn at all workplaces. Additionally, face protection is required to be worn as appropriate.</i>	
• Eye protection: Eye protection to be worn to protect from adverse effects to the eyes <i>Due to the adverse effects of the substance to the eyes, direct contact of the eyes with the substance is to be avoided including hand to eye transfer after touching contaminated surfaces. Suitable eye protection equipment (e.g. goggles or visors) must be worn.</i>	
Other conditions affecting workers exposure	
• Place of use: Indoor	

9.3.5.2. Exposure and risks for workers



The exposure concentrations and risk characterisation ratios (RCR) are reported in the following table.

Table 9.42. Exposure concentrations and risks for workers

Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic, long term	Silver nitrate	0.44 mg/m ³ (MEASE 1.02.01) RCR = 0.458	Final RCR = 0.458
Inhalation, local, long term	Silver nitrate	0.44 mg/m ³ (MEASE 1.02.01)	Qualitative risk
Dermal, systemic, long term	Silver nitrate	0.034 mg/kg bw/day (MEASE 1.02.01) RCR = 0.101	Final RCR = 0.101
Combined routes, systemic, long-term			Final RCR = 0.559

Risk characterisation

Qualitative risk characterisation (Inhalation, local, long term, Inhalation, local, acute, Dermal, local, long term, Dermal, local, acute, Eye, local):

See section 9.0.4.2

9.3.6. Worker CS 6: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC 9)

Assessment entity group used for the assessment of this contributing scenario: HH RA

9.3.6.1. Conditions of use

	Method
Product (article) characteristics	
• Percentage (w/w) of substance in mixture/article: <= 100 %	MEASE 1.02.01
• Physical form of the used product: Liquid, including paste/slurry/suspension <i>Note that 'aqueous solution' was selected in MEASE to reflect the very low emission potential of the substance.</i>	MEASE 1.02.01
Amount used (or contained in articles), frequency and duration of use/exposure	
• Duration of activity: <= 8 h/day	MEASE 1.02.01
Technical and organisational conditions and measures	
• Occupational Health and Safety Management System: Advanced	MEASE 1.02.01
• Pattern of use: Non-dispersive use	MEASE 1.02.01
• Pattern of exposure control: Direct handling	MEASE 1.02.01
• Contact level: Extensive	MEASE 1.02.01
Conditions and measures related to personal protection, hygiene and health evaluation	
• Dermal protection: Chemical resistant dermal protection with basic employee training. (effectiveness >= 90%)	MEASE 1.02.01
• Respiratory protective equipment (RPE) as precautionary measure: RPE protecting from local effects via inhalation <i>Due to potential adverse effects of the substance to the respiratory tract, RPE is prescribed on a precautionary basis for all workplaces unless inhalation exposure to the substance can be excluded.</i>	
• Gloves as precautionary measure: Gloves protecting from local effects to the skin (high hazard) <i>Due to the potential adverse effects of the substance to skin, protective gloves according to EN 374 have to be worn at all workplaces. Additionally, face protection is required to be worn as appropriate.</i>	
• Eye protection: Eye protection to be worn to protect from adverse effects to the eyes	



	Method
<i>Due to the adverse effects of the substance to the eyes, direct contact of the eyes with the substance is to be avoided including hand to eye transfer after touching contaminated surfaces. Suitable eye protection equipment (e.g. goggles or visors) must be worn.</i>	
Other conditions affecting workers exposure	
• Place of use: Indoor	

9.3.6.2. Exposure and risks for workers

The exposure concentrations and risk characterisation ratios (RCR) are reported in the following table.

Table 9.43. Exposure concentrations and risks for workers

Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic, long term	Silver nitrate	0.01 mg/m ³ (MEASE 1.02.01) RCR = 0.01	Final RCR = 0.01
Inhalation, local, long term	Silver nitrate	0.01 mg/m ³ (MEASE 1.02.01)	Qualitative risk
Dermal, systemic, long term	Silver nitrate	0.034 mg/kg bw/day (MEASE 1.02.01) RCR = 0.101	Final RCR = 0.101
Combined routes, systemic, long-term			Final RCR = 0.111

Risk characterisation

Qualitative risk characterisation (Inhalation, local, long term, Inhalation, local, acute, Dermal, local, long term, Dermal, local, acute, Eye, local):

