SAFETY DATA SHEET

According to the Appendix to the European Regulation no. 830/2015 amending Regulation (CE) No 1907/2006 and Commission Regulation (EU) no. 453/2010 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)

POLYMETHYLAMINE-M (PMTA-M)

SECTION: IDENTIFICATION OF MIXTURE SUBSTANCE AND OF THE COMPANY

1.1. Product Identification

Product trade name: **POLYMETHYLAMINE-M (PMTA-M)**

Product type: Polymer

Chemical name of the main ingredient: 2-aminoethanol

EC no. of main ingredient: 205-483-3

CAS no. of main ingredient: 141-43-5

INDEX no.: 603-030-00-8

REACH registration no. for POLYMETHYLAMINE (PMTA): polymer exempt from registration, according to Art. 6 (3) of REACH Regulation, provided the monomer - the main ingredient, is registered.

Importer's REACH 2-aminoethanol registration no.: 01-2119486455-28-XXXX

1.2. Intended use of the substance or mixture and contraindications

The recommended uses of this product are in accordance with those described and evaluated in the Chemical Safety Report (CSR), within the REACH registration procedure.

Industrial use: Tensioactive substance as ready-to-use product (surfactant) or raw material for the production of cleaning agents, detergents, solvents in the industrial environment.

Professional use: Cleaning agent (surfactant) for washing and cleaning, windshields defrosting solutions or cleaning agents.

2. Contact details of the Provider of the Safety Data Sheet

2.1. Emergency telephone number:

Office for International Regulations and Toxicology Information Telephone: +40 21 318 3606 (Monday to Friday, from8.00 a.m. to 3 p.m.). Address: 1-3, Dr. Leonte Anastasevici Street, District 5, Bucharest, Romania. Unique emergency number: 112

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or of the mixture:

Name of Product: **POLYMETHYLAMINE-M - '' PMTA-M ''**

Classification as per European Regulation (EC) no. 1272/2008, as well as following the evaluation of the chemical safety properties of the product:

Hazard class	Hazard class code hazard category	Hazard statements
Flammable liquid	Flam. Liq 2	H 225 – Very flammable liquid and vapours.

Physical-chemical effects on human health and the environment.

The product is flammable. The product is not considered to have harmful effects on the workers or to have ecotoxicity potential on the environment. However, it is recommended to comply with all precautionary measures applicable to chemicals, when working with this product.

2.2 Label elements

Labelling according the European Regulation (EC) no. 1272/ 2008, including subsequent amendments and completions:
Label Name: **POLYMETHYLAMINE-M (PMTA-M)**
Warning word: **HAZARD**
Hazard Symbol:

GHS02- very flammable

Hazard statement

H225: Highly flammable liquid and vapours.

Precautionary statement: Prevention

P 210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P280 Wear protective gloves/ protective clothing/ eye protection/face protection.

Precautionary statement: Intervention

P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P370 + P378 In case of fire: Use alcohol-resistant foam for extinction.

Precautionary statement: Storage

P403 + P235 Store in a well-ventilated area. Keep cold.

Precautionary statement: Disposition

P501 Dispose the contents or the container in a waste collection point in accordance with national regulations.

2.3 Other hazards

This product is not identified as a PBT - persistent, bioaccumulative and toxic/ vPvB poduct - very persistent, highly bioaccumulative.

SECTION 3: COMPOSITION AND INFORMATION ON INGREDIENTS

The product is classified as	Polymer
Trade name	POLYMETHYLAMINE-M PMTA-M
Polymer name	POLYMETHYLAMINE (PMTA)
Name of main ingredient	2-aminoethanol (monomer)

3.1 Classification of the ingredients:

Name of product	Polymethylamine **(**PMTA)
CAS no.	NA
EC no.	NA
Concentration range (%)	99.5
Classification of product according to the CLP Regulation	Flam. Liq 2, H225
Name of main ingredient	2-aminoethanol
EC no. of main ingredient	205-483-3
CAS no. of main ingredient	141-43-5
REACH no. of main ingredient	01-2119486455-28-XXXX

SECTION 4: FIRST AID

4.1 Description of first aid measures

General Remarks

Remove contaminated clothing immediately.

In case of inhalation

Move person to fresh air or to a well-ventilated room.

In case of skin contact

Wash abundantly with water and soap.

In case of eye contact

Wash carefully with water for several minutes. In case of doubt or if symptoms persist, seek medical advice.

Ingestion

Rinse your mouth with water. Seek medical advice if discomfort persists.

4.2 The most important symptoms and effects, both acute and delayed

No symptoms and effects are known so far.

4.3 Indications of any immediate medical attention and special treatment needed

There is no other relevant information.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media: alcohol-resistant foam, chemical powder, CO2 or pulverised water. Use water sprays to cool containers and vessels exposed to caloric radiation**. Inappropriate extinguishing media**: do not use direct water jet.

5.2 Particular hazards caused by the substance or the concerned mixture

In case of fire, the substance may give off toxic fumes of carbon monoxide and carbon dioxide.

5.3 Advice for firefighters

Extinguish the fire from a reasonable distance, taking the usual precautions. Wear protective equipment specially designed for firefighters, such as boots, overalls, gloves, eye and face guards and self-contained breathing apparatus.

Other information: If the containers are exposed to fire, keep cool by spraying with water. If possible use water sprays to lower the smoke to the ground.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. **Personal protection, protective equipment and emergency procedures**

For the personnel who are not involved in emergencies;

(A) Wear suitable protective clothing (including personal protective equipment referred to in section 8 of the SDS) to prevent any contamination of the skin, eyes and personal clothing. Avoid inhalation.

(B) Remove all fire sources, set up "no smoking" boards, use no-spark tools. Provide rooms with sufficient ventilation.

(C) Evacuate the hazardous area.

For the personnel who intervene in emergencies

For recommendations on the suitable fabric for personal protective clothing: see 8.2. Precautions after the fire was extinguished (firefighters): Wash contaminated clothing and breathing apparatus with water before removing face mask and suit.

6.2 Environmental precautions

Do not release into the environment. Insulate small spillage with non-flammable absorbent material and collect in closed containers which are then destroyed.

6.3 Methods and materials for containment and cleaning up

6.3.1 Recommendations on how to isolate spillage:

(a) Bank sewers with absorbent materials;
(b) Apply capping procedures;
(c) Collect in retention tanks or collecting drains around storage spaces.

6.3.2 Cleaning up spillage:

(a) Cleaning techniques: wash with water jet; recover and transfer in appropriate packaging or intermediary tanks; aspirate.
(b) Absorbent materials: sand, sawdust.
(c) Spillage may be contained by covering with alcohol resistant foam.
(d) Equipment required for containment and cleaning up: vacuum, brooms, shovels.

Use flame proof pumps. If they are electric, minimum T3 class is required. Ensure that the pumping equipment is properly grounded.

The resulting waste water is further directed to a treatment plant. Final traces or small spillages may also be cleaned up with absorbent materials.

6.4 References to other sections

For personal protection see 8.2.
See the attached exposure scenarios, corresponding to each identified application.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Avoid physical damage to the packaging. The personnel handling the product must wear appropriate protective equipment (avoid electrostatic charges). Keep away from incompatible materials or sources of fire, do not smoke, and do not use tools (tools) that cause sparks in the handling area. Ventilate the handling area well.

Recommendations concerning general hygiene at work
Wash hands before breaks and at the end of the work day. Do not eat, drink or smoke in work areas.
Remove contaminated clothing and protective equipment before entering the dining areas.

