

Summary of Parameters used for assessing safe use:

Exposure Pattern	DNEL (Workers)	DNEL (General Population)
Long term - dermal, systemic effects	10 mg/kg bw/day	5 mg/kg bw/day
Long term - inhalation, systemic effects	Not relevant	Not relevant
Long term - oral, systemic effects	Not applicable	5 mg/kg bw/day
Long term - dermal, local effects	No data available	No data available
Long term - inhalation, local effects	Not relevant	Not relevant

(Please also refer to section 8 SDS)

Exposure Pattern	PNECs
Freshwater:	0.048mg/L
Marine water:	0.0048 mg/L
Sewage treatment plants:	2 mg/L
Freshwater sediments:	0.173 mg/kg dwt
Marine water sediments:	0.0173 mg/kg dwt
Soil:	0.00638 mg/kg dwt

(Please also refer to section 12 SDS)

Summary of identified uses of Sulfamic Acid

- Identified Use 1 "Kitchen cleaner, dishwash product"
- Identified Use 2 "Floor and sanitary cleaner"
- Identified Use 3 "Food process cleaner, foam cleaner"
- Identified Use 4 "Oil well cleaner"
- Identified Use 5 "Metal surface treatment products, e.g. electroplating"
- Identified Use 6 "pH regulator"
- Identified Use 7 "Pulp and paper industry as a chloride stabilizer"
- Identified Use 8 "Coagulator for urea-formaldehyde resins"
- Identified Use 9 "Nitrite remover in dye and pigment manufacture"
- Identified Use 10 "Cleaning metals and ceramics"
- Identified Use 11 "Surface disinfectant"
- Identified Use 12 "Laundry aid, laundry detergent"
- Identified Use 13 "Polishes and wax blends"
- Identified Use 14 "Non-metal surface treatment products"
- Identified Use 15 "Welding and soldering products, flux products"
- Identified Use 16 "Leather tanning industry for leather finishing"
- Identified Use 17 "Plasticizer"
- Identified Use 18: "Synthesis of sweeteners"
- Identified Use 19 "Air care product"
- Identified Use 20 "Composite additive for hardening control of amino resins"

The following exposure scenarios have been assessed for the product mentioned above:

1. Exposure scenario title	ES 1: Manufacturing of cleaning and maintenance products, surface treatment products and/or biocidal products
2. Identified uses covered in the Exposure Scenario	
<p>(ES 1 just covers the manufacture or formulation of these end products)</p> <p>Identified Use 1 "Kitchen cleaner, dishwash product"</p> <p>Identified Use 2 "Floor and sanitary cleaner"</p> <p>Identified Use 4 "Oil well cleaner"</p> <p>Identified Use 5 "Metal surface treatment products, e.g. electroplating"</p> <p>Identified Use 6 "pH regulator"</p> <p>Identified Use 7 "Pulp and paper industry as a chloride stabilizer"</p> <p>Identified Use 10 "Cleaning metals and ceramics"</p> <p>Identified Use 11 "Surface disinfectant"</p> <p>Identified Use 12 "Laundry aid, laundry detergent"</p> <p>Identified Use 13 "Polishes and wax blends"</p> <p>Identified Use 14 "Non-metal surface treatment products"</p> <p>Identified Use 15 "Welding and soldering products, flux products"</p> <p>Identified Use 16 "Leather tanning industry for leather finishing"</p> <p>Identified Use 19 "Air care product"</p>	
3. Description of activities/process(es) covered in the Exposure Scenario	
<p>SU10 Formulation (mixing) of preparations and/or re-packaging</p> <p>PC 3 Air care products</p> <p>PC 8 Biocidal products (e.g. Disinfectants, pest control)</p> <p>PC 14 Metal surface treatment products, including galvanic and electroplating products</p> <p>PC 15 Non-metal-surface treatment products</p> <p>PC 20 Products such as pH-regulators, flocculants, precipitants, neutralization agents, other unspecific</p> <p>PC 23 Leather tanning, dye, finishing, impregnation and care products</p> <p>PC 26 Paper and board dye, finishing and impregnation products</p> <p>PC 31 Polishes and wax blends</p> <p>PC 35 Washing and cleaning products (including solvent based products)</p> <p>PC 38 Welding and soldering products, flux products</p> <p>PROC 3 Use in closed batch process (synthesis or formulation)</p> <p>PROC 4 Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC 5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)</p> <p>PROC 7 Industrial spraying</p> <p>PROC 8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities</p> <p>PROC 8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities</p> <p>PROC 9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC 13 Treatment of articles by dipping and pouring</p> <p>PROC 15 Use as laboratory reagent</p> <p>ERC2 Formulation of preparations</p>	
4. Operational conditions	
4.1 Duration of use for which the ES ensures control of risk	Duration of use: >4 h/day (all PROCs)
4.2 Frequency of use for which the ES ensures control of risk	Not restricted
4.3 Amount of use for which the ES ensures control of risk	1000t/y(based on the worst case)
5. Substance properties and use parameters	
5.1 Physical form of product in which the substance is contained	Liquid/solid
5.1a Surface area per amount of article containing the substance (if applicable)	Not applicable
5.2 Concentration of substance in	0-100%

preparation	
5.3 Amount used per time or per activity for which the RMMs, in combination with other operational conditions of use ensure control of risk (if applicable)	Not restricted
6. Other operational conditions determining exposure	
Room volume	≥ 20m ³
Ventilation rate:	not specified
Temperature:	< 60 °C
Water flow rate:	not limited
Other operational conditions:	none
7. Risk Management Measures that, in combination with the operational conditions of use, ensure control of risk related to the different target groups	
7.1.1 Occupational measures	
Data type	Data field
General measure	
Skin contact inadmissible - Touching forbidden	Not to be used without protective gloves and eye protection Immediately eliminate or neutralize spilled solution. Do not inhale aerosols, fumes
Additional instruction,	Clean contaminated protective gloves with flowing water before taking off. Clean or take off protective clothing immediately after contaminating. Examine protective gloves for damage before beginning the activity.
Pour only with small heads (20 cm or less) or let liquid flow on the rim of container (avoidance of splashes)	Valid for all activities/all PROCs
Product-related measures	
Product-related measures	High viscosity adjustment with aids to avoid splashes Delivery only as barrel commodity and/or in the tank car (For all PROC).
Technical measures	Operation temperature: < 60 °C
Organizational measures	
General measures	Handling permissible only after instruction on the dangers. Regular control of the effectiveness of the technical measures, Regular control of the application of the personal measures, (valid for all indicated activities/all above PROCs)
Additional measures	Entrance to production/processing only for technical personnel, Delivery only to the specialized trade. Hold only the quantity necessary for the processing ready.
Local exhaust ventilation required plus good work practise	Not addressed.
Personal protective equipment (PPE)	
	<p>Hand protection: Disposable gloves for brief application Gloves with 8-hour break-through security for longer application, e.g. butyl rubber or nitrile rubber protective index 6, EN 372.</p> <p>Eye protection: Eye protector or goggles (all activities/PROCs), e.g. EN 166.</p> <p>Respiratory protection: Respiratory protection equipment.</p> <p>Body protection: Exposure suit for some activities with significant exposure possibility.</p> <p>Other measures: Take a shower and change clothes after work. Handling permissible only after instruction on the dangers. Regular control of the effectiveness of the technical measures,</p>

