Overview of exposure scenarios (ES)

ES number	ES Code	Scenario name
2.1	ATIEL-ATC Group E [i]	(Industrial) Handling and dilution of metalworking fluid concentrates
2.2	ATIEL-ATC Group B [i]	General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines)
2.3	ATIEL-ATC Group B [i]	General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines)
2.4	ATIEL-ATC Group D [i]	(Industrial) Use of lubricants in open high temperature processes, e.g. quenching fluids, glass release agents
2.5	ATIEL-ATC Group F [i]	(Industrial) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding
2.6	ATIEL-ATC Group C [i]	(Industrial) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways
2.7	ATIEL-ATC Group C [p]	(Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways
2.8	ATIEL-ATC Group C [p]	(Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways
2.9	ATIEL-ATC Group F [p]	(Professional) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding
2.10	ATIEL-ATC Group B [p]	General professional use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines)
2.11	ATIEL-ATC Group B [p]	General professional use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines)
2.12	ATIEL-ATC Group B [c]	General consumer use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines)
2.13	ATIEL-ATC Group B [c]	General consumer use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines)
2.14	ATIEL-ATC Group A [i]	Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities
2.15	ATIEL-ATC Group A [i]	Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities
2.16	ATIEL-ATC Group C [c]	(Consumer) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways
2.17	ATIEL-ATC Group C [c]	(Consumer) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways
2.18	Manufacture of cosmetic products	Manufacture of cosmetic products

2.19	COLIPA U1	End use of cosmetic products
2.20	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, GRG	General Rubber Goods
2.21	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, GRG	General Rubber Goods
2.22	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, GRG	General Rubber Goods
2.23	GRG, GRG1	General Rubber Goods_Article Service Life
2.24	GRG, GRG1	General Rubber Goods_Article Service Life
2.25	FECC 1.1, FECC 1.2, FECC 1.3, FECC 1.4	Distribution
2.26	FECC 1.6	Distribution;Q Controlling
2.27	FECC 2.1, FECC 2.2, FECC 2.3, FECC 2.4	Formulating
2.28	Manufacturing	Manufacturing

Conditions of use affecting exposure

Scenario 1: (Industrial) Handling and dilution of metalworking fluid concentrates (ATIEL-ATC Group E [i])

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

Description of ES 1

Free short title	(Industrial) Handling and dilution of metalworking fluid concentrates (ATIEL-ATC Group E [i])
Systematic title based on use descriptor	ERC 2; PROC 5, 8B, 1, 2
Name of constributing environmental scenario and corresponding ERC	ERC 2 Formulation of preparations
Name(s) of contributing worker scenarios and corresponding PROCs	PROC 5 - Mixing or blending in batch processes (multistage and/or significant contact) PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 5 - Mixing or blending in batch processes (multistage and/or significant contact) PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 1 - Use in closed process, no likelihood of exposure PROC 2 - Use in closed, continuous process with occasional controlled exposure
2.1.1 Contributing Scenario (1) controlling environmental exposure for ERC 2	

Operational conditions	
Annual site tonnage	1,000 to/year
Daily amount used at site	3,333.333 kg/day
Release times per year	300 days/year
Local freshwater dilution factor	10
Local marine water dilution factor	100
Release fraction to air from process	0.005 %
Release fraction to wastewater from process	2.00E-10 %
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	
SpERC	ATC/ATIEL - E(i) (ATC/ATIEL - E(i))
2.1.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 5	
Name of contributing scenario	PROC 5 Mixing or blending in batch processes (multistage and/or significant contact)
Scenario subtitle	Add concentrate to water tank by pouring from small container
2.1.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Add concentrate to water tank by pouring from small container
2.1.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 5	
Name of contributing scenario	PROC 5 Mixing or blending in batch processes (multistage and/or significant contact)
Scenario subtitle	Add concentrate to water tank by pumping from drum or tank via mixer
2.1.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Add concentrate to water tank by pumping from drum or tank via mixer
2.1.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Sample the solution to test concentration
2.1.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities

Scenario subtitle	Disposal of waste product & used containers
2.1.8 Contributing Scenario (8) controlling industrial worker exposure for PROC 1	
Name of contributing scenario	PROC 1 Use in closed process, no likelihood of exposure
Scenario subtitle	Material storage
2.1.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 2	
Name of contributing scenario	PROC 2 Use in closed, continuous process with occasional controlled exposure
Scenario subtitle	Material storage
As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.	

Scenario 2: General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) (ATIEL-ATC Group B [i])

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

Description of ES 2

Free short title	General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) (ATIEL-ATC Group B [i])
Systematic title based on use descriptor	ERC 4; PROC 9, 8B, 2, 1
Name of constributing environmental scenario and corresponding ERC	ERC 4 Industrial use of processing aids
Name(s) of contributing worker scenarios and corresponding PROCs	PROC 9 - Transfer of chemicals into small containers (dedicated filling line) PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 2 - Use in closed, continuous process with occasional controlled exposure PROC 9 - Transfer of chemicals into small containers (dedicated filling line) PROC 1 - Use in closed process, no likelihood of exposure PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 1 - Use in closed process, no likelihood of exposure PROC 2 - Use in closed, continuous process with occasional controlled exposure
2.2.1 Contributing Scenario (1) controlling environmental exposure for ERC 4	
Operational conditions	
Annual site tonnage	1,000 to/year
Daily amount used at site	3,333.333 kg/day
Release times per year	300 days/year
Local freshwater dilution factor	10

Local marine water dilution factor	100
Release fraction to air from process	0.005 %
Release fraction to wastewater from process	2.00E-10 %
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	
SpERC	ATC/ATIEL - B(i) (ATC/ATIEL - B(i))
2.2.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 9	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Initial factory fill from header tank; Lubricating Oil
2.2.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Initial factory fill by pouring from containers; Lubricating Oil
2.2.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 2	
Name of contributing scenario	PROC 2 Use in closed, continuous process with occasional controlled exposure
Scenario subtitle	Initial factory fill by injection of greases.
2.2.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 9	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Initial factory fill by injection of greases.
2.2.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 1	
Name of contributing scenario	PROC 1 Use in closed process, no likelihood of exposure
Scenario subtitle	Use as a lubricant/grease in a closed system
2.2.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Maintenance activities industrial settings. General exposure during maintenance work including draining, refilling and R&D (e.g. engine testing).
2.2.8 Contributing Scenario (8) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Disposal of waste product & used containers
2.2.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 1	

Name of contributing scenario	PROC 1 Use in closed process, no likelihood of exposure
Scenario subtitle	Material storage
2.2.10 Contributing Scenario (10) controlling industrial worker exposure for PROC 2	
Name of contributing scenario	PROC 2 Use in closed, continuous process with occasional controlled exposure
Scenario subtitle	Material storage
As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.	

Scenario 3: General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) (ATIEL-ATC Group B [i])

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

Description of ES 3

Free short title	General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) (ATIEL-ATC Group B [i])
Systematic title based on use descriptor	ERC 7; PROC 9, 8B, 2, 1
Name of constributing environmental scenario and corresponding ERC	ERC 7 Industrial use of substances in closed systems
Name(s) of contributing worker scenarios and corresponding PROCs	PROC 9 - Transfer of chemicals into small containers (dedicated filling line) PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 2 - Use in closed, continuous process with occasional controlled exposure PROC 9 - Transfer of chemicals into small containers (dedicated filling line) PROC 1 - Use in closed process, no likelihood of exposure PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 1 - Use in closed process, no likelihood of exposure PROC 2 - Use in closed, continuous process with occasional controlled exposure
2.3.1 Contributing Scenario (1) controlling environmental exposure for ERC 7	
Operational conditions	
Annual site tonnage	1,000 to/year
Daily amount used at site	3,333.333 kg/day
Release times per year	300 days/year
Local freshwater dilution factor	10
Local marine water dilution factor	100
Release fraction to air from process	0.005 %

Release fraction to wastewater from process	2.00E-10 %
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	
SpERC	ATC/ATIEL - B(i) (ATC/ATIEL - B(i))
2.3.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 9	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Initial factory fill from header tank; Lubricating Oil
2.3.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Initial factory fill by pouring from containers; Lubricating Oil
2.3.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 2	
Name of contributing scenario	PROC 2 Use in closed, continuous process with occasional controlled exposure
Scenario subtitle	Initial factory fill by injection of greases.
2.3.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 9	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Initial factory fill by injection of greases.
2.3.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 1	
Name of contributing scenario	PROC 1 Use in closed process, no likelihood of exposure
Scenario subtitle	Use as a lubricant/grease in a closed system
2.3.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Maintenance activities industrial settings. General exposure during maintenance work including draining, refilling and R&D (e.g. engine testing).
2.3.8 Contributing Scenario (8) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Disposal of waste product & used containers
2.3.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 1	
Name of contributing scenario	PROC 1 Use in closed process, no likelihood of exposure
Scenario subtitle	Material storage

2.3.10 Contributing Scenario (10) controlling industrial worker exposure for PROC 2	
Name of contributing scenario	PROC 2 Use in closed, continuous process with occasional controlled exposure
Scenario subtitle	Material storage
As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.	

Scenario 4: (Industrial) Use of lubricants in open high temperature processes, e.g. quenching fluids, glass release agents (ATIEL-ATC Group D [i])

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

Description of ES 4

Free short title	(Industrial) Use of lubricants in open high temperature processes, e.g. quenching fluids, glass release agents (ATIEL-ATC Group D [i])
Systematic title based on use descriptor	ERC 4; PROC 8B, 13, 1, 2
Name of constributing environmental scenario and corresponding ERC	ERC 4 Industrial use of processing aids
Name(s) of contributing worker scenarios and corresponding PROCs	PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 13 - Treatment of articles by dipping and pouring PROC 13 - Treatment of articles by dipping and pouring PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 1 - Use in closed process, no likelihood of exposure PROC 2 - Use in closed, continuous process with occasional controlled exposure
2.4.1 Contributing Scenario (1) controlling environmental exposure for ERC 4	
Operational conditions	
Annual site tonnage	1,000 to/year
Daily amount used at site	3,333.333 kg/day
Release times per year	300 days/year
Local freshwater dilution factor	10
Local marine water dilution factor	100
Release fraction to air from process	0.005 %
Release fraction to wastewater from process	2.00E-10 %
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	
SpERC	ATC/ATIEL - D(i) (ATC/ATIEL - D(i))
2.4.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Fill bath with fluid by pumping from drum or large container
2.4.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 13	
Name of contributing scenario	PROC 13 Treatment of articles by dipping and pouring
Scenario subtitle	Dip hot metal workpiece into fluid in closed booth
2.4.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 13	
Name of contributing scenario	PROC 13 Treatment of articles by dipping and pouring
Scenario subtitle	Dip hot metal workpiece into fluid in open vat
2.4.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Treat and dispose spent fluid
2.4.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 1	
Name of contributing scenario	PROC 1 Use in closed process, no likelihood of exposure
Scenario subtitle	Material storage
2.4.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 2	
Name of contributing scenario	PROC 2 Use in closed, continuous process with occasional controlled exposure
Scenario subtitle	Material storage
As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.	