7.2 Conditions for safe storage, including any incompatibilities

Keep the container tightly closed, in a cool, well-ventilated and airy place, away from moisture and light sources. On prolonged exposure to light, the colour changes (yellow).

Types of packaging: CF tanks, tankers, eco-bulk.

Incompatible substances or mixtures
Observe the recommendations for combined storage.
Other recommendations
• **Ventilation requirements**
Use local and total ventilation.
• **Special design of storage spaces or tanks**
Recommended temperature for storage: up to 45 °C.

7.3 End Use
Name of the exposure scenarios (ES) corresponding to the identified applications:
ES 1: Use as formulation agent for mixtures (industrial) (ES 1)
ES 2: Use as formulation agent for mixtures (professional) (ES 2)
ES 3: Use as intermediary product (chemical synthesis – e.g. solvents) (ES 3)
ES 4: Use in the detergent industry and as cleaning agent (industrial) (ES 4)
ES 5: Use in the detergent industry and as cleaning agent (professional) (ES 5)
ES 6: Use in the detergent industry and as cleaning agent (consumers) (ES 6)

SECTION 8: EXPOSURE CONTROL/ PERSONAL PROTECTION

8.1 Control Parameters

National exposure limits

Occupational exposure limit (Exposure limits at the work place)

The applicable national law in the field of occupational health and safety, namely GR 1218/2006, Appendix 1, including subsequent ammendments and additions (transposing the provisions of the European Directive 98/ 24/ EC for establishing a list of occupational exposure limit values) does not provide any occupational exposure limit values (ELVs) or tolerable biological limit values (BLVs) for this product.

8.2 Exposure control

Personal protection measures (personal protective equipment)

Eye/face protection

Use eye protection against splashes of fluid.

Skin protection

Hand protection

Wear suitable gloves. Suitable chemical protection gloves are tested according to EN 374.
Material type NBR (Nitrile rubber)
Material thickness > 0.11 mm
Glove perforation time > 480 minutes (permeation: level 6)
Other protective measures
Preventive skin protection (protective lotions/ ointments) is recommended**.**
Respiratory protection

Not normally required.

8.3 Exposure control of the environment

Risk management measures: No exposure estimation was required, as no risk was identified within the PBT/ vPvB assessment. Therefore, all identified uses for the substance have been assessed as harmless to the environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Liquid
Colour	Colourless / pale yellow
Odour	Specific odour of monoatomic alcohols
Odour threshold	No available data
Ignition Temp. (closed cup) °C	11
Density at 20°C , kg/m^3	795.5 ± 0.4
Density of vapours	No available data
Solubility (in water)	Completely miscible
Decomposition Temperature °C	No available data
Kinematic viscosity @ 20ºC Mm^2/s Dynamic viscosity @ 20ºC MPa/s	0.7777 ± 0.0056 0.6187 ± 0.0045
Explosivity	No available data
Oxidative properties	No available data

Molecular mass (1 polymer unit)	1315
pH at 20°C	10.50 ± 0.1
Mass fraction of polymethylamine, max.	99.5
Boiling point °C	63.0 ± 1.1
Freezing point °C	-72.5
Water content, mg/kg	947 ± 15

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity
No particular risks of reaction with other substances under normal conditions of use.

10.2. Chemical Stability
The product is stable under recommended storage and use conditions.

10.3 Possible hazardous reactions
None known.

10.4 Conditions to avoid
Avoid overheating, electrostatic charges, all ignition sources. Avoid exposure of the product to sources of heat or flames.

10.5 Incompatible materials
No additional information available.

10.6 Hazardous decomposition products
Hazardous combustion products: see section 5.

SECTION 11: TOXICOLOGY INFORMATION

11.1. Toxicological effects.

Acute Toxicity
Based on *in vitro* determinations achieved within the National Institute for Chemo-Pharmaceutical Research and Development.

Exposure route	Test dose	Obtained value	Assay method
Acute oral	LD 50	> 5000 mg/ body kg (nontoxic)	OECD Guideline 420

Dermic (skin irritating)	LD 50	0.06 cumulative irritation index (non irritative)	OECD Guideline 404
Sensitizing	LD 50	< 1 evaluation score (no sensitizing potential)	OECD Guideline 406

Skin corrosion/ irritation:
The product is not classified as corrosive/ irritant to skin.
Severe eye damage / eye irritation
The product is not classified as potential cause for severe eye damage or eye irritation.
Respiratory or skin sensitization
The product is not classified as sensitizing to the airways or to the skin.
Summary of the CSR assessment
The product is not classified as mutagenic on embryonic, carcinogenic cells or toxic cells for reproduction
Specific target organ toxicity - a single exposure
Single exposure is classified as nontoxic to a specific target organ.
Specific target organ toxicity - repeated exposure
The product is classified as nontoxic to a specific target organ by repeated exposure.
Danger by aspiration
The product is not classified as harmful when aspired.
Symptoms related to the physical-chemical and toxicological properties of the product

Eye contact
Based on the available data, the classification criteria are not met.
Inhalation
Based on the available data, the classification criteria are not met.
Skin contact
Based on the available data, the classification criteria are not met.

SECTION 12: ECOLOGICAL INFORMATION

12.1. **Toxicity**

Freshwater algae growth inhibition test (unicellular green algae, sp. Selenastrum capricornutum, current denomination: Pseudokirchneriella subcapitata)
Mean inhibitory concentration on growth rate ($EC_{(r)\ 50\text{-}72h}$): > 100 mg/ l
Acute toxicity test with planktonic crustaceans – mobility inhibition (Daphnia magna species)
Mean lethal immobilization concentration ($EC_{50\text{-}48h}$): > 100 mg / l
The product is not harmful for the aquatic environment.

12.2. **Degradation and persistence**
Biodegradability test

Total biodegradation potential (D28 days): 77.87%.

Percentage of surface agent removal (non-ionic): 88%

Degradation time: 21 days

12.3. Bioaccumulation potential
No available data.

12.4. Mobility in the soil
No available data.

12.5. PBT and vPvB assessment

This product does not contain any PBT or vPvB substances.

12.6. Other adverse effects
None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose of the waste product and packaging according to applicable law 211/2011.

13.1 Waste treatment methods

a) Waste treatment methods and containers

Do not dispose of the product/ packaging as household waste. Do not discharge large quantities of product in sewers.

Packaging: Clean by washing with water.

Product waste code: 200129 * detergents containing dangerous substances

Dirty packaging waste code: 150110 * packaging containing residues or hazardous substance contaminants.

b) Physical-chemical properties affecting the waste treatment method of choice No available data.

c) Disposal

When a treatment plant is not available, the content of the packaging is disposed at collection points for hazardous waste.

d) Identification of special precautions for waste treatment options

e) Wear protective equipment according to paragraph 8.2.