	Regular control of the application of the personal measures, (valid for all indicated activities/all above PROCs)
7.1.2 Consumer related measures:	Not applicable for this Exposure Scenario
7.2 Environment related measures	<p>It is recommended that rainwater, sanitary sewage and industrial waste water can be separated from the sewerage and disposed by the sewage disposal apparatus.</p> <p>Neutralize before introducing into open waters (Regular control of the pH value during introduction into open waters).</p> <p>Remainders on application devices with much water.</p> <p>Diluted before discharge when necessary.</p>
8. Waste related measures needed to ensure control of risk at the different life cycle stages of the substances (including preparations or articles at the end of service life)	
<p>The wastes should be disposed of in according to local regulations. Avoid disposing into drainage systems and into the environment directly. The soiled packaging should be disposed of in the same way as the product.</p> <p>Discharges of sulphamic Acid from production sites to sewage treatment plants (STP)/waste water treatment plants and receiving waters are well controlled. Taking into account the existing EU Directives for pH-control for surface water and national regulations to control the pH of waster waters and surface waters is concluded that STPs and surface waters are sufficiently protected with regard to pH changes.</p>	
9. Prediction of exposure resulting from the conditions described above	
<p>The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.</p> <p>Predicted exposures are not expected to exceed the applicable exposure limits (DNEL as provided above) when the operational conditions/risk management measures described above are implemented.</p> <p>The environmental exposure can be excluded taken into account the risk reduction measures which are already being applied.</p>	
10. Guidance to DU to evaluate whether he works inside the boundaries set by the ES	
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

1. Exposure scenario title	ES 2: Professional use of cleaning and maintenance products, surface treatment products and/or biocidal products	
2. Identified uses covered in the Exposure Scenario		
<p>(ES 2 just covers the professional use processes of these end products)</p> <p>Identified Use 1 "Kitchen cleaner, dishwash product"</p> <p>Identified Use 2 "Floor and sanitary cleaner"</p> <p>Identified Use 4 "Oil well cleaner"</p> <p>Identified Use 10 "Cleaning metals and ceramics"</p> <p>Identified Use 11 "Surface disinfectant"</p> <p>Identified Use 12 "Laundry aid, laundry detergent"</p> <p>Identified Use 13 "Polishes and wax blends"</p> <p>Identified Use 14 "Non-metal surface treatment products"</p> <p>Identified Use 19 "Air care product"</p>		
3. Description of activities/process(es) covered in the Exposure Scenario		
<p>SU 22 "Professional uses: Public domain (administration, education, entertainment, services, craftsmen)"</p> <p>SU 2b "Offshore industries"</p> <p>PC 3 "Air care products"</p> <p>PC 8 "Biocidal products (e.g. Disinfectants, pest control)"</p> <p>PC 13 "Fuels"</p> <p>PC 15 "Non-metal-surface treatment products"</p> <p>PC 31 "Polishes and wax blends"</p> <p>PC 35 "Washing and cleaning products (including solvent based products)"</p> <p>PROC 1 "Use in closed process, no likelihood of exposure"</p> <p>PROC 2 "Use in closed, continuous process with occasional controlled exposure"</p> <p>PROC 4 "Use in batch and other process (synthesis) where opportunity for exposure arises"</p> <p>PROC 5 "Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)"</p> <p>PROC 8a "Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities"</p> <p>PROC 8b "Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities"</p> <p>PROC 9 "Transfer of substance or preparation into small containers (dedicated filling line, including weighing)"</p> <p>PROC 10 "Roller application or brushing"</p> <p>PROC 11 "Non industrial spraying"</p> <p>PROC 13 "Treatment of articles by dipping and pouring"</p> <p>PROC 16 "Using material as fuel sources, limited exposure to unburned product to be expected"</p> <p>PROC 17 "Lubrication at high energy conditions and in partly open process"</p> <p>PROC 19 "Hand-mixing with intimate contact and only PPE available"</p> <p>PROC 20 "Heat and pressure transfer fluids in dispersive, professional use but closed systems"</p> <p>ERC 8a "Wide dispersive indoor use of processing aids in open systems"</p> <p>ERC 8b "Wide dispersive indoor use of reactive substances in open systems"</p> <p>ERC 8d "Wide dispersive outdoor use of processing aids in open systems"</p> <p>ERC 9a "Wide dispersive indoor use of substances in closed systems"</p> <p>ERC 9b "Wide dispersive outdoor use of substances in closed systems"</p>		
4. Operational conditions		
4.1 Duration of use for which the ES ensures control of risk	15 min –1 h/d (all PROCs)	
4.2 Frequency of use for which the ES ensures control of risk	Not restricted	
4.3 Amount of use for which the ES ensures control of risk	7 - 1000 t/y	
5. Substance properties and use parameters		
5.1 Physical form of product in which the substance is contained	3%-15% solution	
5.1a Surface area per amount of article containing the substance (if	Not applicable	

applicable)	
5.2 Concentration of substance in preparation	3-15%
5.3 Amount used per time or per activity for which the RMMs, in combination with other operational conditions of use ensure control of risk (if applicable)	Not restricted
6. Other operational conditions determining exposure	
Room volume	≥ 20m ³
Ventilation rate:	not specified
Temperature:	<60 °C
Water flow rate:	not limited
Other operational conditions:	none
7. Risk Management Measures that, in combination with the operational conditions of use, ensure control of risk related to the different target groups	
7.1.1 Occupational measures	
Data type	Data field
General measure	
Skin contact inadmissible - Touching forbidden	Not to be used without protective gloves and eye protection Immediately eliminate or neutralize spilled solution, Do not inhale aerosols, fumes
Additional instruction,	Clean contaminated protective gloves with flowing water before taking off. Clean or take off protective clothing immediately after contaminating. Examine protective gloves for damage before beginning the activity.
Pour only with small heads (20 cm or less) or let liquid flow on the rim of container (avoidance of splashes)	Valid for all activities/all PROCs
Product-related measures	
Product-related measures	High viscosity adjustment with aids to avoid splashes Delivery only as barrel commodity and/or in the tank car (For all PROC).
Technical measures	Operation temperature: < 60 °C
Organizational measures	
General measures	Handling permissible only after instruction on the dangers. Regular control of the effectiveness of the technical measures, Regular control of the application of the personal measures, (valid for all indicated activities/all above PROCs)
Additional measures	Entrance to production/processing only for technical personnel, Delivery only to the specialized trade. Hold only the quantity necessary for the processing ready.
Local exhaust ventilation required plus good work practise	Not addressed. Local exhaust ventilation is recommended.
Personal protective equipment (PPE)	
	<p>Hand protection: Gloves with 8-hour break-through security for longer application, e.g. butyl rubber or nitrile rubber protective index 6, EN 372.</p> <p>Eye protection: Eye protector or goggles (all activities/PROCs), e.g. EN 166.</p> <p>Respiratory protection: Respiratory protection equipment.</p> <p>Body protection: Exposure suit for some activities with significant exposure possibility.</p> <p>Other measures: Take a shower and change clothes after work.</p> <p>Handling permissible only after instruction on the dangers. Regular control of the effectiveness of the technical measures, Regular control of the application of the personal measures, (valid for all</p>