Scenario 5: (Industrial) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding (ATIEL-ATC Group F [i])

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

Description of ES 5

Free short title	(Industrial) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding (ATIEL-ATC Group F [i])
Systematic title based on use descriptor	ERC 4; PROC 8B, 17, 2, 1
Name of constributing environmental scenario and corresponding ERC	ERC 4 Industrial use of processing aids

Name(s) of contributing worker scenarios and corresponding PROCs	PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 17 - Lubrication at high energy conditions and in partly open process PROC 17 - Lubrication at high energy conditions and in partly open process PROC 2 - Use in closed, continuous process with occasional controlled exposure PROC 17 - Lubrication at high energy conditions and in partly open process PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 1 - Use in closed process, no likelihood of exposure PROC 2 - Use in closed, continuous process with occasional controlled exposure
2.5.1 Contributing Scenario (1) controlling environmental exposure for ERC 4	
Operational conditions	
Annual site tonnage	1,000 to/year
Daily amount used at site	3,333.333 kg/day
Release times per year	300 days/year
Local freshwater dilution factor	10
Local marine water dilution factor	100
Release fraction to air from process	0.005 %
Release fraction to wastewater from process	2.00E-10 %
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	
SpERC	ATC/ATIEL - F(i) (ATC/ATIEL - F(i))
2.5.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Fill bath with fluid
2.5.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 17	
Name of contributing scenario	PROC 17 Lubrication at high energy conditions and in partly open process
Scenario subtitle	Drilling, grinding etc
2.5.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 17	

Name of contributing scenario	PROC 17 Lubrication at high energy conditions and in partly open process
Scenario subtitle	Use of high speed machinery (not MWF uses) - open systems giving rise to mist
2.5.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 2	
Name of contributing scenario	PROC 2 Use in closed, continuous process with occasional controlled exposure
Scenario subtitle	Automated metal rolling / forming
2.5.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 17	
Name of contributing scenario	PROC 17 Lubrication at high energy conditions and in partly open process
Scenario subtitle	Semi-automated metal rolling / forming
2.5.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Draining, maintenance & cleaning of equipment
2.5.8 Contributing Scenario (8) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Treat and dispose spent fluid
2.5.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 1	
Name of contributing scenario	PROC 1 Use in closed process, no likelihood of exposure
Scenario subtitle	Material storage
2.5.10 Contributing Scenario (10) controlling industrial worker exposure for PROC 2	
Name of contributing scenario	PROC 2 Use in closed, continuous process with occasional controlled exposure
Scenario subtitle	Material storage
As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.	

Scenario 6: (Industrial) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g.

mould releases, corrosion protection, slideways (ATIEL-ATC Group C [i])

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

Description of ES 6

Free short title	(Industrial) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways (ATIEL-ATC Group C [i])
Systematic title based on use descriptor	ERC 4; PROC 8B, 9, 10, 7, 13, 1, 2
Name of constributing environmental scenario and corresponding ERC	ERC 4 Industrial use of processing aids

Name(s) of contributing worker scenarios and corresponding PROCs	PROC 8b - Transfer of chemicals from/to vessels/ large containers at 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) PROC 10 - Roller application or brushing PROC 7 - Industrial spraying PROC 13 - Treatment of articles by dipping and pouring PROC 1 - Use in closed process, no likelihood of exposure PROC 2 - Use in closed, continuous process with occasional controlled exposure
2.6.1 Contributing Scenario (1) controlling environmental exposure for ERC 4	
Operational conditions	
Annual site tonnage	1,000 to/year
Daily amount used at site	3,333.333 kg/day
Release times per year	300 days/year
Local freshwater dilution factor	10
Local marine water dilution factor	100
Release fraction to air from process	0.005 %
Release fraction to wastewater from process	2.00E-10 %
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	
SpERC	ATC/ATIEL - C(i) (ATC/ATIEL - C(i))
2.6.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Manual filling of lubricant container, i.e. bath or tank
2.6.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Automated filling of lubricant container, i.e. bath or tank
2.6.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 9	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)

Scenario subtitle	Automated filling of lubricant container, i.e. bath or tank
2.6.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 10	
Name of contributing scenario	PROC 10 Roller application or brushing
Scenario subtitle	Automated roller application or brushing of coatings
2.6.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 7	
Name of contributing scenario	PROC 7 Industrial spraying
Scenario subtitle	Spraying onto equipment or article
2.6.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 13	
Name of contributing scenario	PROC 13 Treatment of articles by dipping and pouring
Scenario subtitle	Treatment of articles by dipping and pouring
2.6.8 Contributing Scenario (8) controlling industrial worker exposure for PROC 1	
Name of contributing scenario	PROC 1 Use in closed process, no likelihood of exposure
Scenario subtitle	Material storage
2.6.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 2	
Name of contributing scenario	PROC 2 Use in closed, continuous process with occasional controlled exposure
Scenario subtitle	Material storage
As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.	

Scenario 7: (Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways (ATIEL-ATC Group C [p])

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

Description of ES 7

Free short title	(Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways (ATIEL-ATC Group C [p])
Systematic title based on use descriptor	ERC 8A; PROC 8A, 10, 11, 13, 1, 2
Name of constributing 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 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 13 - Treatment of articles by dipping and pouring PROC 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities PROC 1 - Use in closed process, no likelihood of exposure PROC 2 - Use in closed, continuous process with occasional controlled exposure
2.7.1 Contributing Scenario (1) controlling environmental exposure for ERC 8A	
Operational conditions	
Annual site tonnage	1,000 to/year
Daily amount used at site	27.397 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	0.010 %
Release fraction to wastewater from process	0.050 %
Release fraction to soil from process	0.100 %
Fraction tonnage to region	10 %
Fraction used at main source	10 %
STP	yes
River flow rate	18000 m^3/day
Municipal sewage treatment plant discharge	2000000 L/day
Risk management measures	
SpERC	ATC/ATIEL - C(p) (ATC/ATIEL - C(p))
2.7.2 Contributing Scenario (2) controlling professional worker exposure for PROC 8A	
Name of contributing scenario	PROC 8a Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Scenario subtitle	Manual filling of lubricant container, i.e. bath or tank
2.7.3 Contributing Scenario (3) controlling professional worker exposure for PROC 10	
Name of contributing scenario	PROC 10 Roller application or brushing
Scenario subtitle	Roller application or brushing of coatings
2.7.4 Contributing Scenario (4) controlling professional worker exposure for PROC 11	
Name of contributing scenario	PROC 11 Non industrial spraying

Scenario subtitle	Spraying onto equipment or article
2.7.5 Contributing Scenario (5) controlling professional worker exposure for PROC 13	
Name of contributing scenario	PROC 13 Treatment of articles by dipping and pouring
Scenario subtitle	Treatment of articles by dipping and pouring
2.7.6 Contributing Scenario (6) controlling professional worker exposure for PROC 8A	
Name of contributing scenario	PROC 8a Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Scenario subtitle	Draining, maintenance & cleaning of equipment
2.7.7 Contributing Scenario (7) controlling professional worker exposure for PROC 1	
Name of contributing scenario	PROC 1 Use in closed process, no likelihood of exposure
Scenario subtitle	Material storage
2.7.8 Contributing Scenario (8) controlling professional worker exposure for PROC 2	
Name of contributing scenario	PROC 2 Use in closed, continuous process with occasional controlled exposure
Scenario subtitle	Material storage
As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.	

Scenario 8: (Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways (ATIEL-ATC Group C [p])

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

Description of ES 8

Free short title	(Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways (ATIEL-ATC Group C [p])
Systematic title based on use descriptor	ERC 8D; PROC 8A, 10, 11, 13, 1, 2
Name of constributing 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 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 13 - Treatment of articles by dipping and pouring PROC 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities PROC 1 - Use in closed process, no likelihood of exposure PROC 2 - Use in closed, continuous process with occasional controlled exposure
2.8.1 Contributing Scenario (1) controlling environmental exposure for ERC 8D	

Operational conditions	
Annual site tonnage	1,000 to/year
Daily amount used at site	27.397 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	0.010 %
Release fraction to wastewater from process	0.050 %
Release fraction to soil from process	0.100 %
Fraction tonnage to region	10 %
Fraction used at main source	10 %
STP	yes
River flow rate	18000 m^3/day
Municipal sewage treatment plant discharge	2000000 L/day
Risk management measures	
SpERC	ATC/ATIEL - C(p) (ATC/ATIEL - C(p))
2.8.2 Contributing Scenario (2) controlling professional worker exposure for PROC 8A	
Name of contributing scenario	PROC 8a Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Scenario subtitle	Manual filling of lubricant container, i.e. bath or tank
2.8.3 Contributing Scenario (3) controlling professional worker exposure for PROC 10	
Name of contributing scenario	PROC 10 Roller application or brushing
Scenario subtitle	Roller application or brushing of coatings
2.8.4 Contributing Scenario (4) controlling professional worker exposure for PROC 11	
Name of contributing scenario	PROC 11 Non industrial spraying
Scenario subtitle	Spraying onto equipment or article
2.8.5 Contributing Scenario (5) controlling professional worker exposure for PROC 13	
Name of contributing scenario	PROC 13 Treatment of articles by dipping and pouring
Scenario subtitle	Treatment of articles by dipping and pouring
2.8.6 Contributing Scenario (6) controlling professional worker exposure for PROC 8A	
Name of contributing scenario	PROC 8a Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Scenario subtitle	Draining, maintenance & cleaning of equipment
2.8.7 Contributing Scenario (7) controlling professional worker exposure for PROC 1	
Name of contributing scenario	PROC 1 Use in closed process, no likelihood of exposure
Scenario subtitle	Material storage

2.8.8 Contributing Scenario (8) controlling professional worker exposure for PROC 2	
Name of contributing scenario	PROC 2 Use in closed, continuous process with occasional controlled exposure
Scenario subtitle	Material storage
As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.	

Scenario 9: (Professional) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding (ATIEL-ATC Group F [p])

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

Description of ES 9

Free short title	(Professional) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding (ATIEL-ATC Group F [p])
Systematic title based on use descriptor	ERC 8A; PROC 8A, 17, 1, 2
Name of constributing 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 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities PROC 17 - Lubrication at high energy conditions and in partly open process PROC 17 - Lubrication at high energy conditions and in partly open process PROC 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities PROC 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities PROC 1 - Use in closed process, no likelihood of exposure PROC 2 - Use in closed, continuous process with occasional controlled exposure
2.9.1 Contributing Scenario (1) controlling environmental exposure for ERC 8A	
Operational conditions	
Annual site tonnage	1,000 to/year
Daily amount used at site	27.397 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	0.010 %
Release fraction to wastewater from process	0.100 %
Release fraction to soil from process	0.100 %
Fraction tonnage to region	10 %

Fraction used at main source	10 %
STP	yes
River flow rate	18000 m^3/day
Municipal sewage treatment plant discharge	2000000 L/day
Risk management measures	
SpERC	ATC/ATIEL - F(p) (ATC/ATIEL - F(p))
2.9.2 Contributing Scenario (2) controlling professional worker exposure for PROC 8A	
Name of contributing scenario	PROC 8a Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Scenario subtitle	Fill bath with fluid
2.9.3 Contributing Scenario (3) controlling professional worker exposure for PROC 17	
Name of contributing scenario	PROC 17 Lubrication at high energy conditions and in partly open process
Scenario subtitle	Drilling, grinding etc
2.9.4 Contributing Scenario (4) controlling professional worker exposure for PROC 17	
Name of contributing scenario	PROC 17 Lubrication at high energy conditions and in partly open process
Scenario subtitle	Use of high speed machinery (not MWF uses) - open systems giving rise to mist
2.9.5 Contributing Scenario (5) controlling professional worker exposure for PROC 8A	
Name of contributing scenario	PROC 8a Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Scenario subtitle	Draining, maintenance & cleaning of equipment
2.9.6 Contributing Scenario (6) controlling professional worker exposure for PROC 8A	
Name of contributing scenario	PROC 8a Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Scenario subtitle	Treat and dispose spent fluid
2.9.7 Contributing Scenario (7) controlling professional worker exposure for PROC 1	
Name of contributing scenario	PROC 1 Use in closed process, no likelihood of exposure
Scenario subtitle	Material storage
2.9.8 Contributing Scenario (8) controlling professional worker exposure for PROC 2	
Name of contributing scenario	PROC 2 Use in closed, continuous process with occasional controlled exposure
Scenario subtitle	Material storage
As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.	