SECTION 14: TRANSPORT INFORMATION

Land transport: ADR / RID (Road / Rail)

14.1	UN Number	UN 1993
14.2	Proper shipping name	POLYMETHYLAMINE (PMTA)
14.3	Hazard classification	3 - NSA FLAMMABLE LIQUID
14.4	Packaging group	III – low danger
14.5	Environmental hazards	
	Marine pollutant	No
14.6	Special precautions for users	Refer to Sections 4 -8
14.7	Bulk transportation, in accordance to Appendix II to MARPOL and the IBC Code	Not available

Additional Information

Hazard identification no.	30 (cod Kemler)
Classification Code	F1
Hazard Labels	3

Road Transportation ADR	
Special provisions	274, 601
Packaging	
Packaging instructions	P001, IBC03, LP01, R001
Common Packaging provisions	MP19
Mobile tanks and bulk containers	
Instructions	T2
Special Provisions	TP1, TP29
ADR Tanks	
Tank code	LGBF
Vehicle for transportation in tank	FL
Transport category	3
Tunnel restriction code	(D/E)
Special transport provisions for	
Packages	V12
Operation	S2

Railroad Transport –RID	
Special Provisions	274, 601
Packaging	
Packaging instructions	P001, IBC03, LP01, R001
Common packaging provisions	MP19
Mobile tanks and bulk containers	
Instructions	T4
Special Provisions	TP1, TP29
RID Tanks	
Tank code	LGBF
Transport category	3
Special transport provisions for	
Packages	W12
UN "Model Regulation"	UN 1993 N.S.A FLAMMABLE LIQUID (POLYMETHYLAMINE PMTA), 3,III

SECTION 15: REGULATORY INFORMATION

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

- EC Regulation no.1907/2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), including subsequent ammendments and additions

- European Regulation no. 830/2015 amending Regulation (EU) no. 453/2010 and Regulation (EC) no.1907/2006, concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH);

- Regulation (EC) no.1272/2008 CLP on the classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 –REACH

- Directive 2012/18/ EU (Seveso) on the control of major accident hazards involving dangerous substances:

- Name of dangerous substances - APPENDIX I: P5c FLAMMABLE LIQUIDS
- Relevant quantities of substances for the development plan of lower level sites: 5000 tons
- Relevant quantities of substances for the development plan of higher level sites: 50 000 tons
- Directive 2010/75/ EU on industrial emissions.

15.2. Chemical safety assessment

The chemical safety assessment for Polymethylamine was performed as part of the REACH procedure carried out by the importer.

16.1. SDS Update

Not required.

16.2. Complete text of the hazard and precaution statements provided in chapter 2:

Hazard statement

H225: Highly flammable liquid and vapour.

Precautionary statement: Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking..

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment..

P241 Use explosion-proof electrical/ventilating/lighting/explosion-proof equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge

P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement: Intervention

P303 + P361 + P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P370 + P378 In case of fire: Use alcohol-resistant foam for extinction.

Precautionary statement: Storage

P403 + P235 Store in a well-ventilated area. Keep cold.

P501 Dispose the contents or the container in a waste collection point in accordance with national regulations.

16.3 This document includes the following acronyms/ abreviations:

CAS: Abstract Chemical Service
CLP: Classification, Labeling, Packaging
CSR: Chemical Safety Report
HG: Decision of the Government (Romania)
DL50: 50% lethal dose (50% suffered lethal effects from this dose)
UN: Hazard identification number for transport
ADR: European agreement on the international road transport of dangerous goods
RID: Regulation on International Rail Transport of Dangerous Goods (RID)
IMDG: International Maritime Dangerous Goods Code (IMDG)
IATA: International Air Transport Association (IATA)
GHS: Global Harmonized System for the Classification and Labeling of Chemicals
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very persistent, very bioaccumulative

16.4 Reference sources

1) Hazardous Chemicals - Desk Reference (Richard J, Lewis, SR.) , ed. 4
2) Cooper's TOXIC EXPOSURES, Desk Reference, 1997
3) ERICard Metanol (ERIC 3-15)
4) http://echa.europa.eu/en/candidate-list-table
5) https://echa.europa.eu/en/information-on-chemicals

The data contained in this Safety Data Sheet is based on applicable national law and present knowledge of the health and safety properties of the product at the time of drafting. The data given here only applies when the product is used for proper application(s), and in accordance with the recommendations safe use, handling and transportation. Physical and chemical data describe the product based on safety requirements for the intended purpose only.

The manufacturer and distributor are not responsible for the use of the product in areas other than those recommended.

The appendix to this Safety Data Sheet was drafted based on the REACH Safety Report (CSR) on the monomer 2 aminoethanol.

Scenario 1: Industrial formulation of mixtures (ES 1)

This scenario is described by the following combinations of use descriptors. The corresponding contributing scenarios are described in the respective subchapters.

An overall exposure scenario may be described by a number of contributing scenarios which may be subdivided into environmental exposure, worker exposure and consumer exposure. The following scenarios contribute to the scenario *Industrial formulation of mixtures*.

Table 1. Description of ES 1

Free short title	Industrial formulation of mixtures (ES 1)
Systematic title based on use descriptor	ERC 2; PROC 1, 2, 3, 4, 5, 8A, 8B, 9
Name of contributing environmental scenario and corresponding ERC	ERC 2 Formulation of preparations
Name(s) of contributing worker scenarios and corresponding PROCs	PROC 1 - Use in closed process, no likelihood of exposure PROC 2 - Use in closed, continuous process with occasional controlled exposure PROC 3 - Use in closed batch process (synthesis or formulation) PROC 4 - Use in batch and other process (synthesis) where opportunity for exposure arises PROC 5 - Mixing or blending in batch processes (multistage and/or significant contact) PROC 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 9 - Transfer of chemicals into small containers (dedicated filling line)

1.1 Contributing Scenario (1) controlling environmental exposure for ERC 2

Operational conditions	
Annual site tonnage	1 to/year
Daily amount used at site	0.285714 kg/day
Release times per year	350 days/year
Local freshwater dilution factor	10
Local marine water dilution factor	100
Release fraction to air from process	0 %
Release fraction to wastewater from process	0.060 %

Release fraction to soil from process	0 %
Fraction tonnage to region	10 %
Fraction used at main source	100 % *(justification: Largest customer)*
STP	yes
River flow rate	18000 m^3/day
Municipal sewage treatment plant discharge	2000000 L/day
Risk management measures	
Reduction of sludge to soil	100 % *(justification: Activated sludge from industrial sources is collected and incinerated. Hence, sludge to soil as an environmental emission scenario is of no relevance.)*
SpERC	141-43-5: Formulation of mixtures - RMM (22.07.2015) - consortium (This SpERC describes the formulation of mixtures in an industrial setting. Based on a representative content of 10% MEA in the formulation, a tonnage of more than 150000 t/a is used for the derivation of the release days per year. - Release days: 350 d (continuous process) - Release to air: 0%. Release to air is not relevant as MEA is removed from exhaust air by either incineration or gas-scrubbing. - Release to wastewater: 0.06%. Regarding the ready biodegradability of MEA and the high measured removal efficiency of industrial STPs, a release of 0.06% is assumed as a conservative approach. - Release to soil: 0% - Sludge to soil: no. Direct emission to soil is not relevant as the substance is assumed to be handled in a closed process (e.g. closed tray). Indirect release of MEA into the environment via the application of activated sludge to soil is not likely as STP sludge from industrial sources is generally assumed to be incinerated. - Fraction of tonnage to region: 10% (Based on the large tonnage of the formulated product (> 150000 t/a) a wide distribution over all Europe is assumed.) - Fraction main source: 100% (default))
Incineration	yes
Off-gases are either incinerated or scrubbed. Sewage sludge is incinerated.	yes
Risk management measures (air)	Waste gas treatment by thermal oxidation, Exhaust air scrubber
Risk management measures (water)	Aerobic biological treatment
Risk management measures (soil)	Sealing of all relevant soil surfaces, Sewage Sludge incineration, No application of sludge to soil
Other modified EUSES values	

Fraction of emission directed to water by local STP (Fstp.water)	0.040 - *(justification: Based on measured data of MEA concentrations in sewage and effluent from local STP at BASF Ludwigshafen/Germany, the elimination was determined to be >99% (99.1% to 99.6%). The MEA concentration in all effluent samples was below the detection limit of 20 µg/L. Therefore, the average elimination might be even higher. The fraction of emission directed to water by local STP was set at 0.04 as a worst-case scenario based on previous measurements for the local STP at BASF with a higher detection limit (200 µg/L; elimination: 96.4% to 98.9%).)*

1.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 1

Name of contributing scenario	1 - Use in closed process, no likelihood of exposure
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures In case of potential exposure: Wear chemically resistant gloves in combination with specific activity training
Eyes	In case of potential exposure: Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	240 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	no
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	Gloves APF 20 95 %
Respiratory protection	no

1.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 2

Name of contributing scenario	2 - Use in closed, continuous process with occasional controlled exposure
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures In case of potential exposure: Wear chemically resistant gloves in combination with specific activity training
Eyes	In case of potential exposure: Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	480 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	no
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	Gloves APF 20 95 %
Respiratory protection	no

1.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 3

Name of contributing scenario	3 - Use in closed batch process (synthesis or formulation)
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures In case of potential exposure: Wear chemically resistant gloves in combination with specific activity training
Eyes	In case of potential exposure: Use suitable eye protection.

Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	240 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes (inhalation 90 %)
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	Gloves APF 20 95 %
Respiratory protection	no

1.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 4

Name of contributing scenario	4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide specific employee training to prevent/minimize exposures. Wear chemically resistant gloves in combination with specific activity training Wear suitable coveralls to prevent exposure to the skin. Supervision in place to check that the RMMs in place are being used correctly and OCs followed.
Eyes	Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	low
Frequency and duration of use	

Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	480 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes (inhalation 90 %)
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	Gloves APF 20 95 %
Respiratory protection	no

1.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 5

Name of contributing scenario	5 - Mixing or blending in batch processes (multistage and/or significant contact)
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide specific employee training to prevent/minimize exposures. Wear chemically resistant gloves in combination with specific activity training Wear suitable coveralls to prevent exposure to the skin. Supervision in place to check that the RMMs in place are being used correctly and OCs followed.
Eyes	Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	480 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors

Ventilation	enhanced (70%)
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes (inhalation 90 %)
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	Gloves APF 20 95 %
Respiratory protection	no

1.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 8A

Name of contributing scenario	8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide specific employee training to prevent/minimize exposures. Wear chemically resistant gloves in combination with specific activity training Wear suitable coveralls to prevent exposure to the skin. Supervision in place to check that the RMMs in place are being used correctly and OCs followed.
Eyes	Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	1 - 4 hours
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	960 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	enhanced (70%)
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes (inhalation 90 %)
Conditions and measures related to personal protection, hygiene and health evaluation	

Protective gloves	Gloves APF 20 95 %
Respiratory protection	no

1.8 Contributing Scenario (8) controlling industrial worker exposure for PROC 8B

Name of contributing scenario	8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures In case of potential exposure: Wear chemically resistant gloves in combination with specific activity training
Eyes	In case of potential exposure: Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	960 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	enhanced (70%)
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes (inhalation 95 %)
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	Gloves APF 20 95 %
Respiratory protection	no

1.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 9

Name of contributing scenario	9 - Transfer of chemicals into small containers (dedicated filling line)
Qualitative Risk Assessment	

General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures In case of potential exposure: Wear chemically resistant gloves in combination with specific activity training
Eyes	In case of potential exposure: Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	480 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes (inhalation 90 %)
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	Gloves APF 20 95 %
Respiratory protection	no

Scenario 2: Professional formulation of mixtures (ES 2)

This scenario is described by the following combinations of use descriptors. The corresponding contributing scenarios are described in the respective subchapters.

An overall exposure scenario may be described by a number of contributing scenarios which may be subdivided into environmental exposure, worker exposure and consumer exposure. The following scenarios contribute to the scenario *Professional formulation of mixtures*.

Table 2. Description of ES 2

Free short title	Professional formulation of mixtures (ES 2)

Systematic title based on use descriptor	ERC 8A; PROC 3, 4, 5, 8A, 8B, 9
Name of contributing environmental scenario and corresponding ERC	ERC 8a Wide dispersive indoor use of processing aids in open systems
Name(s) of contributing worker scenarios and corresponding PROCs	PROC 3 - Use in closed batch process (synthesis or formulation) PROC 4 - Use in batch and other process (synthesis) where opportunity for exposure arises PROC 5 - Mixing or blending in batch processes (multistage and/or significant contact) PROC 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 9 - Transfer of chemicals into small containers (dedicated filling line)

2.1 Contributing Scenario (1) controlling environmental exposure for ERC 8A

This scenario has not been calculated. Justification:	Formulation of mixtures by professionals is considered to be covered by other professional settings.

2.2 Contributing Scenario (2) controlling professional worker exposure for PROC 3

Name of contributing scenario	3 - Use in closed batch process (synthesis or formulation)
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures In case of potential exposure: Wear chemically resistant gloves in combination with specific activity training
Eyes	In case of potential exposure: Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	

Exposed skin surface	240 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	professional
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes (inhalation 80 %)
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	95 %, burst-time: >4 hours (default) *(justification: Wear chemically resistant gloves in combination with specific activity training)*
Respiratory protection	no

2.3 Contributing Scenario (3) controlling professional worker exposure for PROC 4

Name of contributing scenario	4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide specific employee training to prevent/minimize exposures. Wear chemically resistant gloves in combination with specific activity training Wear suitable coveralls to prevent exposure to the skin. Supervision in place to check that the RMMs in place are being used correctly and OCs followed.
Eyes	Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	480 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	professional
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes (inhalation 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	95 %, burst-time: >4 hours (default) *(justification: Wear chemically resistant gloves in combination with specific activity training)*
Respiratory protection	90 %

2.4 Contributing Scenario (4) controlling professional worker exposure for PROC 5

Name of contributing scenario	5 - Mixing or blending in batch processes (multistage and/or significant contact)
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide specific employee training to prevent/minimize exposures. Wear chemically resistant gloves in combination with specific activity training Wear suitable coveralls to prevent exposure to the skin.
	Supervision in place to check that the RMMs in place are being used correctly and OCs followed.
Eyes	Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	1 - 4 hours
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	480 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	professional
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes (inhalation 80 %)
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	95 %, burst-time: >4 hours (default) *(justification: Wear chemically resistant gloves in combination with specific activity training)*
Respiratory protection	90 %

2.5 Contributing Scenario (5) controlling professional worker exposure for PROC 8A

Name of contributing scenario	8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide specific employee training to prevent/minimize exposures. Wear chemically resistant gloves in combination with specific activity training Wear suitable coveralls to prevent exposure to the skin. Supervision in place to check that the RMMs in place are being used correctly and OCs followed.
Eyes	Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	1 - 4 hours
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	960 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	good (30%)
Domain	professional
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes (inhalation 80 %)
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	95 %, burst-time: >4 hours (default) *(justification: Wear chemically resistant gloves in combination with specific activity training)*
Respiratory protection	90 %

2.6 Contributing Scenario (6) controlling professional worker exposure for PROC 8B

Name of contributing scenario	8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Qualitative Risk Assessment	

General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures In case of potential exposure: Wear chemically resistant gloves in combination with specific activity training
Eyes	In case of potential exposure: Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	15 mins to 1 hour
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	960 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	professional
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes (inhalation 90 %)
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	95 %, burst-time: >4 hours (default) *(justification: Wear chemically resistant gloves in combination with specific activity training)*
Respiratory protection	no

2.7 Contributing Scenario (7) controlling professional worker exposure for PROC 9

Name of contributing scenario	9 - Transfer of chemicals into small containers (dedicated filling line)
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures In case of potential exposure: Wear chemically resistant gloves in combination with specific activity training
Eyes	In case of potential exposure: Use suitable eye protection.
Product characteristics	
Physical state	liquid

Concentration in substance	100 %
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	15 mins to 1 hour
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	480 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	professional
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes (inhalation 80 %)
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	95 %, burst-time: >4 hours (default) *(justification: Wear chemically resistant gloves in combination with specific activity training)*
Respiratory protection	no

Scenario 3: Use as an intermediate (ES 3)

This scenario is described by the following combinations of use descriptors. The corresponding contributing scenarios are described in the respective subchapters.