	indicated activities/all above PROCs)
7.1.2 Consumer related measures:	Not applicable for this Exposure Scenario
7.2 Environment related measures	<p>Do not discharge to water directly. Diluted when necessary. Remainders on application devices with much water.</p> <p>No special information is available on onsite waste treatment. As the sulphamic acid may be recycled, reused or disposed by the manufacture or their downstream users, the discharge to wastes can be negligible.</p>
8. Waste related measures needed to ensure control of risk at the different life cycle stages of the substances (including preparations or articles at the end of service life)	
The wastes should be disposed of in according to local regulations. Avoid disposing into drainage systems and into the environment directly. The soiled packaging should be disposed of in the same way as the product.	
9. Prediction of exposure resulting from the conditions described above	
<p>The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.</p> <p>Predicted exposures are not expected to exceed the applicable exposure limits (DNEL as provided above) when the operational conditions/risk management measures described above are implemented. Environmental exposure can be excluded taken into account the risk reduction measures which are already being applied.</p>	
10. Guidance to DU to evaluate whether he works inside the boundaries set by the ES	
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

1. Exposure scenario title	ES 3: Industrial use of cleaning and maintenance products, surface treatment products and/or biocidal products	
2. Identified uses covered in the Exposure Scenario		
<p>(ES 3 just covers the use processes of these end products in industrial sites)</p> <p>Identified Use 5 "Metal surface treatment products, e.g. electroplating"</p> <p>Identified Use 6 "pH regulator"</p> <p>Identified Use 7 "Pulp and paper industry as a chloride stabilizer"</p> <p>Identified Use 10 "Cleaning metals and ceramics"</p> <p>Identified Use 11 "Surface disinfectant"</p> <p>Identified Use 12 "Laundry aid, laundry detergent"</p> <p>Identified Use 15 "Welding and soldering products, flux products"</p> <p>Identified Use 16 "Leather tanning industry for leather finishing"</p>		
3. Description of activities/process(es) covered in the Exposure Scenario		
<p>SU 3 "Industrial uses: Uses of substance as such or in preparations at industrial sites "</p> <p>SU 5 "Manufacture of textiles, leather, fur"</p> <p>SU 6b "Manufacture of pulp, paper and paper products"</p> <p>SU 8 "Manufacture of bulk, large scale chemicals (including petroleum products)"</p> <p>SU 15 "Manufacture of fabricated metal products, except machinery and equipment"</p> <p>PC 8 "Biocidal products (e.g. Disinfectants, pest control)"</p> <p>PC 14 "Metal surface treatment products, including galvanic and electroplating products"</p> <p>PC 20 "Products such as pH-regulators, flocculants, precipitants, neutralization agents, other unspecific"</p> <p>PC 23 "Leather tanning, dye, finishing, impregnation and care products"</p> <p>PC 26 "Paper and board dye, finishing and impregnation products"</p> <p>PC 35 "Washing and cleaning products (including solvent based products)"</p> <p>PC 38 "Welding and soldering products, flux products"</p> <p>PROC 2 "Use in closed, continuous process with occasional controlled exposure"</p> <p>PROC 3 "Use in closed batch process (synthesis or formulation)"</p> <p>PROC 4 "Use in batch and other process (synthesis) where opportunity for exposure arises"</p> <p>PROC 5 "Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)"</p> <p>PROC 7 "Industrial spraying"</p> <p>PROC 8a "Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities"</p> <p>PROC 8b "Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities"</p> <p>PROC 9 "Transfer of substance or preparation into small containers (dedicated filling line, including weighing)"</p> <p>PROC 10 "Roller application or brushing"</p> <p>PROC 13 "Treatment of articles by dipping and pouring"</p> <p>PROC 15 "Use as laboratory reagent"</p> <p>PROC 16 "Using material as fuel sources, limited exposure to unburned product to be expected"</p> <p>PROC 19 "Hand-mixing with intimate contact and only PPE available"</p> <p>PROC 25 "Other hot work operations with metals"</p> <p>ERC 4 "Industrial use of processing aids"</p> <p>ERC 6b "Industrial use of reactive processing aids"</p>		
4. Operational conditions		
4.1 Duration of use for which the ES ensures control of risk	0.25 - 1.25 h/d	
4.2 Frequency of use for which the ES ensures control of risk	Not restricted	
4.3 Amount of use for which the ES ensures control of risk	100 - 750 t/y	
5. Substance properties and use parameters		
5.1 Physical form of product in which the substance is contained	Liquid	
5.1a Surface area per amount of article containing the substance (if applicable)	Not applicable	

5.2	Concentration of substance in use	100%
5.3	Amount used per time or per activity for which the RMMs, in combination with other operational conditions of use ensure control of risk (if applicable)	Not specified
6. Other operational conditions determining exposure		
	Room volume	≥ 20 m ³
	Ventilation rate:	not specified
	Concentration of substance in preparation	3 % - 15 %
	Temperature:	not restricted
	Water flow rate:	not limited
	Other operational conditions:	none
7. Risk Management Measures that, in combination with the operational conditions of use, ensure control of risk related to the different target groups		
7.1.1	Occupational measures	
	Data type	Data field
General measure		
	Skin contact inadmissible - Touching forbidden	Not to be used without protective gloves and eye protection Immediately eliminate or neutralize spilled solution, Do not inhale aerosols, fumes
	Additional instruction,	Clean contaminated protective gloves with flowing water before taking off. Clean or take off protective clothing immediately after contaminating. Examine protective gloves for damage before beginning the activity.
	Pour only with small heads (20 cm or less) or let liquid flow on the rim of container (avoidance of splashes)	Valid for all activities/all PROCs
Product-related measures		
	Product-related measures	High viscosity adjustment with aids to avoid splashes Delivery only as barrel commodity and/or in the tank car (For all PROC).
	Technical measures	Operation temperature: < 60 °C
Organizational measures		
	General measures	Handling permissible only after instruction on the dangers. Regular control of the effectiveness of the technical measures, Regular control of the application of the personal measures, (valid for all indicated activities/all above PROCs)
	Additional measures	Entrance to production/processing only for technical personnel, Delivery only to the specialized trade. Hold only the quantity necessary for the processing ready.
	Local exhaust ventilation required plus good work practise	Not addressed. Local exhaust ventilation is recommended.
Personal protective equipment (PPE)		
		Hand protection: Gloves with 8-hour break-through security for longer application, e.g. butyl rubber or nitrile rubber protective index 6, EN 372. Eye protection: Eye protector or goggles (all activities/PROCs), e.g. EN 166. Respiratory protection: Respiratory protection equipment. Body protection: Exposure suit for some activities with significant exposure possibility. Other measures: Take a shower and change clothes after work. Handling permissible only after instruction on the dangers. Regular control of the effectiveness of the technical measures,