See section 9.0.4.2

9.3.7. Worker CS 7: Roller application or brushing (PROC 10)

Assessment entity group used for the assessment of this contributing scenario: HH RA

9.3.7.1. Conditions of use

	Method
Product (article) characteristics	
• Percentage (w/w) of substance in mixture/article: <= 100 %	MEASE 1.02.01
• Physical form of the used product: Liquid, including paste/slurry/suspension <i>Note that 'aqueous solution' was selected in MEASE to reflect the very low emission potential of the substance.</i>	MEASE 1.02.01
Amount used (or contained in articles), frequency and duration of use/exposure	
• Duration of activity: <= 8 h/day	MEASE 1.02.01
Technical and organisational conditions and measures	
• Occupational Health and Safety Management System: Advanced	MEASE 1.02.01
• Pattern of use: Non-dispersive use	MEASE 1.02.01
• Pattern of exposure control: Direct handling	MEASE 1.02.01
• Contact level: Extensive	MEASE 1.02.01
Conditions and measures related to personal protection, hygiene and health evaluation	
• Dermal protection: Chemical resistant dermal protection with basic employee training. (effectiveness >= 90%)	MEASE 1.02.01
• Respiratory protective equipment (RPE) as precautionary measure: RPE protecting	



	Method
from local effects via inhalation <i>Due to potential adverse effects of the substance to the respiratory tract, RPE is prescribed on a precautionary basis for all workplaces unless inhalation exposure to the substance can be excluded.</i>	
• Gloves as precautionary measure: Gloves protecting from local effects to the skin (high hazard) <i>Due to the potential adverse effects of the substance to skin, protective gloves according to EN 374 have to be worn at all workplaces. Additionally, face protection is required to be worn as appropriate.</i>	
• Eye protection: Eye protection to be worn to protect from adverse effects to the eyes <i>Due to the adverse effects of the substance to the eyes, direct contact of the eyes with the substance is to be avoided including hand to eye transfer after touching contaminated surfaces. Suitable eye protection equipment (e.g. goggles or visors) must be worn.</i>	
Other conditions affecting workers exposure	
• Place of use: Indoor	

9.3.7.2. Exposure and risks for workers

The exposure concentrations and risk characterisation ratios (RCR) are reported in the following table.

Table 9.44. Exposure concentrations and risks for workers

Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic, long term	Silver nitrate	0.05 mg/m ³ (MEASE 1.02.01) RCR = 0.052	Final RCR = 0.052
Inhalation, local, long term	Silver nitrate	0.05 mg/m ³ (MEASE 1.02.01)	Qualitative risk
Dermal, systemic, long term	Silver nitrate	0.034 mg/kg bw/day (MEASE 1.02.01) RCR = 0.101	Final RCR = 0.101
Combined routes, systemic, long-term			Final RCR = 0.153

Risk characterisation

Qualitative risk characterisation (Inhalation, local, long term, Inhalation, local, acute, Dermal, local, long term, Dermal, local, acute, Eye, local):

See section 9.0.4.2

9.3.8. Worker CS 8: Treatment of articles by dipping and pouring (PROC 13)

Assessment entity group used for the assessment of this contributing scenario: HH RA

9.3.8.1. Conditions of use

	Method
Product (article) characteristics	
• Percentage (w/w) of substance in mixture/article: ≤ 100 %	MEASE 1.02.01
• Physical form of the used product: Liquid, including paste/slurry/suspension <i>Note that 'aqueous solution' was selected in MEASE to reflect the very low emission potential of the substance.</i>	MEASE 1.02.01
Amount used (or contained in articles), frequency and duration of use/exposure	
• Duration of activity: ≤ 8 h/day	MEASE 1.02.01