An overall exposure scenario may be described by a number of contributing scenarios which may be subdivided into environmental exposure, worker exposure and consumer exposure.
The following scenarios contribute to the scenario *Use as an intermediate*.

Table 3. Description of ES 3

Free short title	Use as an intermediate (ES 3)
Systematic title based on use descriptor	ERC 6A; PROC 1, 2, 3, 8A, 8B, 9
Name of contributing environmental scenario and corresponding ERC	ERC 6a Industrial use of intermediates

Name(s) of contributing worker scenarios and corresponding PROCs	PROC 1 - Use in closed process, no likelihood of exposure PROC 2 - Use in closed, continuous process with occasional controlled exposure PROC 3 - Use in closed batch process (synthesis or formulation) PROC 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 9 - Transfer of chemicals into small containers (dedicated filling line)

3.1 Contributing Scenario (1) controlling environmental exposure for ERC

6A Operational conditions	
Annual site tonnage	1 to/year
Daily amount used at site	5 kg/day
Release times per year	200 days/year
Local freshwater dilution factor	10
Local marine water dilution factor	100
Release fraction to air from process	0 %
Release fraction to wastewater from process	0.005 %
Release fraction to soil from process	0.010 %
Fraction tonnage to region	100 %
Fraction used at main source	100 % *(justification: Largest customer)*
STP	yes
River flow rate	18000 m^3/day
Municipal sewage treatment plant discharge	2000000 L/day
Risk management measures	
Reduction of sludge to soil	100 % *(justification: Activated sludge from industrial sites is collected and incinerated. Hence, sludge to soil as an environmental emission scenario is of no relevance.)*

SpERC	141-43-5: MEA as intermediate (industrial): A3.3 & B3.2 (MC = Ib) - RMM (22.07.2015) - consortium (MEA is used as an intermediate in the manufacture of other substances under not strictly closed and rigorously controlled conditions (ERC 6a). The use of MEA as intermediate is characterized using selected A and B tables from the EU TGD (2003). Industrial use of chemicals used in synthesis is best described by Table A 3.3 under Industrial Category (IC) 3. The substance is handled with dedicated equipment causing (very) little cleaning operations (MC = 1b).
	Table A3.3: - Release to air: 0%. The substance is handled under controlled conditions. Its vapour pressure is low 10 to 100 Pa. Exhaust air is either incinerated or scrubbed to remove MEA. - Release to wastewater (>= 1000 t/a, wet process): 0.005%. No direct release to water is anticipated. Releases are expected from cleaning processes of the equipment. Wastewater is treated in wwtps. - Release to soil: 0.01%. Direct exposure to soil is low. Indirect exposure via application of sewage sludge to soil is prevented as activated sludge from industrial sources is generally assumed to be incinerated. The number of release days and the fraction used at the main local source are derived using the respective B Table of the EU TGD (2003). For this scenario Table B3.2 was selected. - Fraction of main local source: XXX (based on tonnage of largest customer; table B3.2 (XXX to XXX t/a): XXX) - Release days: XXX = 200 d)
Incineration	yes
Off-gases are either incinerated or scrubbed. Sewage sludge is incinerated.	yes
Risk management measures (air)	Exhaust air scrubber, Waste gas treatment by thermal oxidation
Risk management measures (water)	Aerobic biological treatment
Risk management measures (soil)	Sewage Sludge incineration, No application of sludge to soil, Sealing of all relevant soil surfaces
Other modified EUSES values	
Fraction of emission directed to water by local STP (Fstp.water)	0.040 - *(justification: Based on measured data of MEA concentrations in sewage and effluent from local STP at BASF Ludwigshafen/Germany, the elimination was determined to be >99% (99.1% to 99.6%). The MEA concentration in all effluent samples was below the detection limit of 20 µg/L. Therefore, the average elimination might be even higher. The fraction of emission directed to water by local STP was set at 0.04 as a worst-case scenario based on previous measurements for the local STP at BASF with a higher detection limit (200 µg/L; elimination: 96.4% to 98.9%).)*

3.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 1

Name of contributing scenario	1 - Use in closed process, no likelihood of exposure

Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures In case of potential exposure: Wear chemically resistant gloves in combination with specific activity training
Eyes	In case of potential exposure: Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	240 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	no
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	Gloves APF 20 95 %
Respiratory protection	no

3.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 2

Name of contributing scenario	2 - Use in closed, continuous process with occasional controlled exposure
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures In case of potential exposure: Wear chemically resistant gloves in combination with specific activity training
Eyes	In case of potential exposure: Use suitable eye protection.
Product characteristics	

Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	480 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	no
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	Gloves APF 20 95 %
Respiratory protection	no

3.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 3

Name of contributing scenario	3 - Use in closed batch process (synthesis or formulation)
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures In case of potential exposure: Wear chemically resistant gloves in combination with specific activity training
Eyes	In case of potential exposure: Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	240 cm^2

Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes (inhalation 90 %)
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	Gloves APF 20 95 %
Respiratory protection	no

3.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 8A

Name of contributing scenario	8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide specific employee training to prevent/minimize exposures. Wear chemically resistant gloves in combination with specific activity training Wear suitable coveralls to prevent exposure to the skin. Supervision in place to check that the RMMs in place are being used correctly and OCs followed.
Eyes	Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	1 - 4 hours
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	960 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	enhanced (70%)
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes (inhalation 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	Gloves APF 20 95 %
Respiratory protection	no

3.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 8B

Name of contributing scenario	8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures In case of potential exposure: Wear chemically resistant gloves in combination with specific activity training
Eyes	In case of potential exposure: Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	960 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	enhanced (70%)
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes (inhalation 95 %)
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	Gloves APF 20 95 %
Respiratory protection	no

3.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 9

Name of contributing scenario	9 - Transfer of chemicals into small containers (dedicated filling line)
Qualitative Risk Assessment	

General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures In case of potential exposure: Wear chemically resistant gloves in combination with specific activity training
Eyes	In case of potential exposure: Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	480 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes (inhalation 90 %)
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	Gloves APF 20 95 %
Respiratory protection	no

Scenario 4: Industrial use in detergents and cleaners (ES 4)

This scenario is described by the following combinations of use descriptors. The corresponding contributing scenarios are described in the respective subchapters.

An overall exposure scenario may be described by a number of contributing scenarios which may be subdivided into environmental exposure, worker exposure and consumer exposure.

The following scenarios contribute to the scenario *Industrial use in detergents and cleaners*.