Scenario 10: General professional use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) (ATIEL-ATC Group B [p])

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

Description of ES 10

Free short title	General professional use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) (ATIEL-ATC Group B [p])
Systematic title based on use descriptor	ERC 9A; PROC 1, 8A, 8B, 20, 2
Name of constributing environmental scenario and corresponding ERC	ERC 9a Wide dispersive indoor use of substances in closed systems
Name(s) of contributing worker scenarios and corresponding PROCs	PROC 1 - Use in closed process, no likelihood of exposure 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 20 - Heat and pressure transfer fluids (closed systems) in dispersive use PROC 1 - Use in closed process, no likelihood of exposure PROC 2 - Use in closed, continuous process with occasional controlled exposure
2.10.1 Contributing Scenario (1) controlling environmental exposure for ERC 9A	
Operational conditions	
Annual site tonnage	1,000 to/year
Daily amount used at site	27.397 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	0.010 %
Release fraction to wastewater from process	0.050 %
Release fraction to soil from process	0.100 %
Fraction tonnage to region	10 %
Fraction used at main source	10 %
STP	yes
River flow rate	18000 m^3/day
Municipal sewage treatment plant discharge	2000000 L/day
Risk management measures	
SpERC	ATC/ATIEL - B(p) (ATC/ATIEL - B(p))
2.10.2 Contributing Scenario (2) controlling professional worker exposure for PROC 1	
Name of contributing scenario	PROC 1 Use in closed process, no likelihood of exposure
Scenario subtitle	Use as a lubricant/grease in a closed system
2.10.3 Contributing Scenario (3) controlling professional worker exposure for PROC 8A	
Name of contributing scenario	PROC 8a Transfer of chemicals from/to vessels/ large containers at non dedicated facilities

Scenario subtitle	General exposure during maintenance work including draining, refilling.
2.10.4 Contributing Scenario (4) controlling professional worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	General exposure during maintenance work including draining, refilling.
2.10.5 Contributing Scenario (5) controlling professional worker exposure for PROC 20	
Name of contributing scenario	PROC 20 Heat and pressure transfer fluids in dispersive, professional use but closed systems
Scenario subtitle	General exposure during maintenance work including draining, refilling.
2.10.6 Contributing Scenario (6) controlling professional worker exposure for PROC 1	
Name of contributing scenario	PROC 1 Use in closed process, no likelihood of exposure
Scenario subtitle	Material storage
2.10.7 Contributing Scenario (7) controlling professional worker exposure for PROC 2	
Name of contributing scenario	PROC 2 Use in closed, continuous process with occasional controlled exposure
Scenario subtitle	Material storage
As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.	

Scenario 11: General professional use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) (ATIEL-ATC Group B [p])

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

Description of ES 11

Free short title	General professional use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) (ATIEL-ATC Group B [p])
Systematic title based on use descriptor	ERC 9B; PROC 1, 8A, 8B, 20, 2
Name of constributing environmental scenario and corresponding ERC	ERC 9b Wide dispersive outdoor use of substances in closed systems
Name(s) of contributing worker scenarios and corresponding PROCs	PROC 1 - Use in closed process, no likelihood of exposure 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 20 - Heat and pressure transfer fluids (closed systems) in dispersive use PROC 1 - Use in closed process, no likelihood of exposure PROC 2 - Use in closed, continuous process with occasional controlled exposure
2.11.1 Contributing Scenario (1) controlling environmental exposure for ERC 9B	
Operational conditions	
Annual site tonnage	1,000 to/year

Daily amount used at site	27.397 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	0.010 %
Release fraction to wastewater from process	0.050 %
Release fraction to soil from process	0.100 %
Fraction tonnage to region	10 %
Fraction used at main source	10 %
STP	yes
River flow rate	18000 m^3/day
Municipal sewage treatment plant discharge	2000000 L/day
Risk management measures	
SpERC	ATC/ATIEL - B(p) (ATC/ATIEL - B(p))
2.11.2 Contributing Scenario (2) controlling professional worker exposure for PROC 1	
Name of contributing scenario	PROC 1 Use in closed process, no likelihood of exposure
Scenario subtitle	Use as a lubricant/grease in a closed system
2.11.3 Contributing Scenario (3) controlling professional worker exposure for PROC 8A	
Name of contributing scenario	PROC 8a Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Scenario subtitle	General exposure during maintenance work including draining, refilling.
2.11.4 Contributing Scenario (4) controlling professional worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	General exposure during maintenance work including draining, refilling.
2.11.5 Contributing Scenario (5) controlling professional worker exposure for PROC 20	
Name of contributing scenario	PROC 20 Heat and pressure transfer fluids in dispersive, professional use but closed systems
Scenario subtitle	General exposure during maintenance work including draining, refilling.
2.11.6 Contributing Scenario (6) controlling professional worker exposure for PROC 1	
Name of contributing scenario	PROC 1 Use in closed process, no likelihood of exposure
Scenario subtitle	Material storage
2.11.7 Contributing Scenario (7) controlling professional worker exposure for PROC 2	
Name of contributing scenario	PROC 2 Use in closed, continuous process with occasional controlled exposure
Scenario subtitle	Material storage
As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.	

Scenario 12: General consumer use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) (ATIEL-ATC Group B [c])

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

Description of ES 12

Free short title	General consumer use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) (ATIEL-ATC Group B [c])
Systematic title based on use descriptor	ERC 9A; PC 24
Name of constributing environmental scenario and corresponding ERC	ERC 9a Wide dispersive indoor use of substances in closed systems
Name(s) of contributing consumer scenarios and corresponding PCs/ACs	PC 24 Lubricants, Greases and Release Products PC 24 Lubricants, Greases and Release Products
2.12.1 Contributing Scenario (1) controlling environmental exposure for ERC 9A	
Operational conditions	
Annual site tonnage	1,000 to/year
Daily amount used at site	27.397 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	0.500 %
Release fraction to wastewater from process	0.050 %
Release fraction to soil from process	0.010 %
Fraction tonnage to region	10 %
Fraction used at main source	10 %
STP	yes
River flow rate	18000 m^3/day
Municipal sewage treatment plant discharge	2000000 L/day
Risk management measures	
SpERC	ATC/ATIEL - B(c) (ATC/ATIEL - B(c))
2.12.2 Contributing Scenario (2) controlling consumer exposure for PC 24	
Name of contributing scenario	PC 24 Lubricants, Greases and Release Products
Scenario subtitle	Use as a lubricant in a closed system, including filling, draining and maintenance
2.12.3 Contributing Scenario (3) controlling consumer exposure for PC 24	
Name of contributing scenario	PC 24 Lubricants, Greases and Release Products

Scenario subtitle	Use as a lubricant in a closed system, including filling, draining and maintenance
As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.	

Scenario 13: General consumer use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) (ATIEL-ATC Group B [c])

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

Description of ES 13

Free short title	General consumer use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) (ATIEL-ATC Group B [c])
Systematic title based on use descriptor	ERC 9B; PC 24
Name of constributing environmental scenario and corresponding ERC	ERC 9b Wide dispersive outdoor use of substances in closed systems
Name(s) of contributing consumer scenarios and corresponding PCs/ACs	PC 24 Lubricants, Greases and Release Products PC 24 Lubricants, Greases and Release Products
2.13.1 Contributing Scenario (1) controlling environmental exposure for ERC 9B	
Operational conditions	
Annual site tonnage	1,000 to/year
Daily amount used at site	27.397 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	0.500 %
Release fraction to wastewater from process	0.050 %
Release fraction to soil from process	0.010 %
Fraction tonnage to region	10 %
Fraction used at main source	10 %
STP	yes
River flow rate	18000 m^3/day
Municipal sewage treatment plant discharge	2000000 L/day
Risk management measures	
SpERC	ATC/ATIEL - B(c) (ATC/ATIEL - B(c))
2.13.2 Contributing Scenario (2) controlling consumer exposure for PC 24	
Name of contributing scenario	PC 24 Lubricants, Greases and Release Products
Scenario subtitle	Use as a lubricant in a closed system, including filling, draining and maintenance

2.13.3 Contributing Scenario (3) controlling consumer exposure for PC 24	
Name of contributing scenario	PC 24 Lubricants, Greases and Release Products
Scenario subtitle	Use as a lubricant in a closed system, including filling, draining and maintenance
As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.	

Scenario 14: Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities (ATIEL-ATC Group A [i])

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

Description of ES 14

Free short title	Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities (ATIEL-ATC Group A [i])

Systematic title based on use descriptor	ERC 2; PROC 2, 3, 4, 8B, 8A, 9, 15, 1, 5
Name of constributing environmental scenario and corresponding ERC	ERC 2 Formulation of preparations
Name(s) of contributing worker scenarios and corresponding PROCs	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 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities 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 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 9 - Transfer of chemicals into small containers (dedicated filling line) PROC 15 - Use of laboratory reagents in small scale laboratories PROC 1 - Use in closed process, no likelihood of exposure 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 2 - Use in closed, continuous process with occasional controlled exposure
2.14.1 Contributing Scenario (1) controlling environmental exposure for ERC 2	
Operational conditions	
Annual site tonnage	1,000 to/year

Daily amount used at site	3,333.333 kg/day
Release times per year	300 days/year
Local freshwater dilution factor	10
Local marine water dilution factor	100
Release fraction to air from process	0.005 %
Release fraction to wastewater from process	0.0005 %
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	
SpERC ATC-ATIEL - A(i) (ATIEL-ATC SPERC 2.Ai-l.v1	)
2.14.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 2	
Name of contributing scenario	PROC 2 Use in closed, continuous process with occasional controlled exposure
Scenario subtitle	Closed continuous processes at elevated temperature with sampling, including grease manufacturing
2.14.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 3	
Name of contributing scenario	PROC 3 Use in closed batch process (synthesis or formulation)
Scenario subtitle	Batch closed process with sampling. Blending and Filling processes (closed/dedicated). Includes both bulk and small quantity additions. May be at elevated temperature e.g. grease manufacture
2.14.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 4	
Name of contributing scenario	PROC 4 Use in batch and other process (synthesis) where opportunity for exposure arises
Scenario subtitle	Sample collection and formulation
2.14.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Sample collection of incoming raw material
2.14.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Bulk transfers by fixed pipe or flexible hose
2.14.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Small pack (drum/bag) transfers - dedicated facility
2.14.8 Contributing Scenario (8) controlling industrial worker exposure for PROC 8A	
Name of contributing scenario	PROC 8a Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Scenario subtitle	Small pack (drum/bag) transfers - non dedicated facility
2.14.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Top filling of bulk containers (road cars etc)
2.14.10 Contributing Scenario (10) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities

Scenario subtitle	Maintenance and cleaning
2.14.11 Contributing Scenario (11) controlling industrial worker exposure for PROC 9	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Filling of drums and small packages
2.14.12 Contributing Scenario (12) controlling industrial worker exposure for PROC 15	
Name of contributing scenario	PROC 15 Use of laboratory reagents in small scale laboratories
Scenario subtitle	QC & Laboratory
2.14.13 Contributing Scenario (13) controlling industrial worker exposure for PROC 1	
Name of contributing scenario	PROC 1 Use in closed process, no likelihood of exposure
Scenario subtitle	Material storage
2.14.14 Contributing Scenario (14) controlling industrial worker exposure for PROC 4	
Name of contributing scenario	PROC 4 Use in batch and other process (synthesis) where opportunity for exposure arises
Scenario subtitle	Batch open process with sampling. Blending and Filling processes (open/non dedicated). Includes addition of both bulk and small quantity. Mixing operations. May be at elevated temperature e.g. grease manufacture
2.14.15 Contributing Scenario (15) controlling industrial worker exposure for PROC 5	
Name of contributing scenario	PROC 5 Mixing or blending in batch processes (multistage and/or significant contact)
Scenario subtitle	Batch open process with sampling. Blending and Filling processes (open/non dedicated). Includes addition of both bulk and small quantity. Mixing operations. May be at elevated temperature e.g. grease manufacture
2.14.16 Contributing Scenario (16) controlling industrial worker exposure for PROC 2	
Name of contributing scenario	PROC 2 Use in closed, continuous process with occasional controlled exposure
Scenario subtitle	Material storage
As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.	