	Method
Technical and organisational conditions and measures	
• Occupational Health and Safety Management System: Advanced	MEASE 1.02.01
• Pattern of use: Non-dispersive use	MEASE 1.02.01
• Pattern of exposure control: Direct handling	MEASE 1.02.01
• Contact level: Extensive	MEASE 1.02.01
Conditions and measures related to personal protection, hygiene and health evaluation	
• Dermal protection: Chemical resistant dermal protection with basic employee training. (effectiveness $\geq 90\%$)	MEASE 1.02.01
• Respiratory protective equipment (RPE) as precautionary measure: RPE protecting from local effects via inhalation <i>Due to potential adverse effects of the substance to the respiratory tract, RPE is prescribed on a precautionary basis for all workplaces unless inhalation exposure to the substance can be excluded.</i>	
• Gloves as precautionary measure: Gloves protecting from local effects to the skin (high hazard) <i>Due to the potential adverse effects of the substance to skin, protective gloves according to EN 374 have to be worn at all workplaces. Additionally, face protection is required to be worn as appropriate.</i>	
• Eye protection: Eye protection to be worn to protect from adverse effects to the eyes <i>Due to the adverse effects of the substance to the eyes, direct contact of the eyes with the substance is to be avoided including hand to eye transfer after touching contaminated surfaces. Suitable eye protection equipment (e.g. goggles or visors) must be worn.</i>	
Other conditions affecting workers exposure	
• Place of use: Indoor	

9.3.8.2. Exposure and risks for workers

The exposure concentrations and risk characterisation ratios (RCR) are reported in the following table.

Table 9.45. Exposure concentrations and risks for workers

Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic, long term	Silver nitrate	0.01 mg/m ³ (MEASE 1.02.01) RCR = 0.01	Final RCR = 0.01
Inhalation, local, long term	Silver nitrate	0.01 mg/m ³ (MEASE 1.02.01)	Qualitative risk
Dermal, systemic, long term	Silver nitrate	0.034 mg/kg bw/day (MEASE 1.02.01) RCR = 0.101	Final RCR = 0.101
Combined routes, systemic, long-term			Final RCR = 0.111

Risk characterisation

Qualitative risk characterisation (Inhalation, local, long term, Inhalation, local, acute, Dermal, local, long term, Dermal, local, acute, Eye, local):

See section 9.0.4.2

9.3.9. Worker CS 9: Production of metal powders (wet processes) (PROC 27b)

Assessment entity group used for the assessment of this contributing scenario: HH RA

**9.3.9.1. Conditions of use**

	Method
Product (article) characteristics	
• Percentage (w/w) of substance in mixture/article: ≤ 100 %	MEASE 1.02.01
• Physical form of the used product: Liquid, including paste/slurry/suspension <i>Note that 'aqueous solution' was selected in MEASE to reflect the very low emission potential of the substance.</i>	MEASE 1.02.01
Amount used (or contained in articles), frequency and duration of use/exposure	
• Duration of activity: ≤ 8 h/day	MEASE 1.02.01
Technical and organisational conditions and measures	
• Occupational Health and Safety Management System: Advanced	MEASE 1.02.01
• Pattern of use: Non-dispersive use	MEASE 1.02.01
• Pattern of exposure control: Direct handling	MEASE 1.02.01
• Contact level: Extensive	MEASE 1.02.01
Conditions and measures related to personal protection, hygiene and health evaluation	
• Dermal protection: Chemical resistant dermal protection with basic employee training. (effectiveness ≥ 90%)	MEASE 1.02.01
• Respiratory protective equipment (RPE) as precautionary measure: RPE protecting from local effects via inhalation <i>Due to potential adverse effects of the substance to the respiratory tract, RPE is prescribed on a precautionary basis for all workplaces unless inhalation exposure to the substance can be excluded.</i>	
• Gloves as precautionary measure: Gloves protecting from local effects to the skin (high hazard) <i>Due to the potential adverse effects of the substance to skin, protective gloves according to EN 374 have to be worn at all workplaces. Additionally, face protection is required to be worn as appropriate.</i>	
• Eye protection: Eye protection to be worn to protect from adverse effects to the eyes <i>Due to the adverse effects of the substance to the eyes, direct contact of the eyes with the substance is to be avoided including hand to eye transfer after touching contaminated surfaces. Suitable eye protection equipment (e.g. goggles or visors) must be worn.</i>	
Other conditions affecting workers exposure	
• Place of use: Indoor	

9.3.9.2. Exposure and risks for workers

The exposure concentrations and risk characterisation ratios (RCR) are reported in the following table.