Table 4. Description of ES 4

Free short title	Industrial use in detergents and cleaners (ES 4)
Systematic title based on use descriptor	ERC 4; PROC 3, 4, 8A, 8B
Name of contributing environmental scenario and corresponding ERC	ERC 4 Industrial use of processing aids
Name(s) of contributing worker scenarios and corresponding PROCs	PROC 3 - Use in closed batch process (synthesis or formulation) PROC 4 - Use in batch and other process (synthesis) where opportunity for exposure arises PROC 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities

4.1 Contributing Scenario (1) controlling environmental exposure for ERC 4

Operational conditions	
Annual site tonnage	1 to/year
Daily amount used at site	4.545 kg/day
Release times per year	220 days/year
Local freshwater dilution factor	10
Local marine water dilution factor	100
Release fraction to air from process	0 %
Release fraction to wastewater from process	100 %
Release fraction to soil from process	0 %
Fraction tonnage to region	100 %
Fraction used at main source	100 %
STP	yes
River flow rate	18000 m^3/day
Municipal sewage treatment plant discharge	2000000 L/day
Risk management measures	
Reduction of sludge to soil	100 % *(justification: Activated sludge from industrial sources is generally assumed to be incinerated.)*

SpERC	141-43-5: AISE 4.1.v2 - RMM (22.07.2015) - consortium (MEA is used in industrial detergents and cleaners. AISE SpERC 4.1.v2 was selected to describe the following exposure scenario: Industrial uses in water borne processing aid. This definition covers substances in a broad range of specific applications, e.g. surface cleaning, surface treatment, metal treatment, surface finishing, corrosion inhibition, vehicle cleaning, industrial laundry etc. - Release days: 220 d; Equivalent to number of working days, based on sector knowledge - Fraction of tonnage to region: 1
	- Fraction used at main source: 1 - Release to air: 0%; Processing aids in aqueous solutions are not volatile and are intended to remain in the application solution. Spray applications are housed-in. - Release to water: 100%; Water-borne processing aids are disposed off quantitatively to the process wastewater. Prior to discharging, the spent process water may be treated on-site. - Release to soil: 0%; Water-borne processing aids are disposed off quantitatively to the process wastewater. Releases to soil do not occur during normal operation. Indirect release to soil via application of sewage **sludge to soil is not relevant as sewage sludge from industrial STP's is** generally considered to be incinerated.)
Incineration	yes
Sewage sludge is incinerated.	yes
Risk management measures (air)	Waste gas treatment by thermal oxidation, Exhaust air scrubber
Risk management measures (water)	Aerobic biological treatment
Risk management measures (soil)	Sewage Sludge incineration, No application of sludge to soil, Sealing of all relevant soil surfaces
Other modified EUSES values	
Fraction of emission directed to water by local STP (Fstp.water)	0.040 - *(justification: Based on measured data of MEA concentrations in sewage and effluent from local STP at BASF Ludwigshafen/Germany, the elimination was determined to be >99% (99.1% to 99.6%). The MEA concentration in all effluent samples was below the detection limit of 20 µg/L. Therefore, the average elimination might be even higher. The fraction of emission directed to water by local STP was set at 0.04 as a worst-case scenario based on previous measurements for the local STP at BASF with a higher detection limit (200 µg/L; elimination: 96.4% to 98.9%).)*

4.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 3

Name of contributing scenario	3 - Use in closed batch process (synthesis or formulation)
Qualitative Risk Assessment	

General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures In case of potential exposure: Wear chemically resistant gloves in combination with specific activity training
Eyes	In case of potential exposure: Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	10 %, concentration has been considered linearly *(justification: Limit the substance content in the product to 10%)*
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	240 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	no
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	Gloves APF 20 95 %
Respiratory protection	no

4.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 4

Name of contributing scenario	4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide specific employee training to prevent/minimize exposures. Wear chemically resistant gloves in combination with specific activity training Wear suitable coveralls to prevent exposure to the skin. Supervision in place to check that the RMMs in place are being used correctly and OCs followed.
Eyes	Use suitable eye protection.

Product characteristics	
Physical state	liquid
Concentration in substance	10 %, concentration has been considered linearly *(justification: Limit the substance content in the product to 10%)*
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	480 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	no
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	Gloves APF 20 95 %
Respiratory protection	no

4.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 8A

Name of contributing scenario	8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide specific employee training to prevent/minimize exposures. Wear chemically resistant gloves in combination with specific activity training Wear suitable coveralls to prevent exposure to the skin. Supervision in place to check that the RMMs in place are being used correctly and OCs followed.
Eyes	Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	10 %, concentration has been considered linearly *(justification: Limit the substance content in the product to 10%)*
Fugacity / Dustiness	low
Frequency and duration of use	

Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	960 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	no
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	Gloves APF 20 95 %
Respiratory protection	no

4.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 8B

Name of contributing scenario	8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures In case of potential exposure: Wear chemically resistant gloves in combination with specific activity training
Eyes	In case of potential exposure: Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	10 %, concentration has been considered linearly *(justification: Limit the substance content in the product to 10%)*
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	960 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors

Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	no
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	Gloves APF 20 95 %
Respiratory protection	no

Scenario 5: Professional use in detergents and cleaners (ES 5)

This scenario is described by the following combinations of use descriptors. The corresponding contributing scenarios are described in the respective subchapters.

An overall exposure scenario may be described by a number of contributing scenarios which may be subdivided into environmental exposure, worker exposure and consumer exposure.
The following scenarios contribute to the scenario *Professional use in detergents and cleaners*.

Table 5. Description of ES 5

Free short title	Professional use in detergents and cleaners (ES 5)
Systematic title based on use descriptor	ERC 8D; PROC 3, 8A, 10, 11, 13, 19
Name of contributing environmental scenario and corresponding ERC	ERC 8d Wide dispersive outdoor use of processing aids in open systems
Name(s) of contributing worker scenarios and corresponding PROCs	PROC 3 - Use in closed batch process (synthesis or formulation) PROC 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities PROC 10 - Roller application or brushing PROC 11 - Non industrial spraying PROC 11 - Non industrial spraying PROC 13 - Treatment of articles by dipping and pouring PROC 19 - Hand-mixing with intimate contact (only PPE available

5.1 Contributing Scenario (1) controlling environmental exposure for ERC 8D

Operational conditions	
Annual tonnage	1 to/year
Daily amount used at site	0.055 kg/day
Release times per year	365 days/year
Local freshwater dilution factor	10
Local marine water dilution factor	100
Release fraction to air from process	0 %
Release fraction to wastewater from process	100 %
Release fraction to soil from process	0 %
Fraction tonnage to region	10 %
Fraction used at main source	0.075 %
STP	yes
River flow rate	18000 m^3/day
Municipal sewage treatment plant discharge	2000000 L/day
Risk management measures	
SpERC	141-43-5: AISE SpERC 8a.1a.v2 (down the drain; professional) - RMM (22.07.2015) - consortium (MEA is used by professionals in detergents and cleaners. AISE has developed a SpERC covering the use of substances in solvents in cleaning and maintenance products for consumers and professional users: AISE SpERC 8a.1a.v2. The default value of the amount used locally has been divided by a factor of 6.7. This is justified by refined information on the consumption pattern of detergents and maintenance products. According to this information, the Fraction of EU tonnage used in region (FRegion) is 0.04 (default: 0.1) and the Fraction of Regional tonnage used locally (FMainLocalSource) is 0.00075 (default is 0.002). Release factors: - water: 100%; Laundry detergents, and cleaners are applied as additives to water. After cleaning of substrate the washing / cleaning solutions is disposed of with the waste water such that 100% of the product ingredients enter the waste water system. Product residues remaining on the substrate are likely to be washed off in the next cleaning event.
	- air: 0%; MEA has a low vapour pressure (50 Pa), in addition MEA is applied as additive to water and is disposed of with the waste water. - soil: 0%; no direct release to soil.)
Risk management measures (water)	Aerobic biological treatment

5.2 Contributing Scenario (2) controlling professional worker exposure for PROC 3

Name of contributing scenario	3 - Use in closed batch process (synthesis or formulation)
Qualitative Risk Assessment	

General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures In case of potential exposure: Wear chemically resistant gloves in combination with specific activity training
Eyes	In case of potential exposure: Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	10 %, concentration has been considered linearly *(justification: Limit the substance content in the product to 10%)*
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	240 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	professional
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	no
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	95 %, burst-time: >4 hours (default) *(justification: Wear chemically resistant gloves in combination with specific activity training)*
Respiratory protection	no

5.3 Contributing Scenario (3) controlling professional worker exposure for PROC 8A

Name of contributing scenario	8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide specific employee training to prevent/minimize exposures. Wear chemically resistant gloves in combination with specific activity training Wear suitable coveralls to prevent exposure to the skin.
	Supervision in place to check that the RMMs in place are being used correctly and OCs followed.