Scenario 15: Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities (ATIEL-ATC Group A [i])

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

Description of ES 15

Free short title	Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities (ATIEL-ATC Group A [i])
Systematic title based on use descriptor	ERC 6A; PROC 2, 3, 4, 8B, 8A, 9, 15, 1, 5

Name of constributing environmental scenario and corresponding ERC	ERC 6a Industrial use of intermediates

Name(s) of contributing worker scenarios and corresponding PROCs	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 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities 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 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 9 - Transfer of chemicals into small containers (dedicated filling line) PROC 15 - Use of laboratory reagents in small scale laboratories PROC 1 - Use in closed process, no likelihood of exposure 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 2 - Use in closed, continuous process with occasional controlled exposure
2.15.1 Contributing Scenario (1) controlling environmental exposure for ERC 6A	
Operational conditions	
Annual site tonnage	1,000 to/year
Daily amount used at site	3,333.333 kg/day
Release times per year	300 days/year
Local freshwater dilution factor	10
Local marine water dilution factor	100
Release fraction to air from process	0.005 %
Release fraction to wastewater from process	0.0005 %
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	

SpERC	ATC-ATIEL - A(i) (ATIEL-ATC SPERC 2.Ai-l.v1)
2.15.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 2	
Name of contributing scenario	PROC 2 Use in closed, continuous process with occasional controlled exposure
Scenario subtitle	Closed continuous processes at elevated temperature with sampling, including grease manufacturing
2.15.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 3	
Name of contributing scenario	PROC 3 Use in closed batch process (synthesis or formulation)
Scenario subtitle	Batch closed process with sampling. Blending and Filling processes (closed/dedicated). Includes both bulk and small quantity additions. May be at elevated temperature e.g. grease manufacture
2.15.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 4	
Name of contributing scenario	PROC 4 Use in batch and other process (synthesis) where opportunity for exposure arises
Scenario subtitle	Sample collection and formulation
2.15.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Sample collection of incoming raw material
2.15.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Bulk transfers by fixed pipe or flexible hose
2.15.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Small pack (drum/bag) transfers - dedicated facility
2.15.8 Contributing Scenario (8) controlling industrial worker exposure for PROC 8A	
Name of contributing scenario	PROC 8a Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Scenario subtitle	Small pack (drum/bag) transfers - non dedicated facility
2.15.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Top filling of bulk containers (road cars etc)
2.15.10 Contributing Scenario (10) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Maintenance and cleaning
2.15.11 Contributing Scenario (11) controlling industrial worker exposure for PROC 9	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Filling of drums and small packages

2.15.12 Contributing Scenario (12) controlling industrial worker exposure for PROC 15	
Name of contributing scenario	PROC 15 Use of laboratory reagents in small scale laboratories
Scenario subtitle	QC & Laboratory
2.15.13 Contributing Scenario (13) controlling industrial worker exposure for PROC 1	
Name of contributing scenario	PROC 1 Use in closed process, no likelihood of exposure
Scenario subtitle	Material storage
2.15.14 Contributing Scenario (14) controlling industrial worker exposure for PROC 4	
Name of contributing scenario	PROC 4 Use in batch and other process (synthesis) where opportunity for exposure arises
Scenario subtitle	Batch open process with sampling. Blending and Filling processes (open/non dedicated). Includes addition of both bulk and small quantity. Mixing operations. May be at elevated temperature e.g. grease manufacture
2.15.15 Contributing Scenario (15) controlling industrial worker exposure for PROC 5	
Name of contributing scenario	PROC 5 Mixing or blending in batch processes (multistage and/or significant contact)
Scenario subtitle	Batch open process with sampling. Blending and Filling processes (open/non dedicated). Includes addition of both bulk and small quantity. Mixing operations. May be at elevated temperature e.g. grease manufacture
2.15.16 Contributing Scenario (16) controlling industrial worker exposure for PROC 2	
Name of contributing scenario	PROC 2 Use in closed, continuous process with occasional controlled exposure
Scenario subtitle	Material storage
As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.	

Scenario 16: (Consumer) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways (ATIEL-ATC Group C [c])

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

Description of ES 16

Free short title	(Consumer) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways (ATIEL-ATC Group C [c])
Systematic title based on use descriptor	ERC 8A; PC 24
Name of constributing environmental scenario and corresponding ERC	ERC 8a Wide dispersive indoor use of processing aids in open systems
Name(s) of contributing consumer scenarios and corresponding PCs/ACs	PC 24 Lubricants, Greases and Release Products PC 24 Lubricants, Greases and Release Products PC 24 Lubricants, Greases and Release Products
2.16.1 Contributing Scenario (1) controlling environmental exposure for ERC 8A	
Operational conditions	

Annual site tonnage	1,000 to/year
Daily amount used at site	0.136986 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	0.500 %
Release fraction to wastewater from process	0.050 %
Release fraction to soil from process	0.010 %
Fraction tonnage to region	10 %
Fraction used at main source	0.050 %
STP	yes
River flow rate	18000 m^3/day
Municipal sewage treatment plant discharge	2000000 L/day
Risk management measures	
SpERC	ATIEL-ATC SPERC 8.Cc.v1 - Covers consumer use of lubricants and greases in open systems, including application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection,
2.16.2 Contributing Scenario (2) controlling consumer exposure for PC 24	
Name of contributing scenario	PC 24 Lubricants, Greases and Release Products
Scenario subtitle	Use as a lubricant in an open system, e.g, penetrating lubricants/greases
2.16.3 Contributing Scenario (3) controlling consumer exposure for PC 24	
Name of contributing scenario	PC 24 Lubricants, Greases and Release Products
Scenario subtitle	Use as a lubricant in an open system, e.g, penetrating lubricants/greases
2.16.4 Contributing Scenario (4) controlling consumer exposure for PC 24	
Name of contributing scenario	PC 24 Lubricants, Greases and Release Products
Scenario subtitle	Use as a lubricant in an open system, e.g, penetrating lubricants/greases
As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.	

Scenario 17: (Consumer) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways (ATIEL-ATC Group C [c])

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

Description of ES 17

Free short title	(Consumer) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways (ATIEL-ATC Group C [c])

Systematic title based on use descriptor	ERC 8D; PC 24
Name of constributing 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 24 Lubricants, Greases and Release Products PC 24 Lubricants, Greases and Release Products PC 24 Lubricants, Greases and Release Products
2.17.1 Contributing Scenario (1) controlling environmental exposure for ERC 8D	
Operational conditions	
Annual site tonnage	1,000 to/year
Daily amount used at site	0.136986 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	0.500 %
Release fraction to wastewater from process	0.050 %
Release fraction to soil from process	0.010 %
Fraction tonnage to region	10 %
Fraction used at main source	0.050 %
STP	yes
River flow rate	18000 m^3/day
Municipal sewage treatment plant discharge	2000000 L/day
Risk management measures	
SpERC	ATIEL-ATC SPERC 8.Cc.v1 - Covers consumer use of lubricants and greases in open systems, including application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection,
2.17.2 Contributing Scenario (2) controlling consumer exposure for PC 24	
Name of contributing scenario	PC 24 Lubricants, Greases and Release Products
Scenario subtitle	Use as a lubricant in an open system, e.g, penetrating lubricants/greases
2.17.3 Contributing Scenario (3) controlling consumer exposure for PC 24	
Name of contributing scenario	PC 24 Lubricants, Greases and Release Products
Scenario subtitle	Use as a lubricant in an open system, e.g, penetrating lubricants/greases
2.17.4 Contributing Scenario (4) controlling consumer exposure for PC 24	
Name of contributing scenario	PC 24 Lubricants, Greases and Release Products
Scenario subtitle	Use as a lubricant in an open system, e.g, penetrating lubricants/greases
As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.	

Scenario 18: Manufacture of cosmetic products (Manufacture of cosmetic products)

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

Description of ES 18

Free short title	Manufacture of cosmetic products (Manufacture of cosmetic products)
Systematic title based on use descriptor	ERC 2; PROC 1, 2, 3, 5, 8A, 8B, 9, 14, 15
Name of constributing 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 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) PROC 14 - Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC 15 - Use of laboratory reagents in small scale laboratories
2.18.1 Contributing Scenario (1) controlling environmental exposure for ERC 2	
Operational conditions	
Annual site tonnage	400 to/year
Daily amount used at site	1,818.182 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	2.5 %
Release fraction to wastewater from process	0.00333 %
Release fraction to soil from process	0.010 %
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	
SpERC	Manufacture of cosmetic products (Manufacture of cosmetic products)
2.18.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 1 (PC 39)	
Name of contributing scenario	PROC 1 Use in closed process, no likelihood of exposure
Scenario subtitle	Closed process
2.18.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 2 (PC 39)	
Name of contributing scenario	PROC 2 Use in closed, continuous process with occasional controlled exposure
Scenario subtitle	Closed process, controlled exposure
2.18.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 3 (PC 39)	
Name of contributing scenario	PROC 3 Use in closed batch process (synthesis or formulation)
Scenario subtitle	Closed batch process
2.18.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 5 (PC 39)	
Name of contributing scenario	PROC 5 Mixing or blending in batch processes (multistage and/or significant contact)
Scenario subtitle	Mixing or blending in batch process
2.18.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 8A (PC 39)	
Name of contributing scenario	PROC 8a Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Scenario subtitle	Transfer, non dedicated facilities
2.18.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 8B (PC 39)	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Transfer, dedicated facilities
2.18.8 Contributing Scenario (8) controlling industrial worker exposure for PROC 9 (PC 39)	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Transfer into small containers
2.18.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 14 (PC 39)	
Name of contributing scenario	PROC 14 Production of preparations or articles by tabletting, compression, extrusion, pelletisation
Scenario subtitle	Tabletting, compression etc.
2.18.10 Contributing Scenario (10) controlling industrial worker exposure for PROC 15 (PC 39)	
Name of contributing scenario	PROC 15 Use of laboratory reagents in small scale laboratories
Scenario subtitle	Laboratory reagent
As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.	

Scenario 19: End use of cosmetic products (COLIPA U1)

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

Description of ES 19

Free short title	End use of cosmetic products (COLIPA U1)
Systematic title based on use descriptor	ERC 8A; PC 39
Name of constributing environmental scenario and corresponding ERC	ERC 8a Wide dispersive indoor use of processing aids in open systems
Name(s) of contributing consumer scenarios and corresponding PCs/ACs	PC 39 Cosmetics
2.19.1 Contributing Scenario (1) controlling environmental exposure for ERC 8A	
Operational conditions	
Annual site tonnage	360 to/year
Daily amount used at site	0.073973 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	COLIPA SPERC 8a.1.a.v1 - Colipa - Wide Dispersive Use in ‘Down the Drain’ products - hair and skin care products (Consumers and Professionals) Fraction of EU tonnage to region: 0.053 (default: 0.1)
2.19.2 Contributing Scenario (2) controlling consumer exposure for PC 39	
Name of contributing scenario	PC 39 Cosmetics
As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.	