Table 9.46. Exposure concentrations and risks for workers

Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic, long term	Silver nitrate	0.1 mg/m ³ (MEASE 1.02.01) RCR = 0.104	Final RCR = 0.104
Inhalation, local, long term	Silver nitrate	0.1 mg/m ³ (MEASE 1.02.01)	Qualitative risk
Dermal, systemic, long term	Silver nitrate	0.034 mg/kg bw/day (MEASE 1.02.01) RCR = 0.101	Final RCR = 0.101
Combined routes, systemic, long-term			Final RCR = 0.205

**Risk characterisation**

Qualitative risk characterisation (Inhalation, local, long term, Inhalation, local, acute, Dermal, local, long term, Dermal, local, acute, Eye, local):

See section 9.0.4.2

9.3.10. Worker CS 10: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC 2)

Assessment entity group used for the assessment of this contributing scenario: HH RA

9.3.10.1. Conditions of use

	Method
Product (article) characteristics	
• Percentage (w/w) of substance in mixture/article: <= 100 %	MEASE 1.02.01
• Physical form of the used product: Solid (material with low dustiness)	MEASE 1.02.01
Amount used (or contained in articles), frequency and duration of use/exposure	
• Duration of activity: <= 8 h/day	MEASE 1.02.01
Technical and organisational conditions and measures	
• Occupational Health and Safety Management System: Advanced	MEASE 1.02.01
• Pattern of use: Non-dispersive use	MEASE 1.02.01
• Pattern of exposure control: Direct handling	MEASE 1.02.01
• Contact level: Incidental	MEASE 1.02.01
Conditions and measures related to personal protection, hygiene and health evaluation	
• Respiratory protective equipment (RPE) as precautionary measure: RPE protecting from local effects via inhalation <i>Due to potential adverse effects of the substance to the respiratory tract, RPE is prescribed on a precautionary basis for all workplaces unless inhalation exposure to the substance can be excluded.</i>	
• Gloves as precautionary measure: Gloves protecting from local effects to the skin (high hazard) <i>Due to the potential adverse effects of the substance to skin, protective gloves according to EN 374 have to be worn at all workplaces. Additionally, face protection is required to be worn as appropriate.</i>	
• Eye protection: Eye protection to be worn to protect from adverse effects to the eyes <i>Due to the adverse effects of the substance to the eyes, direct contact of the eyes with the substance is to be avoided including hand to eye transfer after touching contaminated surfaces. Suitable eye protection equipment (e.g. goggles or visors) must be worn.</i>	
Other conditions affecting workers exposure	
• Place of use: Indoor	

9.3.10.2. Exposure and risks for workers

The exposure concentrations and risk characterisation ratios (RCR) are reported in the following table.

Table 9.47. Exposure concentrations and risks for workers

Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic, long term	Silver nitrate	0.01 mg/m ³ (MEASE 1.02.01) RCR = 0.01	Final RCR = 0.01



Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, local, long term	Silver nitrate	0.01 mg/m ³ (MEASE 1.02.01)	Qualitative risk
Dermal, systemic, long term	Silver nitrate	0.034 mg/kg bw/day (MEASE 1.02.01) RCR = 0.101	Final RCR = 0.101
Combined routes, systemic, long-term			Final RCR = 0.111

Risk characterisation

Qualitative risk characterisation (Inhalation, local, long term, Inhalation, local, acute, Dermal, local, long term, Dermal, local, acute, Eye, local):
See section 9.0.4.2

9.3.11. Worker CS 11: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC 8b)

Assessment entity group used for the assessment of this contributing scenario: HH RA