Eyes	Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	10 %, concentration has been considered linearly *(justification: Limit the substance content in the product to 10%)*
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	15 mins to 1 hour
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	960 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	professional
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	no
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	95 %, burst-time: >4 hours (default) *(justification: Wear chemically resistant gloves in combination with specific activity training)*
Respiratory protection	no

5.4 Contributing Scenario (4) controlling professional worker exposure for PROC 10

Name of contributing scenario	10 - Roller application or brushing
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide specific employee training to prevent/minimize exposures. Wear chemically resistant gloves in combination with specific activity training Wear suitable coveralls to prevent exposure to the skin. Supervision in place to check that the RMMs in place are being used correctly and OCs followed.
Eyes	Wear suitable face shield
Product characteristics	
Physical state	liquid
Concentration in substance	10 %, concentration has been considered linearly *(justification: Limit the substance content in the product to 10%)*
Fugacity / Dustiness	low

Frequency and duration of use	
Duration of activity	15 mins to 1 hour
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	960 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	professional
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	no
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	95 %, burst-time: >4 hours (default) *(justification: Wear chemically resistant gloves in combination with specific activity training)*
Respiratory protection	no

5.5 Contributing Scenario (5) controlling professional worker exposure for PROC 11

Name of contributing scenario	11 - Non industrial spraying
Scenario subtitle	Option A - small scale
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide specific employee training to prevent/minimize exposures. Wear chemically resistant gloves in combination with specific activity training Wear suitable coveralls to prevent exposure to the skin. Supervision in place to check that the RMMs in place are being used correctly and OCs followed.
Eyes	Wear suitable face shield
Product characteristics	
Physical state	liquid
Concentration in substance	10 %, concentration has been considered linearly *(justification: Limit the substance content in the product to 10%)*
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	60 min/day, duration of activity has been considered linearly *(justification: Reduce duration of activity to less than 60 min)*
Frequency of use	5 days / week
Human factors not influenced by risk management	

Exposed skin surface	1,500 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	professional
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	no
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	95 %, burst-time: >4 hours (default) *(justification: Wear chemically resistant gloves in combination with specific activity training)*
Respiratory protection	no
Use of external/measured value inhalation	Exposure assessment using ART Version 1.5: Mechanistic model results The predicted 75th percentile full-shift exposure is 0.89 mg/m³. The inter-quartile confidence interval is 0.45 mg/m³ to 1.8 mg/m³. PROC 11 Emission sources: Near-field exposure (small scale spraying) Vapour pressure: 50 Pa Liquid mole fraction: 0.1 (10% substance) Process temperature: Room temperature Duration (mins): 60 min Non-exposure period: 420 min Substance product type: Liquids Activity class: Surface spraying of liquids Spray technique: Spraying with no or low compressed air use Spray direction: Only horizontal or downward Situation: Very low application rate (< 0.03 l/minute) Localised controls: None General housekeeping practices in place? Yes Process fully enclosed? No Work area: Indoors Room size: 100 m3 Ventilation: 1 ACH

5.6 Contributing Scenario (6) controlling professional worker exposure for PROC 11

Name of contributing scenario	11 - Non industrial spraying
Scenario subtitle	Option B - small scale
Qualitative Risk Assessment	

General	Ensure good work practices are implemented Provide specific employee training to prevent/minimize exposures. Wear chemically resistant gloves in combination with specific activity training Wear suitable coveralls to prevent exposure to the skin. Supervision in place to check that the RMMs in place are being used correctly and OCs followed.
Eyes	Wear suitable face shield
Product characteristics	
Physical state	liquid
Concentration in substance	10 %, concentration has been considered linearly *(justification: Limit the substance content in the product to 10%)*
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	360 min/day, duration of activity has been considered linearly *(justification: Reduce duration of activity to less than 360 min)*
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	1,500 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	professional
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	no
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	95 %, burst-time: >4 hours (default) *(justification: Wear chemically resistant gloves in combination with specific activity training)*
Respiratory protection	90 %

Use of external/measured value inhalation	Exposure assessment using ART Version 1.5: Mechanistic model results The predicted 75th percentile full-shift exposure is 5.4 mg/m³. The inter-quartile confidence interval is 2.7 mg/m³ to 11 mg/m³. Use of respiratory protection with effectiveness of 90%. PROC 11 Emission sources: Near-field exposure (small scale spraying) Vapour pressure: 50 Pa Liquid mole fraction: 0.1 (10% substance) Process temperature: Room temperature Duration (mins): 360 min Non-exposure period: 120 min Substance product type: Liquids Activity class: Surface spraying of liquids Spray technique: Spraying with no or low compressed air use Spray direction: Only horizontal or downward Situation: Very low application rate (< 0.03 l/minute) Localised controls: None General housekeeping practices in place? Yes Process fully enclosed? No Work area: Indoors Room size: 100 m3 Ventilation: 1 ACH Use of respiratory protection with effectiveness of 90%.

5.7 Contributing Scenario (7) controlling professional worker exposure for PROC 13

Name of contributing scenario	13 - Treatment of articles by dipping and pouring
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide specific employee training to prevent/minimize exposures. Wear chemically resistant gloves in combination with specific activity training Wear suitable coveralls to prevent exposure to the skin. Supervision in place to check that the RMMs in place are being used correctly and OCs followed.
Eyes	Wear suitable face shield
Product characteristics	
Physical state	liquid
Concentration in substance	10 %, concentration has been considered linearly *(justification: Limit the substance content in the product to 10%)*
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week

Human factors not influenced by risk management	
Exposed skin surface	480 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	professional
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	no
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	95 %, burst-time: >4 hours (default) *(justification: Wear chemically resistant gloves in combination with specific activity training)*
Respiratory protection	no

5.8 Contributing Scenario (8) controlling professional worker exposure for PROC 19

Name of contributing scenario	19 - Hand-mixing with intimate contact (only PPE available
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide specific employee training to prevent/minimize exposures. Wear chemically resistant gloves in combination with specific activity training Wear suitable coveralls to prevent exposure to the skin. Supervision in place to check that the RMMs in place are being used correctly and OCs followed.
Eyes	Wear suitable face shield
Product characteristics	
Physical state	liquid
Concentration in substance	10 %, concentration has been considered linearly *(justification: Limit the substance content in the product to 10%)*
Fugacity / Dustiness	low
Frequency and duration of use	
Duration of activity	1 - 4 hours
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	1,980 cm^2
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	professional
Technical conditions and measures to control dispersion and exposure	

Local exhaust ventilation	no
Conditions and measures related to personal protection, hygiene and health evaluation	
Protective gloves	95 %, burst-time: >4 hours (default) *(justification: Wear chemically resistant gloves in combination with specific activity training)*
Respiratory protection	90

Scenario 6: Consumer use in detergents and cleaners (ES 6)

This scenario is described by the following combinations of use descriptors. The corresponding contributing scenarios are described in the respective subchapters.