	Regular control of the application of the personal measures, (valid for all indicated activities/all above PROCs)
7.1.2 Consumer related measures:	Not applicable for this Exposure Scenario
7.2 Environment related measures	<p>It is recommended that rainwater, sanitary sewage and industrial waste water can be separated from the sewerage and disposed by the sewage disposal apparatus.</p> <p>Neutralize before introducing into open waters (Regular control of the pH value during introduction into open waters).</p> <p>Remainders on application devices with much water.</p> <p>Diluted before discharge when necessary.</p>
8. Waste related measures needed to ensure control of risk at the different life cycle stages of the substances (including preparations or articles at the end of service life)	
<p>The wastes should be disposed of in according to local regulations. Avoid disposing into drainage systems and into the environment directly. The soiled packaging should be disposed of in the same way as the product.</p> <p>Discharges of sulphamic acid from production sites to sewage treatment plants (STP)/waste water treatment plants and receiving waters are well controlled. Taking into account the existing EU Directives for pH-control for surface water and national regulations to control the pH of waster waters and surface waters is concluded that STPs and surface waters are sufficiently protected with regard to pH changes.</p>	
9. Prediction of exposure resulting from the conditions described above	
<p>The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.</p> <p>Predicted exposures are not expected to exceed the applicable exposure limits (DNEL as provided above) when the operational conditions/risk management measures described above are implemented. Environmental exposure can be excluded taken into account the risk reduction measures which are already being applied.</p>	
10. Guidance to DU to evaluate whether he works inside the boundaries set by the ES	
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

1. Exposure scenario title	ES 4: Consumer use of cleaning and maintenance products	
2. Identified uses covered in the Exposure Scenario		
(ES 4 just covers the dispersive use processes of these end products) Identified Use 1 "Kitchen cleaner, dishwash product" Identified Use 2 "Floor and sanitary cleaner" Identified Use 11 "Surface disinfectant" Identified Use 12 "Laundry aid, laundry detergent"		
3. Description of activities/process(es) covered in the Exposure Scenario		
SU 20 "Health services" SU 21 "Consumer uses: Private households (=general public=consumers)" SU 23 "Electricity, steam, gas water supply and sewage treatment" PC 8 "Biocidal products (e.g. Disinfectants, pest control)" PC 35 "Washing and cleaning products (including solvent based products)" ERC 8a "Wide dispersive indoor use of processing aids in open systems" ERC 8b "Wide dispersive indoor use of reactive substances in open systems"		
4. Operational conditions		
4.1 Duration of use for which the ES ensures control of risk	Duration of use: not specified	
4.2 Frequency of use for which the ES ensures control of risk	Frequency of use: 1 event / week	
4.3 Amount of use for which the ES ensures control of risk	100 - 1000 t/y use within entire EU	
5. Substance properties and use parameters		
5.1 Physical form of product in which the substance is contained	Liquid	
5.1a Surface area per amount of article containing the substance (if applicable)	Not applicable	
5.2 Concentration of substance in preparation	< 8%	
5.3 Amount used per time or per activity for which the RMMS, in combination with other operational conditions of use ensure control of risk (if applicable)	Not specified	
6. Other operational conditions determining exposure		
Room volume	$\geq 20\text{m}^3$	
Inhalation rate:	1.37 m^3 / hour	
Temperature:	Unless otherwise stated assumes use at ambient temperatures	
Contact area:	1000 cm^3	
Other operational conditions:	Covers use under typical household ventilation.	
7. Risk Management Measures that, in combination with the operational conditions of use, ensure control of risk related to the different target groups		
7.1.1 Occupational measures	Not applicable for this Exposure Scenario	
7.1.2 Consumer related measures:	Clean contaminated protective gloves with flowing water before taking off. Handling permissible only after instruction on the dangers. Keep away from children.	
Personal protective equipment (PPE)	Direct contact with cleaning agents is not advised. Gloves can be used, e.g. butyl rubber or nitrile rubber protective index 6, EN 372	
7.2 Environment related measures	Not specified.	
8. Waste related measures needed to ensure control of risk at the different life cycle stages of the substances (including preparations or articles at the end of service life)		

<p>The wastes should be disposed of in according to local regulations. The soiled packaging should be disposed of in the same way as the product.</p>
<p>9. Prediction of exposure resulting from the conditions described above</p>
<p>The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.</p> <p>Predicted exposures are not expected to exceed the applicable exposure limits (DNEL as provided above) when the operational conditions/risk management measures described above are implemented. Environmental exposure can be excluded taken into account the risk reduction measures which are already being applied.</p>
<p>10. Guidance to DU to evaluate whether he works inside the boundaries set by the ES</p>
<p>Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.</p>

1. Exposure scenario title	ES 5: Industrial use of sulphamic acid as foam cleaner in food process	
2. Identified uses covered in the Exposure Scenario		
(ES 5 just covers the general use processes of this end product generated in the industrial sites) Identified Use 3 "Food process cleaner, foam cleaner"		
3. Description of activities/process(es) covered in the Exposure Scenario		
<p>SU 3 "Industrial uses: Uses of substance as such or in preparations at industrial sites"</p> <p>PC 35 "Washing and cleaning products (including solvent based products)"</p> <p>PROC 1 "Use in closed process, no likelihood of exposure"</p> <p>PROC 4 "Use in batch and other process (synthesis) where opportunity for exposure arises"</p> <p>PROC 7 "Industrial spraying"</p> <p>PROC 8a "Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities"</p> <p>PROC 8b "Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities"</p> <p>PROC 11 "Non industrial spraying"</p> <p>PROC 13 "Treatment of articles by dipping and pouring"</p> <p>ERC 4 "Industrial use of processing aids"</p>		
4. Operational conditions		
4.1 Duration of use for which the ES ensures control of risk	Duration of use: < 8 h/day (all PROCs)	
4.2 Frequency of use for which the ES ensures control of risk	Not restricted	
4.3 Amount of use for which the ES ensures control of risk	305 t/y	
5. Substance properties and use parameters		
5.1 Physical form of product in which the substance is contained	Liquid	
5.1a Surface area per amount of article containing the substance (if applicable)	Not applicable	
5.2 Concentration of substance in preparation	Not specified	
5.3 Amount used per time or per activity for which the RMMS, in combination with other operational conditions of use ensure control of risk (if applicable)	Not specified	
6. Other operational conditions determining exposure		
Room volume	≥ 20m ³	
Ventilation rate:	not specified	
Temperature:	not restricted	
Water flow rate:	not limited	
Other operational conditions:	none	
7. Risk Management Measures that, in combination with the operational conditions of use, ensure control of risk related to the different target groups		
7.1.1 Occupational measures		
Data type	Data field	
General measure		
Skin contact inadmissible - Touching forbidden	<p>Not to be used without protective gloves and eye protection</p> <p>Immediately eliminate or neutralize spilled solution,</p> <p>Do not inhale aerosols, fumes</p>	
Additional instruction,	<p>Clean contaminated protective gloves with flowing water before taking off.</p> <p>Clean or take off protective clothing immediately after contaminating.</p>	