9.3.11.1. Conditions of use

	Method
Product (article) characteristics	
• Percentage (w/w) of substance in mixture/article: <= 100 %	MEASE 1.02.01
• Physical form of the used product: Solid (material with low dustiness)	MEASE 1.02.01
Amount used (or contained in articles), frequency and duration of use/exposure	
• Duration of activity: <= 8 h/day	MEASE 1.02.01
Technical and organisational conditions and measures	
• Occupational Health and Safety Management System: Advanced	MEASE 1.02.01
• Pattern of use: Non-dispersive use	MEASE 1.02.01
• Pattern of exposure control: Direct handling	MEASE 1.02.01
• Contact level: Extensive	MEASE 1.02.01
Conditions and measures related to personal protection, hygiene and health evaluation	
• Dermal protection: Chemical resistant dermal protection with basic employee training. (effectiveness >= 90%)	MEASE 1.02.01
• Respiratory protective equipment (RPE) as precautionary measure: RPE protecting from local effects via inhalation <i>Due to potential adverse effects of the substance to the respiratory tract, RPE is prescribed on a precautionary basis for all workplaces unless inhalation exposure to the substance can be excluded.</i>	
• Gloves as precautionary measure: Gloves protecting from local effects to the skin (high hazard) <i>Due to the potential adverse effects of the substance to skin, protective gloves according to EN 374 have to be worn at all workplaces. Additionally, face protection is required to be worn as appropriate.</i>	
• Eye protection: Eye protection to be worn to protect from adverse effects to the eyes <i>Due to the adverse effects of the substance to the eyes, direct contact of the eyes with the substance is to be avoided including hand to eye transfer after touching contaminated surfaces. Suitable eye protection equipment (e.g. goggles or visors) must be worn.</i>	
Other conditions affecting workers exposure	
• Place of use: Indoor	



9.3.11.2. Exposure and risks for workers

The exposure concentrations and risk characterisation ratios (RCR) are reported in the following table.

Table 9.48. Exposure concentrations and risks for workers

Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic, long term	Silver nitrate	0.1 mg/m ³ (MEASE 1.02.01) RCR = 0.104	Final RCR = 0.104
Inhalation, local, long term	Silver nitrate	0.1 mg/m ³ (MEASE 1.02.01)	Qualitative risk
Dermal, systemic, long term	Silver nitrate	0.034 mg/kg bw/day (MEASE 1.02.01) RCR = 0.101	Final RCR = 0.101
Combined routes, systemic, long-term			Final RCR = 0.205

Risk characterisation

Qualitative risk characterisation (Inhalation, local, long term, Inhalation, local, acute, Dermal, local, long term, Dermal, local, acute, Eye, local):

See section 9.0.4.2

9.3.12. Worker CS 12: Manual activities involving hand contact (PROC 19)

Assessment entity group used for the assessment of this contributing scenario: HH RA

9.3.12.1. Conditions of use

	Method
Product (article) characteristics	
• Percentage (w/w) of substance in mixture/article: <= 100 %	MEASE 1.02.01
• Physical form of the used product: Solid (material with low dustiness)	MEASE 1.02.01
Amount used (or contained in articles), frequency and duration of use/exposure	
• Duration of activity: <= 8 h/day	MEASE 1.02.01
Technical and organisational conditions and measures	
• Occupational Health and Safety Management System: Advanced	MEASE 1.02.01
• Pattern of use: Non-dispersive use	MEASE 1.02.01
• Pattern of exposure control: Direct handling	MEASE 1.02.01
• Contact level: Extensive	MEASE 1.02.01
Conditions and measures related to personal protection, hygiene and health evaluation	
• Dermal protection: Chemical resistant dermal protection with basic employee training. (effectiveness >= 90%)	MEASE 1.02.01
• Respiratory protective equipment (RPE) as precautionary measure: RPE protecting from local effects via inhalation <i>Due to potential adverse effects of the substance to the respiratory tract, RPE is prescribed on a precautionary basis for all workplaces unless inhalation exposure to the substance can be excluded.</i>	
• Gloves as precautionary measure: Gloves protecting from local effects to the skin (high hazard) <i>Due to the potential adverse effects of the substance to skin, protective gloves according to EN 374 have to be worn at all workplaces. Additionally, face protection is required to be worn as appropriate.</i>	



	Method
<ul style="list-style-type: none"> Eye protection: Eye protection to be worn to protect from adverse effects to the eyes <i>Due to the adverse effects of the substance to the eyes, direct contact of the eyes with the substance is to be avoided including hand to eye transfer after touching contaminated surfaces. Suitable eye protection equipment (e.g. goggles or visors) must be worn.</i> 	
Other conditions affecting workers exposure	
<ul style="list-style-type: none"> Place of use: Indoor 	

9.3.12.2. Exposure and risks for workers

The exposure concentrations and risk characterisation ratios (RCR) are reported in the following table.