Scenario 20: General Rubber Goods (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, GRG)

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

Description of ES 20

Free short title	General Rubber Goods (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, GRG)

Systematic title based on use descriptor	ERC 3; PROC 8B, 9, 5, 10, 13, 14, 7, 21
Name of constributing environmental scenario and corresponding ERC	ERC 3 Formulation in articles

Name(s) of contributing worker scenarios and corresponding PROCs	PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 8b - Transfer of chemicals from/to vessels/ large containers at 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) PROC 9 - Transfer of chemicals into small containers (dedicated filling line) PROC 9 - Transfer of chemicals into small containers (dedicated filling line) PROC 5 - Mixing or blending in batch processes (multistage and/or significant contact) PROC 9 - Transfer of chemicals into small containers (dedicated filling line) PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 5 - Mixing or blending in batch processes (multistage and/or significant contact) PROC 9 - Transfer of chemicals into small containers (dedicated filling line) PROC 9 - Transfer of chemicals into small containers (dedicated filling line) PROC 10 - Roller application or brushing PROC 13 - Treatment of articles by dipping and pouring PROC 10 - Roller application or brushing PROC 14 - Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC 10 - Roller application or brushing PROC 7 - Industrial spraying PROC 21 - Low energy manipulation of substances in materials and/or articles PROC 14 - Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC 14 - Production of preparations or articles by tabletting, compression, extrusion, pelletisation
2.20.1 Contributing Scenario (1) controlling environmental exposure for ERC 3	
Operational conditions	
Annual site tonnage	1,000 to/year
Daily amount used at site	100 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	0.100 %
Release fraction to wastewater from process	0.008 %
Release fraction to soil from process	0 %
Fraction tonnage to region	100 %
Fraction used at main source	2.2 %
STP	yes
River flow rate	18000 m^3/day
Municipal sewage treatment plant discharge	2000000 L/day
Risk management measures	
SpERC	ETRMA SPERC 3/6d.2a v.2 - Manufacture of Rubber Products: Industrial (SU3, SU11) - GRG use of vulcanization agents, anti-ageing agents / antidegradants
2.20.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 8B (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Filling silos or temporary bins (typically outdoors)

2.20.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 8B (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Filling tanks (indoors or outdoors) - For liquids
2.20.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 8B (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Filling tanks (indoors or outdoors) - For liquids
2.20.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 9 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Transferring substances into small containers Solids (typically indoors); Storage in closed, dust sealed cargo bins Big bag (typically indoors)
2.20.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 9 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Storage and packaging transfer into tanks and drums Liquids (typically indoors)
2.20.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 9 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Weighting substances by hand or automatically in a dose bin. Example : small container at balance containing plastic bags
2.20.8 Contributing Scenario (8) controlling industrial worker exposure for PROC 5 (PC 9a, PC 18, PC 24, PC 32)	

Name of contributing scenario	PROC 5 Mixing or blending in batch processes (multistage and/or significant contact)
Scenario subtitle	Grinding in jars or other grinding machines. Ingredients added manually or automatically. Dispersion poured into containers
2.20.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 9 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Manual metering, weighting possible, mainly synthetic rubbers and mixtures; Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans
2.20.10 Contributing Scenario (10) controlling industrial worker exposure for PROC 8B (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Automatic substance metering , feeding into mixing unit Solids Ex. CB, Si
2.20.11 Contributing Scenario (11) controlling industrial worker exposure for PROC 8B (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils
2.20.12 Contributing Scenario (12) controlling industrial worker exposure for PROC 5 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 5 Mixing or blending in batch processes (multistage and/or significant contact)
Scenario subtitle	Mixing in closed mixing unit (i.e. Banbury mixer); Open mill mixing; Steering mill dispersing
2.20.13 Contributing Scenario (13) controlling industrial worker exposure for PROC 9 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Intermediate compound storage
2.20.14 Contributing Scenario (14) controlling industrial worker exposure for PROC 9 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Compound transfer into a vessel, mixing and transfering cement into portable drums; Transferring cement into portable drums
2.20.15 Contributing Scenario (15) controlling industrial worker exposure for PROC 10 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 10 Roller application or brushing
Scenario subtitle	Drying and/or solvents evaporation
2.20.16 Contributing Scenario (16) controlling industrial worker exposure for PROC 13 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 13 Treatment of articles by dipping and pouring
Scenario subtitle	Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation
2.20.17 Contributing Scenario (17) controlling industrial worker exposure for PROC 10 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 10 Roller application or brushing
Scenario subtitle	Cement and paint application
2.20.18 Contributing Scenario (18) controlling industrial worker exposure for PROC 14 (PC 9a, PC 18, PC 24, PC 32)	

Name of contributing scenario	PROC 14 Production of preparations or articles by tabletting, compression, extrusion, pelletisation
Scenario subtitle	Compound processing; Cooling extruded compound; Feeding from stock, milling, and feeding the calendar
2.20.19 Contributing Scenario (19) controlling industrial worker exposure for PROC 10 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 10 Roller application or brushing
Scenario subtitle	Cement application
2.20.20 Contributing Scenario (20) controlling industrial worker exposure for PROC 7 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 7 Industrial spraying
Scenario subtitle	Treatment with releasing agents Applied on tyre (cold); Equipment treatment with manual application of releasing agents on surfaces. Applied on mould (warm)
2.20.21 Contributing Scenario (21) controlling industrial worker exposure for PROC 21 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 21 Low energy manipulation of substances in materials and/or articles
Scenario subtitle	Compound assembling from stocks
2.20.22 Contributing Scenario (22) controlling industrial worker exposure for PROC 14 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 14 Production of preparations or articles by tabletting, compression, extrusion, pelletisation
Scenario subtitle	Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)
2.20.23 Contributing Scenario (23) controlling industrial worker exposure for PROC 14 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 14 Production of preparations or articles by tabletting, compression, extrusion, pelletisation
Scenario subtitle	Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)
As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.	

Scenario 21: General Rubber Goods (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, GRG)

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

Description of ES 21

Free short title	General Rubber Goods (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, GRG)
Systematic title based on use descriptor	ERC 4; PROC 8B, 9, 5, 10, 13, 14, 7, 21
Name of constributing environmental scenario and corresponding ERC	ERC 4 Industrial use of processing aids

Name(s) of contributing worker scenarios and corresponding PROCs	PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 8b - Transfer of chemicals from/to vessels/ large containers at 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) PROC 9 - Transfer of chemicals into small containers (dedicated filling line) PROC 9 - Transfer of chemicals into small containers (dedicated filling line) PROC 5 - Mixing or blending in batch processes (multistage and/or significant contact) PROC 9 - Transfer of chemicals into small containers (dedicated filling line) PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 5 - Mixing or blending in batch processes (multistage and/or significant contact) PROC 9 - Transfer of chemicals into small containers (dedicated filling line) PROC 9 - Transfer of chemicals into small containers (dedicated filling line) PROC 10 - Roller application or brushing PROC 13 - Treatment of articles by dipping and pouring PROC 10 - Roller application or brushing PROC 14 - Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC 10 - Roller application or brushing PROC 7 - Industrial spraying PROC 21 - Low energy manipulation of substances in materials and/or articles PROC 14 - Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC 14 - Production of preparations or articles by tabletting, compression, extrusion, pelletisation
2.21.1 Contributing Scenario (1) controlling environmental exposure for ERC 4	
Operational conditions	
Annual site tonnage	1,000 to/year
Daily amount used at site	3,333.333 kg/day
Release times per year	300 days/year
Local freshwater dilution factor	10
Local marine water dilution factor	100
Release fraction to air from process	1 %

Release fraction to wastewater from process	0.001 %
Release fraction to soil from process	0.010 %
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	
SpERC	ESVOC SpERC 4.19.v1 - Rubber production and processing: Industrial (SU10)
2.21.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 8B (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Filling silos or temporary bins (typically outdoors)
2.21.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 8B (PC 9a, PC 18, PC 24, PC 32)	

Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Filling tanks (indoors or outdoors) - For liquids
2.21.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 8B (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Filling tanks (indoors or outdoors) - For liquids
2.21.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 9 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Transferring substances into small containers Solids (typically indoors); Storage in closed, dust sealed cargo bins Big bag (typically indoors)
2.21.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 9 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Storage and packaging transfer into tanks and drums Liquids (typically indoors)
2.21.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 9 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Weighting substances by hand or automatically in a dose bin. Example : small container at balance containing plastic bags
2.21.8 Contributing Scenario (8) controlling industrial worker exposure for PROC 5 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 5 Mixing or blending in batch processes (multistage and/or significant contact)
Scenario subtitle	Grinding in jars or other grinding machines. Ingredients added manually or automatically. Dispersion poured into containers
2.21.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 9 (PC 9a, PC 18, PC 24, PC 32)	

Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Manual metering, weighting possible, mainly synthetic rubbers and mixtures; Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans
2.21.10 Contributing Scenario (10) controlling industrial worker exposure for PROC 8B (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Automatic substance metering , feeding into mixing unit Solids Ex. CB, Si
2.21.11 Contributing Scenario (11) controlling industrial worker exposure for PROC 8B (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils
2.21.12 Contributing Scenario (12) controlling industrial worker exposure for PROC 5 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 5 Mixing or blending in batch processes (multistage and/or significant contact)
Scenario subtitle	Mixing in closed mixing unit (i.e. Banbury mixer); Open mill mixing; Steering mill dispersing
2.21.13 Contributing Scenario (13) controlling industrial worker exposure for PROC 9 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Intermediate compound storage
2.21.14 Contributing Scenario (14) controlling industrial worker exposure for PROC 9 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Compound transfer into a vessel, mixing and transfering cement into portable drums; Transferring cement into portable drums
2.21.15 Contributing Scenario (15) controlling industrial worker exposure for PROC 10 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 10 Roller application or brushing
Scenario subtitle	Drying and/or solvents evaporation
2.21.16 Contributing Scenario (16) controlling industrial worker exposure for PROC 13 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 13 Treatment of articles by dipping and pouring
Scenario subtitle	Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation
2.21.17 Contributing Scenario (17) controlling industrial worker exposure for PROC 10 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 10 Roller application or brushing
Scenario subtitle	Cement and paint application
2.21.18 Contributing Scenario (18) controlling industrial worker exposure for PROC 14 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 14 Production of preparations or articles by tabletting, compression, extrusion, pelletisation
Scenario subtitle	Compound processing; Cooling extruded compound; Feeding from stock, milling, and feeding the calendar
2.21.19 Contributing Scenario (19) controlling industrial worker exposure for PROC 10 (PC 9a, PC 18, PC 24, PC 32)	

Name of contributing scenario	PROC 10 Roller application or brushing
Scenario subtitle	Cement application
2.21.20 Contributing Scenario (20) controlling industrial worker exposure for PROC 7 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 7 Industrial spraying
Scenario subtitle	Treatment with releasing agents Applied on tyre (cold); Equipment treatment with manual application of releasing agents on surfaces. Applied on mould (warm)
2.21.21 Contributing Scenario (21) controlling industrial worker exposure for PROC 21 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 21 Low energy manipulation of substances in materials and/or articles
Scenario subtitle	Compound assembling from stocks
2.21.22 Contributing Scenario (22) controlling industrial worker exposure for PROC 14 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 14 Production of preparations or articles by tabletting, compression, extrusion, pelletisation
Scenario subtitle	Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)
2.21.23 Contributing Scenario (23) controlling industrial worker exposure for PROC 14 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 14 Production of preparations or articles by tabletting, compression, extrusion, pelletisation
Scenario subtitle	Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)
As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.	