	Examine protective gloves for damage before beginning the activity.
Pour only with small heads (20 cm or less) or let liquid flow on the rim of container (avoidance of splashes)	Valid for all activities/all PROCs
Product-related measures	
Product-related measures	High viscosity adjustment with aids to avoid splashes. Delivery only as barrel commodity and/or in the tank car (For all PROC).
Technical measures	Operation temperature: < 60 °C
Organizational measures	
General measures	Handling permissible only after instruction on the dangers. Regular control of the effectiveness of the technical measures, Regular control of the application of the personal measures, (valid for all indicated activities/all above PROCs)
Additional measures	Entrance to production/processing only for technical personnel, Delivery only to the specialized trade. Hold only the quantity necessary for the processing ready.
Local exhaust ventilation required plus good work practise	Local exhaust ventilation is recommended.
Personal protective equipment (PPE)	
	<p>Hand protection: Gloves with 8-hour break-through security for longer application, e.g. butyl rubber or nitrile rubber protective index 6, EN 372.</p> <p>Eye protection: Eye protector or goggles (all activities/PROCs), e.g. EN 166.</p> <p>Respiratory protection: Respiratory protection equipment.</p> <p>Body protection: Exposure suit for some activities with significant exposure possibility.</p> <p>Other measures: Take a shower and change clothes after work.</p> <p>Handling permissible only after instruction on the dangers. Regular control of the effectiveness of the technical measures, Regular control of the application of the personal measures, (valid for all indicated activities/all above PROCs)</p>
7.1.2 Consumer related measures:	Not applicable for this Exposure Scenario
7.2 Environment related measures	It is recommended that rainwater, sanitary sewage and industrial waste water can be separated from the sewerage and disposed by the sewage disposal apparatus. Neutralize before introducing into open waters (Regular control of the pH value during introduction into open waters). Remainders on application devices with much water. Diluted before discharge when necessary.
8. Waste related measures needed to ensure control of risk at the different life cycle stages of the substances (including preparations or articles at the end of service life)	
The wastes should be disposed of in according to local regulations. Avoid disposing into drainage systems and into the environment directly. The soiled packaging should be disposed of in the same way as the product. Discharges of sulphamic acid from production to sewage treatment plants (STP)/waste water treatment plants and receiving waters are well controlled.	
9. Prediction of exposure resulting from the conditions described above	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. Predicted exposures are not expected to exceed the applicable exposure limits (DNEL as provided above) when the operational conditions/risk management measures described above are implemented. Environmental exposure can be excluded taken into account the risk reduction measures which are already being applied.	
10. Guidance to DU to evaluate whether he works inside the boundaries set by the ES	
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

1. Exposure scenario title	ES 6: Industrial use of sulphamic acid for manufacture of urea-formaldehyde resins	
2. Identified uses covered in the Exposure Scenario		
(ES 6 just cover the industrial use of this end product) Identified Use 8 "Coagulator for urea-formaldehyde resins"		
3. Description of activities/process(es) covered in the Exposure Scenario		
SU 8 "Manufacture of bulk, large scale chemicals (including petroleum products)" PC 32 "Polymer preparations and compounds" PROC 4 "Use in batch and other process (synthesis) where opportunity for exposure arises" PROC 5 "Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)" PROC 8a "Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities" PROC 8b "Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities" PROC 15 "Use as laboratory reagent" ERC 1 "Production of chemicals" ERC2 "Formulation of preparations" ERC 6d "Production of resins/rubbers"		
4. Operational conditions		
4.1 Duration of use for which the ES ensures control of risk	Duration of use: < 8 h/day (all PROCs)	
4.2 Frequency of use for which the ES ensures control of risk	Not restricted	
4.3 Amount of use for which the ES ensures control of risk	780 t/y	
5. Substance properties and use parameters		
5.1 Physical form of product in which the substance is contained	Liquid/solid	
5.1a Surface area per amount of article containing the substance (if applicable)	Not applicable	
5.2 Concentration of substance in preparation	Not specified	
5.3 Amount used per time or per activity for which the RMMS, in combination with other operational conditions of use ensure control of risk (if applicable)	Not specified	
6. Other operational conditions determining exposure		
Room volume	≥ 20 m ³	
Ventilation rate:	not specified	
Temperature:	< 60 °C	
Water flow rate:	not limited	
Other operational conditions:	none	
7. Risk Management Measures that, in combination with the operational conditions of use, ensure control of risk related to the different target groups		
7.1.1 Occupational measures		
Data type	Data field	
General measure		
Skin contact inadmissible - Touching forbidden	Not to be used without protective gloves and eye protection Immediately eliminate or neutralize spilled solution, Do not inhale aerosols, fumes	
Additional instruction,	Clean contaminated protective gloves with flowing water before taking off. Clean or take off protective clothing immediately after contaminating.	