Table 9.49. Exposure concentrations and risks for workers

Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic, long term	Silver nitrate	0.5 mg/m ³ (MEASE 1.02.01) RCR = 0.521	Final RCR = 0.521
Inhalation, local, long term	Silver nitrate	0.5 mg/m ³ (MEASE 1.02.01)	Qualitative risk
Dermal, systemic, long term	Silver nitrate	0.141 mg/kg bw/day (MEASE 1.02.01) RCR = 0.415	Final RCR = 0.415
Combined routes, systemic, long-term			Final RCR = 0.936

Risk characterisation

Qualitative risk characterisation (Inhalation, local, long term, Inhalation, local, acute, Dermal, local, long term, Dermal, local, acute, Eye, local):

See section 9.0.4.2

9.3.13. Worker CS 13: Manual maintenance (cleaning and repair) of machinery (PROC 28)

Assessment entity group used for the assessment of this contributing scenario: HH RA

Covers maintenance of both the solid (low dustiness) and liquid form (aqueous solution)

9.3.13.1. Conditions of use

	Method
Product (article) characteristics	
<ul style="list-style-type: none"> Percentage (w/w) of substance in mixture/article: <= 100 % 	MEASE 1.02.01
<ul style="list-style-type: none"> Physical form of the used product: Solid (material with low dustiness) 	MEASE 1.02.01
Amount used (or contained in articles), frequency and duration of use/exposure	
<ul style="list-style-type: none"> Duration of activity: <= 8 h/day 	MEASE 1.02.01
Technical and organisational conditions and measures	
<ul style="list-style-type: none"> Occupational Health and Safety Management System: Advanced 	MEASE 1.02.01
<ul style="list-style-type: none"> Pattern of use: Non-dispersive use 	MEASE 1.02.01
<ul style="list-style-type: none"> Pattern of exposure control: Direct handling 	MEASE 1.02.01
<ul style="list-style-type: none"> Contact level: Extensive 	MEASE 1.02.01
Conditions and measures related to personal protection, hygiene and health evaluation	
<ul style="list-style-type: none"> Dermal protection: Chemical resistant dermal protection with basic employee training. (effectiveness >= 90%) 	MEASE 1.02.01



	Method
<ul style="list-style-type: none"> Respiratory protective equipment (RPE) as precautionary measure: RPE protecting from local effects via inhalation <i>Due to potential adverse effects of the substance to the respiratory tract, RPE is prescribed on a precautionary basis for all workplaces unless inhalation exposure to the substance can be excluded.</i> 	
<ul style="list-style-type: none"> Gloves as precautionary measure: Gloves protecting from local effects to the skin (high hazard) <i>Due to the potential adverse effects of the substance to skin, protective gloves according to EN 374 have to be worn at all workplaces. Additionally, face protection is required to be worn as appropriate.</i> 	
<ul style="list-style-type: none"> Eye protection: Eye protection to be worn to protect from adverse effects to the eyes <i>Due to the adverse effects of the substance to the eyes, direct contact of the eyes with the substance is to be avoided including hand to eye transfer after touching contaminated surfaces. Suitable eye protection equipment (e.g. goggles or visors) must be worn.</i> 	
Other conditions affecting workers exposure	
<ul style="list-style-type: none"> Place of use: Indoor 	

9.3.13.2. Exposure and risks for workers

The exposure concentrations and risk characterisation ratios (RCR) are reported in the following table.

Table 9.50. Exposure concentrations and risks for workers

Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic, long term	Silver nitrate	0.5 mg/m ³ (MEASE 1.02.01) RCR = 0.521	Final RCR = 0.521
Inhalation, local, long term	Silver nitrate	0.5 mg/m ³ (MEASE 1.02.01)	Qualitative risk
Dermal, systemic, long term	Silver nitrate	0.069 mg/kg bw/day (MEASE 1.02.01) RCR = 0.202	Final RCR = 0.202
Combined routes, systemic, long-term			Final RCR = 0.723

Remarks on exposure data from external estimation tools:

MEASE 1.02.01 for Silver nitrate:

Explanation:

As the MEASE 1.02.01 exposure estimation tool for workers does not provide exposure estimates for PROC 28, PROC 8a has been used instead as the input parameter assuming that there are similarities in the exposure.

Risk characterisation

Qualitative risk characterisation (Inhalation, local, long term, Inhalation, local, acute, Dermal, local, long term, Dermal, local, acute, Eye, local):

See section 9.0.4.2