Scenario 22: General Rubber Goods (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, GRG)

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

Description of ES 22

Free short title	General Rubber Goods (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, GRG)
Systematic title based on use descriptor	ERC 6D; PROC 8B, 9, 5, 10, 13, 14, 7, 21
Name of constributing environmental scenario and corresponding ERC	ERC 6d Production of resins/rubbers

Name(s) of contributing worker scenarios and corresponding PROCs	PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 8b - Transfer of chemicals from/to vessels/ large containers at 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) PROC 9 - Transfer of chemicals into small containers (dedicated filling line) PROC 9 - Transfer of chemicals into small containers (dedicated filling line) PROC 5 - Mixing or blending in batch processes (multistage and/or significant contact) PROC 9 - Transfer of chemicals into small containers (dedicated filling line) PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 5 - Mixing or blending in batch processes (multistage and/or significant contact) PROC 9 - Transfer of chemicals into small containers (dedicated filling line) PROC 9 - Transfer of chemicals into small containers (dedicated filling line) PROC 10 - Roller application or brushing PROC 13 - Treatment of articles by dipping and pouring PROC 10 - Roller application or brushing PROC 14 - Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC 10 - Roller application or brushing PROC 7 - Industrial spraying PROC 21 - Low energy manipulation of substances in materials and/or articles PROC 14 - Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC 14 - Production of preparations or articles by tabletting, compression, extrusion, pelletisation
2.22.1 Contributing Scenario (1) controlling environmental exposure for ERC 6D	
Operational conditions	
Annual site tonnage	1,000 to/year
Daily amount used at site	100 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	0.100 %

Release fraction to wastewater from process	0.008 %
Release fraction to soil from process	0 %
Fraction tonnage to region	100 %
Fraction used at main source	2.2 %
STP	yes
River flow rate	18000 m^3/day
Municipal sewage treatment plant discharge	2000000 L/day
Risk management measures	
SpERC	ETRMA SPERC 3/6d.2a v.2 - Manufacture of Rubber Products: Industrial (SU3, SU11) - GRG use of vulcanization agents, anti-ageing agents / antidegradants
2.22.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 8B (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Filling silos or temporary bins (typically outdoors)

2.22.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 8B (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Filling tanks (indoors or outdoors) - For liquids
2.22.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 8B (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Filling tanks (indoors or outdoors) - For liquids
2.22.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 9 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Transferring substances into small containers Solids (typically indoors); Storage in closed, dust sealed cargo bins Big bag (typically indoors)
2.22.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 9 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Storage and packaging transfer into tanks and drums Liquids (typically indoors)
2.22.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 9 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Weighting substances by hand or automatically in a dose bin. Example : small container at balance containing plastic bags
2.22.8 Contributing Scenario (8) controlling industrial worker exposure for PROC 5 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 5 Mixing or blending in batch processes (multistage and/or significant contact)
Scenario subtitle	Grinding in jars or other grinding machines. Ingredients added manually or automatically. Dispersion poured into containers

2.22.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 9 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Manual metering, weighting possible, mainly synthetic rubbers and mixtures; Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans
2.22.10 Contributing Scenario (10) controlling industrial worker exposure for PROC 8B (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Automatic substance metering , feeding into mixing unit Solids Ex. CB, Si
2.22.11 Contributing Scenario (11) controlling industrial worker exposure for PROC 8B (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils
2.22.12 Contributing Scenario (12) controlling industrial worker exposure for PROC 5 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 5 Mixing or blending in batch processes (multistage and/or significant contact)
Scenario subtitle	Mixing in closed mixing unit (i.e. Banbury mixer); Open mill mixing; Steering mill dispersing
2.22.13 Contributing Scenario (13) controlling industrial worker exposure for PROC 9 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Intermediate compound storage
2.22.14 Contributing Scenario (14) controlling industrial worker exposure for PROC 9 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Compound transfer into a vessel, mixing and transfering cement into portable drums; Transferring cement into portable drums
2.22.15 Contributing Scenario (15) controlling industrial worker exposure for PROC 10 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 10 Roller application or brushing
Scenario subtitle	Drying and/or solvents evaporation
2.22.16 Contributing Scenario (16) controlling industrial worker exposure for PROC 13 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 13 Treatment of articles by dipping and pouring
Scenario subtitle	Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation
2.22.17 Contributing Scenario (17) controlling industrial worker exposure for PROC 10 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 10 Roller application or brushing
Scenario subtitle	Cement and paint application
2.22.18 Contributing Scenario (18) controlling industrial worker exposure for PROC 14 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 14 Production of preparations or articles by tabletting, compression, extrusion, pelletisation
Scenario subtitle	Compound processing; Cooling extruded compound; Feeding from stock, milling, and feeding the calendar

2.22.19 Contributing Scenario (19) controlling industrial worker exposure for PROC 10 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 10 Roller application or brushing
Scenario subtitle	Cement application
2.22.20 Contributing Scenario (20) controlling industrial worker exposure for PROC 7 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 7 Industrial spraying
Scenario subtitle	Treatment with releasing agents Applied on tyre (cold); Equipment treatment with manual application of releasing agents on surfaces. Applied on mould (warm)
2.22.21 Contributing Scenario (21) controlling industrial worker exposure for PROC 21 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 21 Low energy manipulation of substances in materials and/or articles
Scenario subtitle	Compound assembling from stocks
2.22.22 Contributing Scenario (22) controlling industrial worker exposure for PROC 14 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 14 Production of preparations or articles by tabletting, compression, extrusion, pelletisation
Scenario subtitle	Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)
2.22.23 Contributing Scenario (23) controlling industrial worker exposure for PROC 14 (PC 9a, PC 18, PC 24, PC 32)	
Name of contributing scenario	PROC 14 Production of preparations or articles by tabletting, compression, extrusion, pelletisation
Scenario subtitle	Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)
As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.	

Scenario 23: General Rubber Goods_Article Service Life (GRG, GRG1)

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

Description of ES 23

Free short title	General Rubber Goods_Article Service Life (GRG, GRG1)
Systematic title based on use descriptor	ERC 11A; PC 9a, 24, 32
Name of constributing environmental scenario and corresponding ERC	ERC 11a Wide dispersive indoor use of longlife articles and materials with low release
Name(s) of contributing consumer scenarios and corresponding PCs/ACs	PC 9a Coatings and Paints, thinners, paint removers PC 24 Lubricants, Greases and Release Products PC 24 Lubricants, Greases and Release Products PC 32 Polymer Preparations and Compounds
2.23.1 Contributing Scenario (1) controlling environmental exposure for ERC 11A	
Operational conditions	
Annual site tonnage	1,000 to/year

Daily amount used at site	0.547945 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	0.050 %
Release fraction to wastewater from process	0.050 %
Release fraction to soil from process	0 %
Fraction tonnage to region	10 %

Fraction used at main source	0.200 %
STP	yes
River flow rate	18000 m^3/day
Municipal sewage treatment plant discharge	2000000 L/day
2.23.2 Contributing Scenario (2) controlling consumer exposure for PC 9a	
Name of contributing scenario	PC 9a Coatings and paints, thinners, paint removers
Scenario subtitle	Filling silos or temporary bins (typically outdoors), Filling tanks (indoors or outdoors) - For liquids; Transferring substances into small containers Solids (typically indoors); Storage in closed, dust sealed cargo bins Big bag (typically indoors); Storage and packaging transfer into tanks and drums Liquids (typically indoors); Weighting substances by hand or automatically in a dose bin. Example : small container at balance containing plastic bags; Grinding in jars or other grinding machines. Ingredients added manually or automatically. Dispersion poured into containers; Manual metering, weighting possible, mainly synthetic rubbers and mixtures; Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans; Automatic substance metering , feeding into mixing unit Solids Ex. CB, Si; Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils; Mixing in closed mixing unit (i.e. Banbury mixer); Open mill mixing; Steering mill dispersing; Intermediate compound storage; Compound transfer into a vessel, mixing and transfering cement into portable drums; Transferring cement into portable drums; Drying and/or solvents evaporation; Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation; Cement and paint application; Compound processing; Cooling extruded compound; Feeding from stock, milling, and feeding the calendar; Treatment with releasing agents Applied on tyre (cold); Equipment treatment with manual application of releasing agents on surfaces. Applied on mould (warm); Compound assembling from stocks; Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)
2.23.3 Contributing Scenario (3) controlling consumer exposure for PC 24	
Name of contributing scenario	PC 24 Lubricants, Greases and Release Products

Scenario subtitle	Filling silos or temporary bins (typically outdoors), Filling tanks (indoors or outdoors) - For liquids; Transferring substances into small containers Solids (typically indoors); Storage in closed, dust sealed cargo bins Big bag (typically indoors); Storage and packaging transfer into tanks and drums Liquids (typically indoors); Weighting substances by hand or automatically in a dose bin. Example : small container at balance containing plastic bags; Grinding in jars or other grinding machines. Ingredients added manually or automatically. Dispersion poured into containers; Manual metering, weighting possible, mainly synthetic rubbers and mixtures; Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans; Automatic substance metering , feeding into mixing unit Solids Ex. CB, Si; Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils; Mixing in closed mixing unit (i.e. Banbury mixer); Open mill mixing; Steering mill dispersing; Intermediate compound storage; Compound transfer into a vessel, mixing and transfering cement into portable drums; Transferring cement into portable drums; Drying and/or solvents evaporation; Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation; Cement and paint application; Compound processing; Cooling extruded compound; Feeding from stock, milling, and feeding the calendar; Treatment with releasing agents Applied on tyre (cold); Equipment treatment with manual application of releasing agents on surfaces. Applied on mould (warm); Compound assembling from stocks; Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)
2.23.4 Contributing Scenario (4) controlling consumer exposure for PC 24	
Name of contributing scenario	PC 24 Lubricants, Greases and Release Products
Scenario subtitle	Filling silos or temporary bins (typically outdoors), Filling tanks (indoors or outdoors) - For liquids; Transferring substances into small containers Solids (typically indoors); Storage in closed, dust sealed cargo bins Big bag (typically indoors); Storage and packaging transfer into tanks and drums Liquids (typically indoors); Weighting substances by hand or automatically in a dose bin. Example : small container at balance containing plastic bags; Grinding in jars or other grinding machines. Ingredients added manually or automatically. Dispersion poured into containers; Manual metering, weighting possible, mainly synthetic rubbers and mixtures; Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans; Automatic substance metering , feeding into mixing unit Solids Ex. CB, Si; Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils; Mixing in closed mixing unit (i.e. Banbury mixer); Open mill mixing; Steering mill dispersing; Intermediate compound storage; Compound transfer into a vessel, mixing and transfering cement into portable drums; Transferring cement into portable drums; Drying and/or solvents evaporation; Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation; Cement and paint application; Compound processing; Cooling extruded compound; Feeding from stock, milling, and feeding the calendar; Treatment with releasing agents Applied on tyre (cold); Equipment treatment with manual application of releasing agents on surfaces. Applied on mould (warm); Compound assembling from stocks; Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)
2.23.5 Contributing Scenario (5) controlling consumer exposure for PC 32	
Name of contributing scenario	PC 32 Polymer Preparations and Compounds
Scenario subtitle	Filling silos or temporary bins (typically outdoors), Filling tanks (indoors or outdoors) - For liquids; Transferring substances into small containers Solids (typically indoors); Storage in closed, dust sealed cargo bins Big bag (typically indoors); Storage and packaging transfer into tanks and drums Liquids (typically indoors); Weighting substances by hand or automatically in a dose bin. Example : small container at balance containing plastic bags; Grinding in jars or other grinding machines. Ingredients added manually or automatically. Dispersion poured into containers; Manual metering, weighting possible, mainly synthetic rubbers and mixtures; Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans; Automatic substance metering , feeding into mixing unit Solids Ex. CB, Si; Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils; Mixing in closed mixing unit (i.e. Banbury mixer); Open mill mixing; Steering mill dispersing; Intermediate compound storage; Compound transfer into a vessel, mixing and transfering cement into portable drums; Transferring cement into portable drums; Drying and/or solvents evaporation; Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation; Cement and paint application; Compound processing; Cooling extruded compound; Feeding from stock, milling, and feeding the calendar; Treatment with releasing agents Applied on tyre (cold); Equipment treatment with manual application of releasing agents on surfaces. Applied on mould (warm); Compound assembling from stocks; Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)

As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.