	Examine protective gloves for damage before beginning the activity.
Pour only with small heads (20 cm or less) or let liquid flow on the rim of container (avoidance of splashes)	Valid for all activities/all PROCs
Product-related measures	
Product-related measures	High viscosity adjustment with aids to avoid splashes. Delivery only as barrel commodity and/or in the tank car (For all PROC).
Technical measures	Operation temperature: < 60 °C
Organizational measures	
General measures	Handling permissible only after instruction on the dangers. Regular control of the effectiveness of the technical measures, Regular control of the application of the personal measures, (valid for all indicated activities/all above PROCs)
Additional measures	Entrance to production/processing only for technical personnel, Delivery only to the specialized trade. Hold only the quantity necessary for the processing ready.
Local exhaust ventilation required plus good work practise	Local exhaust ventilation is recommended.
Personal protective equipment (PPE)	
	<p>Hand protection: Gloves with 8-hour break-through security for longer application, e.g. butyl rubber or nitrile rubber protective index 6, EN 372.</p> <p>Eye protection: Eye protector or goggles (all activities/PROCs), e.g. EN 166.</p> <p>Respiratory protection: Respiratory protection equipment.</p> <p>Body protection: Exposure suit for some activities with significant exposure possibility.</p> <p>Other measures: Take a shower and change clothes after work.</p> <p>Handling permissible only after instruction on the dangers. Regular control of the observance of the instructions - sanctioning for offence, Regular control of the effectiveness of the technical measures, Regular control of the application of the personal measures, (valid for all indicated activities/all above PROCs)</p>
7.1.2 Consumer related measures:	Not applicable for this Exposure Scenario
7.2 Environment related measures	It is recommended that rainwater, sanitary sewage and industrial waste water can be separated from the sewerage and disposed by the sewage disposal apparatus. Neutralize before introducing into open waters (Regular control of the pH value during introduction into open waters). Remainders on application devices with much water. Diluted before discharge when necessary.
8. Waste related measures needed to ensure control of risk at the different life cycle stages of the substances (including preparations or articles at the end of service life)	
The wastes should be disposed of in according to local regulations. Avoid disposing into drainage systems and into the environment directly. The soiled packaging should be disposed of in the same way as the product. Discharges of sulphamic acid from production to sewage treatment plants (STP)/waste water treatment plants and receiving waters are well controlled.	
9. Prediction of exposure resulting from the conditions described above	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. Predicted exposures are not expected to exceed the applicable exposure limits (DNEL as provided above) when the operational conditions/risk management measures described above are implemented. Environmental exposure can be excluded taken into account the risk reduction measures which are already being applied.	
10. Guidance to DU to evaluate whether he works inside the boundaries set by the ES	
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

1. Exposure scenario title	ES 7: Industrial use of sulphamic acid as nitrite remover in dye and pigment manufacture	
2. Identified uses covered in the Exposure Scenario		
(ES 7 just covers the industrial use process for this end product) Identified Use 9 "Nitrite remover in dye and pigment manufacture"		
3. Description of activities/process(es) covered in the Exposure Scenario		
SU 3 "Industrial uses: Uses of substance as such or in preparations at industrial sites" PC 34 "Textile dyes, finishing and impregnating products" PROC 5 "Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)" ERC2 "Formulation of preparations" ERC 4 "Industrial use of processing aids"		
4. Operational conditions		
4.1 Duration of use for which the ES ensures control of risk	Duration of use: > 4 h/day (all PROCs)	
4.2 Frequency of use for which the ES ensures control of risk	Not restricted	
4.3 Amount of use for which the ES ensures control of risk	60 t/y	
5. Substance properties and use parameters		
5.1 Physical form of product in which the substance is contained	Liquid	
5.1a Surface area per amount of article containing the substance (if applicable)	Not applicable	
5.2 Concentration of substance in preparation	Not specified	
5.3 Amount used per time or per activity for which the RMMs, in combination with other operational conditions of use ensure control of risk (if applicable)	Not specified	
6. Other operational conditions determining exposure		
Room volume	≥ 20m ³	
Ventilation rate:	not specified	
Temperature:	not restricted	
Water flow rate:	not limited	
Other operational conditions:	none	
7. Risk Management Measures that, in combination with the operational conditions of use, ensure control of risk related to the different target groups		
7.1.1 Occupational measures		
Data type	Data field	
General measure		
Skin contact inadmissible - Touching forbidden	Not to be used without protective gloves and eye protection Immediately eliminate or neutralize spilled solution, Do not inhale aerosols, fumes	
Additional instruction,	Clean contaminated protective gloves with flowing water before taking off. Clean or take off protective clothing immediately after contaminating. Examine protective gloves for damage before beginning the activity.	
Pour only with small heads (20 cm or less) or let liquid flow on the rim of container (avoidance of splashes)	Valid for all activities/all PROCs	
Product-related measures		

Product-related measures	High viscosity adjustment with aids to avoid splashes. Delivery only as barrel commodity and/or in the tank car (For all PROC).
Technical measures	Operation temperature: < 60 °C
Organizational measures	
General measures	Handling permissible only after instruction on the dangers. Regular control of the effectiveness of the technical measures, Regular control of the application of the personal measures, (valid for all indicated activities/all above PROCs)
Additional measures	Entrance to production/processing only for technical personnel, Delivery only to the specialized trade. Hold only the quantity necessary for the processing ready.
Local exhaust ventilation required plus good work practise	Local exhaust ventilation is recommended.
Personal protective equipment (PPE)	
	<p>Hand protection: Gloves with 8-hour break-through security for longer application, e.g. butyl rubber or nitrile rubber protective index 6, EN 372.</p> <p>Eye protection: Eye protector or goggles (all activities/PROCs), e.g. EN 166.</p> <p>Respiratory protection: Respiratory protection equipment.</p> <p>Body protection: Exposure suit for some activities with significant exposure possibility.</p> <p>Other measures: Take a shower and change clothes after work.</p> <p>Handling permissible only after instruction on the dangers. Regular control of the effectiveness of the technical measures, Regular control of the application of the personal measures, (valid for all indicated activities/all above PROCs)</p>
7.1.2 Consumer related measures:	Not applicable for this Exposure Scenario
7.2 Environment related measures	It is recommended that rainwater, sanitary sewage and industrial waste water can be separated from the sewerage and disposed by the sewage disposal apparatus. Neutralize before introducing into open waters (Regular control of the pH value during introduction into open waters). Remainders on application devices with much water. Diluted before discharge when necessary.
8. Waste related measures needed to ensure control of risk at the different life cycle stages of the substances (including preparations or articles at the end of service life)	
The wastes should be disposed of in according to local regulations. Avoid disposing into drainage systems and into the environment directly. The soiled packaging should be disposed of in the same way as the product. Discharges of sulphamic acid from production to sewage treatment plants (STP)/waste water treatment plants and receiving waters are well controlled.	
9. Prediction of exposure resulting from the conditions described above	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. Predicted exposures are not expected to exceed the applicable exposure limits (DNEL as provided above) when the operational conditions/risk management measures described above are implemented. Environmental exposure can be excluded taken into account the risk reduction measures which are already being applied.	
10. Guidance to DU to evaluate whether he works inside the boundaries set by the ES	
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