An overall exposure scenario may be described by a number of contributing scenarios which may be subdivided into environmental exposure, worker exposure and consumer exposure.
The following scenarios contribute to the scenario *Consumer use in detergents and cleaners*.

Table 6. Description of ES 6

Free short title	Consumer use in detergents and cleaners (ES 6)
Systematic title based on use descriptor	ERC 8D; PC 35
Name of contributing environmental scenario and corresponding ERC	ERC 8d Wide dispersive outdoor use of processing aids in open systems
Name(s) of contributing consumer scenarios and corresponding PCs/ACs	PC 35 Washing and Cleaning Products (including solvent based products) PC 35 Washing and Cleaning Products (including solvent based products) PC 35 Washing and Cleaning Products (including solvent based products) PC 35 Washing and Cleaning Products (including solvent based products)

6.1 Contributing Scenario (1) controlling environmental exposure for ERC 8D

Operational conditions	
Annual tonnage	1 to/year
Daily amount used at site	0.027 kg/day
Release times per year	365 days/year
Local freshwater dilution factor	10
Local marine water dilution factor	100
Release fraction to air from process	0 %

Release fraction to wastewater from process	100 %
Release fraction to soil from process	0 %
Fraction tonnage to region	10 %
Fraction used at main source	0.075 %
STP	yes
River flow rate	18000 m^3/day
Municipal sewage treatment plant discharge	2000000 L/day
Risk management measures	
SpERC	141-43-5: AISE SpERC 8a.1a.v2 (down the drain; consumer)- RMM (22.07.2015) - consortium (MEA is used by professionals in detergents and cleaners. AISE has developed a SpERC covering the use of substances in solvents in cleaning and maintenance products for consumers and professional users: AISE SpERC 8a.1a.v2. The default value of the amount used locally has been divided by a factor of 6.7. This is justified by refined information on the consumption pattern of detergents and maintenance products. According to this information, the Fraction of EU tonnage used in region (FRegion) is 0.04 (default: 0.1) and the Fraction of Regional tonnage used locally (FMainLocalSource) is 0.00075 (default is 0.002). Release factors: - water: 100%; Laundry detergents, and cleaners are applied as additives to water. After cleaning of substrate the washing / cleaning solutions is disposed of with the waste water such that 100% of the product ingredients enter the waste water system. Product residues remaining on the substrate are likely to be washed off in the next cleaning event. - air: 0%; MEA has a low vapour pressure (50 Pa), in addition MEA is applied as additive to water and is disposed of with the waste water. - soil: 0%; no direct release to soil.)
Risk management measures (water)	Aerobic biological treatment

6.2 Contributing Scenario (2) controlling consumer exposure for PC 35

Name of contributing scenario	PC 35 Washing and Cleaning Products (including solvent based products)
Scenario subtitle	Consumer use of liquid laundry detergent- loading
Calculation model	ConsExpo
Frequency and duration of use	
Inhalation	
Exposure calculation result type	Mean concentration on day of exposure
Frequency of use	1 per day
Exposure time	0.750 min

Application duration	0.300 min
Dermal	
Exposure calculation result type	Internal dose chronic
Frequency of use	1 per day
Oral	
Exposure calculation result type	Internal dose chronic
Frequency of use	1 per day
Product characteristics	
Spray application	no
Product ingredient fraction by weight	5 %
Mol weight matrix	90 g/mol
Mass transfer rate	0.333 m/min
Amounts used	
Inhalation	500 g
Dermal	0.010 g
Oral	0.010 g
Human factors not influenced by risk management	
Exposed skin surface (dermal)	215 cm^2
Other given operational conditions affecting consumers exposure	
Inhalation	
Room volume	1 m^3
Ventilation rate	2 1/h
Release are is constant	
Release area	20 cm^2
Release temperature	20 °C
Dermal	
Uptake fraction	100 %
Oral	
Uptake fraction	100 %

6.3 Contributing Scenario (3) controlling consumer exposure for PC 35

Name of contributing scenario	PC 35 Washing and Cleaning Products (including solvent based products)
Scenario subtitle	Consumer use of liquid laundry detergent- application
Calculation model	ConsExpo
Frequency and duration of use	

Inhalation	
Exposure calculation result type	Mean concentration on day of exposure
Frequency of use	1 per day
Exposure time	10 min
Application duration	10 min
Dermal	
Exposure calculation result type	Internal dose chronic
Frequency of use	1 per day
Oral	
Exposure calculation result type	Internal dose chronic
Frequency of use	1 per day
Product characteristics	
Spray application	no
Product ingredient fraction by weight	0.050 %
Mol weight matrix	18 g/mol
Mass transfer rate	0.333 m/min
Amounts used	
Inhalation	19 g
Dermal	19 g
Oral	0.500 g
Human factors not influenced by risk management	
Exposed skin surface (dermal)	1,900 cm^2
Other given operational conditions affecting consumers exposure	
Inhalation	
Room volume	10 m^3
Ventilation rate	2 1/h
Release are is constant	
Release area	0.150 cm^2
Release temperature	20 °C
Dermal	
Uptake fraction	100 %
Oral	
Uptake fraction	100 %

Name of contributing scenario	PC 35 Washing and Cleaning Products (including solvent based products)
Scenario subtitle	Consumer use of all purpose cleaner- mixing and loading
Calculation model	ConsExpo
Frequency and duration of use	
Inhalation	
Exposure calculation result type	Mean concentration on day of exposure
Frequency of use	1 per day
Exposure time	0.750 min
Application duration	0.300 min
Dermal	
Exposure calculation result type	Internal dose chronic
Frequency of use	1 per day
Oral	
Exposure calculation result type	Internal dose chronic
Frequency of use	1 per day
Product characteristics	
Spray application	no
Product ingredient fraction by weight	5 %
Mol weight matrix	22 g/mol
Mass transfer rate	0.333 m/min
Amounts used	
Inhalation	500 g
Dermal	0.010 g
Oral	0.010 g
Human factors not influenced by risk management	
Exposed skin surface (dermal)	215 cm^2
Other given operational conditions affecting consumers exposure	
Inhalation	
Room volume	1 m^3
Ventilation rate	0.500 1/h
Release are is constant	
Release area	20 cm^2
Release temperature	20 °C

Dermal	
Uptake fraction	100 %
Oral	
Uptake fraction	100 %

6.5 Contributing Scenario (5) controlling consumer exposure for PC 35

Name of contributing scenario	PC 35 Washing and Cleaning Products (including solvent based products)
Scenario subtitle	Consumer use of all purpose cleaner- application
Calculation model	ConsExpo
Frequency and duration of use	
Inhalation	
Exposure calculation result type	Mean concentration on day of exposure
Frequency of use	1 per day
Exposure time	240 min
Application duration	20 min
Dermal	
Exposure calculation result type	Internal dose chronic
Frequency of use	1 per day
Oral	
Exposure calculation result type	Internal dose chronic
Frequency of use	1 per day
Product characteristics	
Spray application	no
Product ingredient fraction by weight	0.063 %
Mol weight matrix	18 g/mol
Mass transfer rate	0.333 m/min
Amounts used	
Inhalation	400 g
Dermal	19 g
Oral	0.010 g
Human factors not influenced by risk management	
Exposed skin surface (dermal)	1,900 cm^2
Other given operational conditions affecting consumers exposure	
Inhalation	
Room volume	58 m^3

Ventilation rate	0.500 1/h
Release area increases over time	
Release area	1.00E5 cm^2
Release temperature	20 °C
Dermal	
Uptake fraction	100 %
Oral	
Uptake fraction	100 %