Scenario 24: General Rubber Goods_Article Service Life (GRG, GRG1)

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

Description of ES 24

Free short title	General Rubber Goods_Article Service Life (GRG, GRG1)
Systematic title based on use descriptor	ERC 11A; PC 9a, 24, 32
Name of constributing environmental scenario and corresponding ERC	ERC 11a Wide dispersive indoor use of longlife articles and materials with low release
Name(s) of contributing consumer scenarios and corresponding PCs/ACs	PC 9a Coatings and Paints, thinners, paint removers PC 24 Lubricants, Greases and Release Products PC 24 Lubricants, Greases and Release Products PC 32 Polymer Preparations and Compounds
2.24.1 Contributing Scenario (1) controlling environmental exposure for ERC 11A	
Operational conditions	
Annual site tonnage	1,000 to/year
Daily amount used at site	0.547945 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	0.050 %
Release fraction to wastewater from process	0.050 %
Release fraction to soil from process	0 %
Fraction tonnage to region	10 %
Fraction used at main source	0.200 %
STP	yes
River flow rate	18000 m^3/day
Municipal sewage treatment plant discharge	2000000 L/day
2.24.2 Contributing Scenario (2) controlling consumer exposure for PC 9a	
Name of contributing scenario	PC 9a Coatings and paints, thinners, paint removers

Scenario subtitle	Filling silos or temporary bins (typically outdoors), Filling tanks (indoors or outdoors) - For liquids; Transferring substances into small containers Solids (typically indoors); Storage in closed, dust sealed cargo bins Big bag (typically indoors); Storage and packaging transfer into tanks and drums Liquids (typically indoors); Weighting substances by hand or automatically in a dose bin. Example : small container at balance containing plastic bags; Grinding in jars or other grinding machines. Ingredients added manually or automatically. Dispersion poured into containers; Manual metering, weighting possible, mainly synthetic rubbers and mixtures; Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans; Automatic substance metering , feeding into mixing unit Solids Ex. CB, Si; Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils; Mixing in closed mixing unit (i.e. Banbury mixer); Open mill mixing; Steering mill dispersing; Intermediate compound storage; Compound transfer into a vessel, mixing and transfering cement into portable drums; Transferring cement into portable drums; Drying and/or solvents evaporation; Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation; Cement and paint application; Compound processing; Cooling extruded compound; Feeding from stock, milling, and feeding the calendar; Treatment with releasing agents Applied on tyre (cold); Equipment treatment with manual application of releasing agents on surfaces. Applied on mould (warm); Compound assembling from stocks; Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)
2.24.3 Contributing Scenario (3) controlling consumer exposure for PC 24	
Name of contributing scenario	PC 24 Lubricants, Greases and Release Products
Scenario subtitle	Filling silos or temporary bins (typically outdoors), Filling tanks (indoors or outdoors) - For liquids; Transferring substances into small containers Solids (typically indoors); Storage in closed, dust sealed cargo bins Big bag (typically indoors); Storage and packaging transfer into tanks and drums Liquids (typically indoors); Weighting substances by hand or automatically in a dose bin. Example : small container at balance containing plastic bags; Grinding in jars or other grinding machines. Ingredients added manually or automatically. Dispersion poured into containers; Manual metering, weighting possible, mainly synthetic rubbers and mixtures; Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans; Automatic substance metering , feeding into mixing unit Solids Ex. CB, Si; Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils; Mixing in closed mixing unit (i.e. Banbury mixer); Open mill mixing; Steering mill dispersing; Intermediate compound storage; Compound transfer into a vessel, mixing and transfering cement into portable drums; Transferring cement into portable drums; Drying and/or solvents evaporation; Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation; Cement and paint application; Compound processing; Cooling extruded compound; Feeding from stock, milling, and feeding the calendar; Treatment with releasing agents Applied on tyre (cold); Equipment treatment with manual application of releasing agents on surfaces. Applied on mould (warm); Compound assembling from stocks; Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)
2.24.4 Contributing Scenario (4) controlling consumer exposure for PC 24	
Name of contributing scenario	PC 24 Lubricants, Greases and Release Products
Scenario subtitle	Filling silos or temporary bins (typically outdoors), Filling tanks (indoors or outdoors) - For liquids; Transferring substances into small containers Solids (typically indoors); Storage in closed, dust sealed cargo bins Big bag (typically indoors); Storage and packaging transfer into tanks and drums Liquids (typically indoors); Weighting substances by hand or automatically in a dose bin. Example : small container at balance containing plastic bags; Grinding in jars or other grinding machines. Ingredients added manually or automatically. Dispersion poured into containers; Manual metering, weighting possible, mainly synthetic rubbers and mixtures; Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans; Automatic substance metering , feeding into mixing unit Solids Ex. CB, Si; Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils; Mixing in closed mixing unit (i.e. Banbury mixer); Open mill mixing; Steering mill dispersing; Intermediate compound storage; Compound transfer into a vessel, mixing and transfering cement into portable drums; Transferring cement into portable drums; Drying and/or solvents evaporation; Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation; Cement and paint application; Compound processing; Cooling extruded compound; Feeding from stock, milling, and feeding the calendar; Treatment with releasing agents Applied on tyre (cold); Equipment treatment with manual application of releasing agents on surfaces. Applied on mould (warm); Compound assembling from stocks; Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)

2.24.5 Contributing Scenario (5) controlling consumer exposure for PC 32	
Name of contributing scenario	PC 32 Polymer Preparations and Compounds
Scenario subtitle	Filling silos or temporary bins (typically outdoors), Filling tanks (indoors or outdoors) - For liquids; Transferring substances into small containers Solids (typically indoors); Storage in closed, dust sealed cargo bins Big bag (typically indoors); Storage and packaging transfer into tanks and drums Liquids (typically indoors); Weighting substances by hand or automatically in a dose bin. Example : small container at balance containing plastic bags; Grinding in jars or other grinding machines. Ingredients added manually or automatically. Dispersion poured into containers; Manual metering, weighting possible, mainly synthetic rubbers and mixtures; Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans; Automatic substance metering , feeding into mixing unit Solids Ex. CB, Si; Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils; Mixing in closed mixing unit (i.e. Banbury mixer); Open mill mixing; Steering mill dispersing; Intermediate compound storage; Compound transfer into a vessel, mixing and transfering cement into portable drums; Transferring cement into portable drums; Drying and/or solvents evaporation; Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation; Cement and paint application; Compound processing; Cooling extruded compound; Feeding from stock, milling, and feeding the calendar; Treatment with releasing agents Applied on tyre (cold); Equipment treatment with manual application of releasing agents on surfaces. Applied on mould (warm); Compound assembling from stocks; Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)
As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.	

Scenario 25: Distribution (FECC 1.1, FECC 1.2, FECC 1.3, FECC 1.4)

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

Description of ES 25

Free short title	Distribution (FECC 1.1, FECC 1.2, FECC 1.3, FECC 1.4)
Systematic title based on use descriptor	ERC 2; PROC 8A, 8B, 1, 9, 2
Name of constributing environmental scenario and corresponding ERC	ERC 2 Formulation of preparations
Name(s) of contributing worker scenarios and corresponding PROCs	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 1 - Use in closed process, no likelihood of exposure PROC 9 - Transfer of chemicals into small containers (dedicated filling line) PROC 2 - Use in closed, continuous process with occasional controlled exposure
2.25.1 Contributing Scenario (1) controlling environmental exposure for ERC 2	
Operational conditions	
Annual site tonnage	1,000 to/year
Daily amount used at site	6.667 kg/day
Release times per year	300 days/year
Local freshwater dilution factor	10
Local marine water dilution factor	100

Release fraction to air from process	0.001 %
Release fraction to wastewater from process	1.00E-5 %
Release fraction to soil from process	0 %
Fraction tonnage to region	100 %
Fraction used at main source	0.200 %
STP	yes
River flow rate	18000 m^3/day
Municipal sewage treatment plant discharge	2000000 L/day
Risk management measures	
SpERC	ESVOC SpERC 1.1b.v1 - Distribution: Industrial (SU3)
2.25.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 8A	
Name of contributing scenario	PROC 8a Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Scenario subtitle	Uploading / unloading
2.25.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 8B	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	Uploading / unloading
2.25.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 1	
Name of contributing scenario	PROC 1 Use in closed process, no likelihood of exposure
Scenario subtitle	StoringUploading / unloading Forwarding (closed System)
2.25.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 9	
Name of contributing scenario	PROC 9 Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	Repacking
2.25.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 2	
Name of contributing scenario	PROC 2 Use in closed, continuous process with occasional controlled exposure
Scenario subtitle	Sampling
As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.	

Scenario 26: Distribution;Q Controlling (FECC 1.6)

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

Description of ES 26

Free short title	Distribution;Q Controlling (FECC 1.6)
Systematic title based on use descriptor	ERC 8B; PROC 15

Name of constributing environmental scenario and corresponding ERC	ERC 8b Wide dispersive indoor use of reactive substances in open systems
Name(s) of contributing worker scenarios and corresponding PROCs	PROC 15 - Use of laboratory reagents in small scale laboratories
2.26.1 Contributing Scenario (1) controlling environmental exposure for ERC 8B	
Operational conditions	
Annual site tonnage	1,000 to/year
Daily amount used at site	0.547945 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	0.100 %
Release fraction to wastewater from process	2 %
Release fraction to soil from process	0 %
Fraction tonnage to region	10 %
Fraction used at main source	0.200 %
STP	yes
River flow rate	18000 m^3/day
Municipal sewage treatment plant discharge	2000000 L/day
2.26.2 Contributing Scenario (2) controlling professional worker exposure for PROC 15	
Name of contributing scenario	PROC 15 Use of laboratory reagents in small scale laboratories
Scenario subtitle	Q Controlling
As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.	

Scenario 27: Formulating (FECC 2.1, FECC 2.2, FECC 2.3, FECC 2.4)

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

Description of ES 27

Free short title	Formulating (FECC 2.1, FECC 2.2, FECC 2.3, FECC 2.4)
Systematic title based on use descriptor	ERC 2; PROC 3, 4, 5, 14
Name of constributing environmental scenario and corresponding ERC	ERC 2 Formulation of preparations
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 14 - Production of preparations or articles by tabletting, compression, extrusion, pelletisation
2.27.1 Contributing Scenario (1) controlling environmental exposure for ERC 2	
Operational conditions	
Annual site tonnage	1,000 to/year
Daily amount used at site	3,333.333 kg/day
Release times per year	300 days/year
Local freshwater dilution factor	10
Local marine water dilution factor	100
Release fraction to air from process	0.250 %
Release fraction to wastewater from process	0.0005 %
Release fraction to soil from process	0.010 %
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	
SpERC	ESVOC SpERC 2.2.v1 - Formulation & packing of preparations and mixtures: Industrial (SU10)
2.27.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 3	
Name of contributing scenario	PROC 3 Use in closed batch process (synthesis or formulation)
Scenario subtitle	Closed System Mixing
2.27.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 4	
Name of contributing scenario	PROC 4 Use in batch and other process (synthesis) where opportunity for exposure arises
Scenario subtitle	Batch Mixing : Limited Exposure
2.27.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 5	
Name of contributing scenario	PROC 5 Mixing or blending in batch processes (multistage and/or significant contact)
Scenario subtitle	Batch Mixing : Significant Contact
2.27.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 14	
Name of contributing scenario	PROC 14 Production of preparations or articles by tabletting, compression, extrusion, pelletisation

Scenario subtitle	Compressing, Extruding, Tabletting
As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.	

Scenario 28: Manufacturing (Manufacturing)

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

Description of ES 28

Free short title	Manufacturing (Manufacturing)
Systematic title based on use descriptor	ERC 1; PROC 1, 2, 3, 4, 8B, 15, 8A
Name of constributing environmental scenario and corresponding ERC	ERC 1 Production of chemicals

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 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 15 - Use of laboratory reagents in small scale laboratories PROC 8b - Transfer of chemicals from/to vessels/ large containers at dedicated facilities PROC 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities PROC 2 - Use in closed, continuous process with occasional controlled exposure
2.28.1 Contributing Scenario (1) controlling environmental exposure for ERC 1	
Operational conditions	
Annual site tonnage	1,000 to/year
Daily amount used at site	3,333.333 kg/day
Release times per year	300 days/year
Local freshwater dilution factor	10
Local marine water dilution factor	100
Release fraction to air from process	0.000025 %
Release fraction to wastewater from process	0.00005 %
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	
SpERC	GES FEUC - Manufacturing (GES FEUC - Manufacturing)
2.28.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 1 (PC NA)	
Name of contributing scenario	PROC 1 Use in closed process, no likelihood of exposure
Scenario subtitle	- General process exposures (no sampling) - continuous (closed system)
2.28.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 2 (PC NA)	
Name of contributing scenario	PROC 2 Use in closed, continuous process with occasional controlled exposure
Scenario subtitle	- General process exposures and sample collection - continuous (closed system with occasional controlled exposure)
2.28.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 3 (PC NA)	
Name of contributing scenario	PROC 3 Use in closed batch process (synthesis or formulation)
Scenario subtitle	- General process exposures - batch (closed system)
2.28.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 4 (PC NA)	
Name of contributing scenario	PROC 4 Use in batch and other process (synthesis) where opportunity for exposure arises
Scenario subtitle	- General exposures open batch process
2.28.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 8B (PC NA)	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	- Sample collection
2.28.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 15 (PC NA)	
Name of contributing scenario	PROC 15 Use of laboratory reagents in small scale laboratories
Scenario subtitle	- Laboratory activities
2.28.8 Contributing Scenario (8) controlling industrial worker exposure for PROC 8B (PC NA)	
Name of contributing scenario	PROC 8b Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	- Bulk transfers including loading/unloading of road cars etc
2.28.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 8A (PC NA)	
Name of contributing scenario	PROC 8a Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Scenario subtitle	- Clean down and Maintenance
2.28.10 Contributing Scenario (10) controlling industrial worker exposure for PROC 2 (PC NA)	
Name of contributing scenario	PROC 2 Use in closed, continuous process with occasional controlled exposure
Scenario subtitle	- Material storage
As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.	