1. Exposure scenario title	ES 8: Professional use of sulphamic acid as plasticizer in production of thermosetting plastics (e.g. phenolics)	
2. Identified uses covered in the Exposure Scenario		
(ES 8 just covers the industrial use process of Sulfamic acid as Plasticizer) Identified Use 17 "Plasticizer"		
3. Description of activities/process(es) covered in the Exposure Scenario		
SU 22 "Professional uses: Public domain (administration, education, entertainment, services, craftsmen)" PC 32 "Polymer preparations and compounds" PROC 2 "Use in closed, continuous process with occasional controlled exposure" PROC 8a "Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities" PROC 8b "Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities" PROC 10 "Roller application or brushing" PROC 11 "Non industrial spraying" PROC 16 "Using material as fuel sources, limited exposure to unburned product to be expected" PROC 17 "Lubrication at high energy conditions and in partly open process" PROC 20 "Heat and pressure transfer fluids in dispersive, professional use but closed systems" ERC 8a "Wide dispersive indoor use of processing aids in open systems" ERC 8d "Wide dispersive outdoor use of processing aids in open systems" ERC 9a "Wide dispersive indoor use of substances in closed systems" ERC 9b "Wide dispersive outdoor use of substances in closed systems"		
4. Operational conditions		
4.1 Duration of use for which the ES ensures control of risk	No data available	
4.2 Frequency of use for which the ES ensures control of risk	Not specified	
4.3 Amount of use for which the ES ensures control of risk	No data available	
5. Substance properties and use parameters		
5.1 Physical form of product in which the substance is contained	Liquid/solid	
5.1a Surface area per amount of article containing the substance (if applicable)	Not applicable	
5.2 Concentration of substance in preparation	Not specified	
5.3 Amount used per time or per activity for which the RMMS, in combination with other operational conditions of use ensure control of risk (if applicable)	Not specified	
6. Other operational conditions determining exposure		
Room volume	≥ 20m ³	
Ventilation rate:	not specified	
Temperature:	< 60 °C	
Water flow rate:	not limited	
Other operational conditions:	none	
7. Risk Management Measures that, in combination with the operational conditions of use, ensure control of risk related to the different target groups		
7.1.1 Occupational measures		
Data type	Data field	
General measure		
Skin contact inadmissible - Touching forbidden	Not to be used without protective gloves and eye protection Immediately eliminate or neutralize spilled solution,	

	Do not inhale aerosols, fumes
Additional instruction,	Clean contaminated protective gloves with flowing water before taking off. Clean or take off protective clothing immediately after contaminating. Examine protective gloves for damage before beginning the activity.
Pour only with small heads (20 cm or less) or let liquid flow on the rim of container (avoidance of splashes)	Valid for all activities/all PROCs
Product-related measures	
Product-related measures	High viscosity adjustment with aids to avoid splashes. Delivery only as barrel commodity and/or in the tank car (For all PROC).
Technical measures	Operation temperature: < 60 °C
Organizational measures	
General measures	Handling permissible only after instruction on the dangers. Regular control of the effectiveness of the technical measures, Regular control of the application of the personal measures, (valid for all indicated activities/all above PROCs)
Additional measures	Entrance to production/processing only for technical personnel, Delivery only to the specialized trade. Hold only the quantity necessary for the processing ready.
Local exhaust ventilation required plus good work practise	Local exhaust ventilation is recommended.
Personal protective equipment (PPE)	
	<p>Hand protection: Gloves with 8-hour break-through security for longer application, e.g. butyl rubber or nitrile rubber protective index 6, EN 372.</p> <p>Eye protection: Eye protector or goggles (all activities/PROCs), e.g. EN 166.</p> <p>Respiratory protection: Respiratory protection equipment.</p> <p>Body protection: Exposure suit for some activities with significant exposure possibility.</p> <p>Other measures: Take a shower and change clothes after work. Handling permissible only after instruction on the dangers. Regular control of the effectiveness of the technical measures, Regular control of the application of the personal measures, (valid for all indicated activities/all above PROCs)</p>
7.1.2 Consumer related measures:	Not applicable for this Exposure Scenario
7.2 Environment related measures	<p>Do not discharge to water directly.</p> <p>Diluted when necessary.</p> <p>Remainders on application devices with much water.</p> <p>The waste gas should not be discharged to the air directly.</p> <p>No special information is available on onsite waste treatment.</p> <p>As the sulphamic acid may be recycled, reused or disposed by the manufacture or their downstream users, the discharge to wastes can be negligible.</p> <p>Recovery of sludge for agriculture or horticulture is forbidden.</p>
8. Waste related measures needed to ensure control of risk at the different life cycle stages of the substances (including preparations or articles at the end of service life)	
The wastes should be disposed of in according to local regulations. Avoid disposing into drainage systems and into the environment directly. The soiled packaging should be disposed of in the same way as the product.	
9. Prediction of exposure resulting from the conditions described above	
<p>The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.</p> <p>Predicted exposures are not expected to exceed the applicable exposure limits (DNEL as provided above) when the operational conditions/risk management measures described above are implemented. Environmental exposure can be excluded taken into account the risk reduction measures which are already being applied.</p>	

10. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

1. Exposure scenario title	ES 9: Industrial use of sulphamic acid for synthesis of sweeteners	
Identified uses covered in the Exposure Scenario		
(ES 9 just covers the industrial use of the sulphamic acid in synthesis of sweeteners) Identified Use 18: "Synthesis of sweeteners"		
3. Description of activities/process(es) covered in the Exposure Scenario		
SU 4 "Manufacture of food products" PC 19 "Intermediate" PROC 3 "Use in closed batch process (synthesis or formulation)" ERC 1 "Production of chemicals"		
4. Operational conditions		
4.1 Duration of use for which the ES ensures control of risk	Not specified	
4.2 Frequency of use for which the ES ensures control of risk	Not specified	
4.3 Amount of use for which the ES ensures control of risk	1000 t/y	
5. Substance properties and use parameters		
5.1 Physical form of product in which the substance is contained	Solid	
5.1a Surface area per amount of article containing the substance (if applicable)	Not applicable	
5.2 Concentration of substance in preparation	Not specified	
5.3 Amount used per time or per activity for which the RMMs, in combination with other operational conditions of use ensure control of risk (if applicable)	Not specified	
6. Other operational conditions determining exposure		
Room volume	≥ 20 m ³	
Ventilation rate:	not specified	
Temperature:	< 60 °C	
Water flow rate:	not limited	
Other operational conditions:	none	
7. Risk Management Measures that, in combination with the operational conditions of use, ensure control of risk related to the different target groups		
7.1.1 Occupational measures		
Data type	Data field	
General measure		
Skin contact inadmissible - Touching forbidden	Not to be used without protective gloves and eye protection Immediately eliminate or neutralize spilled solution, Do not inhale aerosols, fumes	
Additional instruction,	Clean contaminated protective gloves with flowing water before taking off. Clean or take off protective clothing immediately after contaminating. Examine protective gloves for damage before beginning the activity.	
Pour only with small heads (20 cm or less) or let liquid flow on the rim of container (avoidance of splashes)	Valid for all activities/all PROCs	
Product-related measures		
Product-related measures	High viscosity adjustment with aids to avoid splashes. Delivery only as barrel commodity and/or in the tank car (For all PROC).	
Technical measures	Operation temperature: < 60 °C	

Organizational measures	
General measures	Handling permissible only after instruction on the dangers. Regular control of the effectiveness of the technical measures, Regular control of the application of the personal measures, (valid for all indicated activities/all above PROCs)
Additional measures	Entrance to production/processing only for technical personnel, Delivery only to the specialized trade. Hold only the quantity necessary for the processing ready.
Local exhaust ventilation required plus good work practise	Local exhaust ventilation is recommended.
Personal protective equipment (PPE)	
	<p>Hand protection: Gloves with 8-hour break-through security for longer application, e.g. butyl rubber or nitrile rubber protective index 6, EN 372.</p> <p>Eye protection: Eye protector or goggles (all activities/PROCs), e.g. EN 166.</p> <p>Respiratory protection: Respiratory protection equipment.</p> <p>Body protection: Exposure suit for some activities with significant exposure possibility.</p> <p>Other measures: Take a shower and change clothes after work.</p> <p>Handling permissible only after instruction on the dangers. Regular control of the effectiveness of the technical measures, Regular control of the application of the personal measures, (valid for all indicated activities/all above PROCs)</p>
7.1.2 Consumer related measures:	Not applicable for this Exposure Scenario
7.2 Environment related measures	<p>Do not discharge to water directly.</p> <p>Diluted when necessary.</p> <p>Remainders on application devices with much water.</p> <p>The waste gas should not be discharged to the air directly.</p> <p>No special information is available on onsite waste treatment.</p> <p>As the sulphamic acid may be recycled, reused or disposed by the manufacture or their downstream users, the discharge to wastes can be negligible.</p> <p>Recovery of sludge for agriculture or horticulture is forbidden.</p>
8. Waste related measures needed to ensure control of risk at the different life cycle stages of the substances (including preparations or articles at the end of service life)	
The wastes should be disposed of in according to local regulations. Avoid disposing into drainage systems and into the environment directly. The soiled packaging should be disposed of in the same way as the product.	
9. Prediction of exposure resulting from the conditions described above	
<p>The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.</p> <p>Predicted exposures are not expected to exceed the applicable exposure limits (DNEL as provided above) when the operational conditions/risk management measures described above are implemented. Environmental exposure can be excluded taken into account the risk reduction measures which are already being applied.</p>	
10. Guidance to DU to evaluate whether he works inside the boundaries set by the ES	
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

1. Exposure scenario title	ES 10: Industrial use of sulphamic acid as composite additive for hardening control of amino resins	
2. Identified uses covered in the Exposure Scenario		
(ES 10 just covers the industrial use of the Sulfamic acid as composite additive for hardening control of amino resins) Identified Use 20 "Composite additive for hardening control of amino resins"		
3. Description of activities/process(es) covered in the Exposure Scenario		
SU 3 "Industrial uses: Uses of substance as such or in preparations at industrial sites" PC 1 "Adhesives, sealants" PROC 5 "Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)" PROC 8a "Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities" PROC 8b "Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities" ERC2 "Formulation of preparations" ERC 6d "Production of resins/rubbers"		
4. Operational conditions		
4.1 Duration of use for which the ES ensures control of risk	> 4 h/d	
4.2 Frequency of use for which the ES ensures control of risk	Not specified	
4.3 Amount of use for which the ES ensures control of risk	15-100 t/y	
5. Substance properties and use parameters		
5.1 Physical form of product in which the substance is contained	Liquid	
5.1a Surface area per amount of article containing the substance (if applicable)	Not applicable	
5.2 Concentration of substance in preparation	Not specified	
5.3 Amount used per time or per activity for which the RMMS, in combination with other operational conditions of use ensure control of risk (if applicable)	Not specified	
6. Other operational conditions determining exposure		
Room volume	≥ 20 m ³	
Ventilation rate:	not specified	
Temperature:	< 60 °C	
Water flow rate:	not limited	
Other operational conditions:	none	
7. Risk Management Measures that, in combination with the operational conditions of use, ensure control of risk related to the different target groups		
7.1.1 Occupational measures		
Data type	Data field	
General measure		
Skin contact inadmissible - Touching forbidden	Not to be used without protective gloves and eye protection Immediately eliminate or neutralize spilled solution, Do not inhale aerosols, fumes	
Additional instruction,	Clean contaminated protective gloves with flowing water before taking off. Clean or take off protective clothing immediately after contaminating. Examine protective gloves for damage before beginning the activity.	
Pour only with small heads (20 cm or less) or let liquid flow on the rim of container	Valid for all activities/all PROCs	

(avoidance of splashes)	
Product-related measures	
Product-related measures	High viscosity adjustment with aids to avoid splashes. Delivery only as barrel commodity and/or in the tank car (For all PROC).
Technical measures	Operation temperature: < 60 °C
Organizational measures	
General measures	Handling permissible only after instruction on the dangers. Regular control of the effectiveness of the technical measures, Regular control of the application of the personal measures, (valid for all indicated activities/all above PROCs)
Additional measures	Entrance to production/processing only for technical personnel, Delivery only to the specialized trade. Hold only the quantity necessary for the processing ready.
Local exhaust ventilation required plus good work practise	Local exhaust ventilation is recommended.
Personal protective equipment (PPE)	
	<p>Hand protection: Gloves with 8-hour break-through security for longer application, e.g. butyl rubber or nitrile rubber protective index 6, EN 372.</p> <p>Eye protection: Eye protector or goggles (all activities/PROCs), e.g. EN 166.</p> <p>Respiratory protection: Respiratory protection equipment.</p> <p>Body protection: Exposure suit for some activities with significant exposure possibility.</p> <p>Other measures: Take a shower and change clothes after work. Handling permissible only after instruction on the dangers. Regular control of the effectiveness of the technical measures, Regular control of the application of the personal measures, (valid for all indicated activities/all above PROCs)</p>
7.1.2 Consumer related measures:	Not applicable for this Exposure Scenario
7.2 Environment related measures	It is recommended that rainwater, sanitary sewage and industrial waste water can be separated from the sewerage and disposed by the sewage disposal apparatus. Neutralize before introducing into open waters (Regular control of the pH value during introduction into open waters). Remainders on application devices with much water. Diluted before discharge when necessary.
8. Waste related measures needed to ensure control of risk at the different life cycle stages of the substances (including preparations or articles at the end of service life)	
The wastes should be disposed of in according to local regulations. Avoid disposing into drainage systems and into the environment directly. The soiled packaging should be disposed of in the same way as the product. Discharges of sulphamic acid from production to sewage treatment plants (STP)/waste water treatment plants and receiving waters are well controlled.	
9. Prediction of exposure resulting from the conditions described above	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. Predicted exposures are not expected to exceed the applicable exposure limits (DNEL as provided above) when the operational conditions/risk management measures described above are implemented. Environmental exposure can be excluded taken into account the risk reduction measures which are already being applied.	
10. Guidance to DU to evaluate whether he works inside the boundaries set by the ES	
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

Appendix: Abbreviations used in this exposure scenario document

AC	Article category
DNEL	Derived no effect level
DU	Downstream user
ECETOC TRA	Targeted Risk Assessment Tool provided by ECETOC (European Centre for Ecotoxicology and Toxicology of Chemicals)
ERC	Environmental release category
ES	Exposure scenario
OC	Operational conditions
PC	Product category
PEC	Predicted environmental concentration
PNEC	Predicted no effect concentration
PROC	Process category
RMM	Risk management measures
SU	Sector of use