RISK CHARACTERISATION

The scenarios described in chapter 2 ff result in an exposure of environment, workers and consumers. In order to determine if this specific exposure is safe for a specific scenario, the exposure is put into relation to the corresponding indicative reference value (e.g. DNEL, PNEC). The resulting risk characterisation ratio (RCR) indicates if the specific scenario is safe or not. In addition to individual exposure estimates also exposure from combined routes and compartments are displayed, as well as combined exposure from different scenarios.

1.1 Scenario 1: (Industrial) Handling and dilution of metalworking fluid concentrates (ATIEL-ATC Group E [i])

The following RCR calculations refer to the contributing scenarios described in chapter 2.1

1.1.1 Contributing Scenario (1) controlling environmental exposure for ERC2 *(Industrial) Handling and dilution of metalworking fluid concentrates*

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.1.1.1 Aquatic compartment (including sediment)

Table 1.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Freshwater	2.21E-6 mg/L	0.0005 mg/L	0.004429	7.53E5
Freshwater sediment	0.000143 mg/kg$_{dwt}$	0.0348 mg/kg$_{dwt}$	0.004104	8.12E5
Marine water	2.13E-7 mg/L	0.00005 mg/L	0.004264	7.82E5
Marine water sediment	0.000014 mg/kg$_{dwt}$	0.0035 mg/kg$_{dwt}$	0.003929	8.48E5

1.1.1.2 Terrestrial compartment

Table 2.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Agricultural soil	0.000019 mg/kg$_{dwt}$	0.293 mg/kg$_{dwt}$	0.000064	4.45E7
Grassland	0.000022 mg/kg$_{dwt}$	0.293 mg/kg$_{dwt}$	0.000075	-

1.1.1.3 Microbiological activity in sewage treatment systems

Table 3.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
STP	4.45E-10 mg/L	100 mg/L	4.45E-12	7.49E14

1.1.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 5

(Industrial) Handling and dilution of metalworking fluid concentrates Add concentrate to water tank by pouring from small container

Table 4.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.1.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 8B

(Industrial) Handling and dilution of metalworking fluid concentrates Add concentrate to water tank by pouring from small container

Table 5.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

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

(Industrial) Handling and dilution of metalworking fluid concentrates Add concentrate to water tank by pumping from drum or tank via mixer

Table 6.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

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

(Industrial) Handling and dilution of metalworking fluid concentrates Add concentrate to water tank by pumping from drum or tank via mixer

Table 7.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

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

(Industrial) Handling and dilution of metalworking fluid concentrates Sample the solution to test concentration

Table 8.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.1.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 8B

(Industrial) Handling and dilution of metalworking fluid concentrates Disposal of waste product & used containers

Table 9.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.1.8 Contributing Scenario (8) controlling industrial worker exposure for PROC 1

(Industrial) Handling and dilution of metalworking fluid concentrates Material storage

Table 10.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.1.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 2

(Industrial) Handling and dilution of metalworking fluid concentrates Material storage

Table 11.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.2 Scenario 2: General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) (ATIEL-ATC Group B [i])

The following RCR calculations refer to the contributing scenarios described in chapter 2.2

1.2.1 Contributing Scenario (1) controlling environmental exposure for ERC4

General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines)

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.2.1.1 Aquatic compartment (including sediment)

Table 12.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
Freshwater	2.21E-6 mg/L	0.0005 mg/L	0.004429	7.53E5
Freshwater sediment	0.000143 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.004104	8.12E5
Marine water	2.13E-7 mg/L	0.00005 mg/L	0.004264	7.82E5
Marine water sediment	0.000014 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.003929	8.48E5

1.2.1.2 Terrestrial compartment

Table 13.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
Agricultural soil	0.000019 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000064	4.45E7
Grassland	0.000022 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000075	-

1.2.1.3 Microbiological activity in sewage treatment systems

Table 14.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
STP	4.45E-10 mg/L	100 mg/L	4.45E-12	7.49E14

1.2.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 9

General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Initial factory fill from header tank; Lubricating Oil

Table 15.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.2.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 8B

General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Initial factory fill by pouring from containers; Lubricating Oil

Table 16.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.2.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 2

General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Initial factory fill by injection of greases.

Table 17.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.2.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 9

General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Initial factory fill by injection of greases.

Table 18.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.2.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 1

General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Use as a lubricant/grease in a closed system

Table 19.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.2.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 8B

General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Maintenance activities industrial settings. General exposure during maintenance work including draining, refilling and R&D (e.g. engine testing).

Table 20.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

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

General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Disposal of waste product & used containers

Table 21.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.2.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 1

General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Material storage

Table 22.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.2.10 Contributing Scenario (10) controlling industrial worker exposure for PROC 2

General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Material storage

Table 23.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.3 Scenario 3: General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) (ATIEL-ATC Group B [i])

The following RCR calculations refer to the contributing scenarios described in chapter 2.3

1.3.1 Contributing Scenario (1) controlling environmental exposure for ERC7

General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines)

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.3.1.1 Aquatic compartment (including sediment)

Table 24.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**

Freshwater	2.21E-6 mg/L	0.0005 mg/L	0.004429	7.53E5
Freshwater sediment	0.000143 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.004104	8.12E5
Marine water	2.13E-7 mg/L	0.00005 mg/L	0.004264	7.82E5
Marine water sediment	0.000014 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.003929	8.48E5

1.3.1.2 Terrestrial compartment

Table 25.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Agricultural soil	0.000019 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000064	4.45E7
Grassland	0.000022 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000075	-

1.3.1.3 Microbiological activity in sewage treatment systems

Table 26.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
STP	4.45E-10 mg/L	100 mg/L	4.45E-12	7.49E14

1.3.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 9

General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Initial factory fill from header tank; Lubricating Oil

Table 27.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.3.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 8B

General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Initial factory fill by pouring from containers; Lubricating Oil

Table 28.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.3.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 2

General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Initial factory fill by injection of greases.

Table 29.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.3.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 9

General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Initial factory fill by injection of greases.

Table 30.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.3.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 1

General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Use as a lubricant/grease in a closed system

Table 31.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.3.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 8B

General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Maintenance activities industrial settings. General exposure during maintenance work including draining, refilling and R&D (e.g. engine testing).

Table 32.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

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

General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Disposal of waste product & used containers

Table 33.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.3.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 1

General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Material storage

Table 34.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.3.10 Contributing Scenario (10) controlling industrial worker exposure for PROC 2

General industrial use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Material storage

Table 35.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.4 Scenario 4: (Industrial) Use of lubricants in open high temperature processes, e.g. quenching fluids, glass release agents (ATIEL-ATC Group D [i])

The following RCR calculations refer to the contributing scenarios described in chapter 2.4

1.4.1 Contributing Scenario (1) controlling environmental exposure for ERC4

(Industrial) Use of lubricants in open high temperature processes, e.g. quenching fluids, glass release agents

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.4.1.1 Aquatic compartment (including sediment)

Table 36.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Freshwater	2.21E-6 mg/L	0.0005 mg/L	0.004429	7.53E5
Freshwater sediment	0.000143 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.004104	8.12E5
Marine water	2.13E-7 mg/L	0.00005 mg/L	0.004264	7.82E5
Marine water sediment	0.000014 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.003929	8.48E5

1.4.1.2 Terrestrial compartment

Table 37.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
Agricultural soil	0.000019 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000064	4.45E7
Grassland	0.000022 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000075	-

1.4.1.3 Microbiological activity in sewage treatment systems

Table 38.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
STP	4.45E-10 mg/L	100 mg/L	4.45E-12	7.49E14

1.4.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 8B

(Industrial) Use of lubricants in open high temperature processes, e.g. quenching fluids, glass release agents Fill bath with fluid by pumping from drum or large container

Table 39.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.4.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 13

(Industrial) Use of lubricants in open high temperature processes, e.g. quenching fluids, glass release agents Dip hot metal workpiece into fluid in closed booth

Table 40.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.4.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 13

(Industrial) Use of lubricants in open high temperature processes, e.g. quenching fluids, glass release agents Dip hot metal workpiece into fluid in open vat

Table 41.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

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

(Industrial) Use of lubricants in open high temperature processes, e.g. quenching fluids, glass release agents Treat and dispose spent fluid

Table 42.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.4.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 1

(Industrial) Use of lubricants in open high temperature processes, e.g. quenching fluids, glass release agents Material storage

Table 43.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.4.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 2

(Industrial) Use of lubricants in open high temperature processes, e.g. quenching fluids, glass release agents Material storage

Table 44.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.5 Scenario 5: (Industrial) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding (ATIEL-ATC Group F [i])

The following RCR calculations refer to the contributing scenarios described in chapter 2.5

1.5.1 Contributing Scenario (1) controlling environmental exposure for ERC4

(Industrial) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.5.1.1 Aquatic compartment (including sediment)

Table 45.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Freshwater	2.21E-6 mg/L	0.0005 mg/L	0.004429	7.53E5
Freshwater sediment	0.000143 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.004104	8.12E5
Marine water	2.13E-7 mg/L	0.00005 mg/L	0.004264	7.82E5
Marine water sediment	0.000014 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.003929	8.48E5

1.5.1.2 Terrestrial compartment

Table 46.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Agricultural soil	0.000019 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000064	4.45E7
Grassland	0.000022 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000075	-

1.5.1.3 Microbiological activity in sewage treatment systems

Table 47.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
STP	4.45E-10 mg/L	100 mg/L	4.45E-12	7.49E14

1.5.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 8B

(Industrial) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding Fill bath with fluid

Table 48.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.5.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 17

(Industrial) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding Drilling, grinding etc

Table 49.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.5.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 17

(Industrial) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding Use of high speed machinery (not MWF uses) - open systems giving rise to mist

Table 50.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.5.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 2

(Industrial) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding Automated metal rolling / forming

Table 51.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.5.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 17

(Industrial) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding Semi-automated metal rolling / forming

Table 52.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.5.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 8B

(Industrial) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding Draining, maintenance & cleaning of equipment

Table 53.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

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

(Industrial) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding Treat and dispose spent fluid

Table 54.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.5.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 1

(Industrial) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding Material storage

Table 55.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.5.10 Contributing Scenario (10) controlling industrial worker exposure for PROC 2

(Industrial) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding Material storage

Table 56.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.6 Scenario 6: (Industrial) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g.

mould releases, corrosion protection, slideways (ATIEL-ATC Group C [i])

The following RCR calculations refer to the contributing scenarios described in chapter 2.6

1.6.1 Contributing Scenario (1) controlling environmental exposure for ERC4

(Industrial) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.6.1.1 Aquatic compartment (including sediment)

Table 57.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Freshwater	2.21E-6 mg/L	0.0005 mg/L	0.004429	7.53E5
Freshwater sediment	0.000143 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.004104	8.12E5
Marine water	2.13E-7 mg/L	0.00005 mg/L	0.004264	7.82E5
Marine water sediment	0.000014 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.003929	8.48E5

1.6.1.2 Terrestrial compartment

Table 58.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Agricultural soil	0.000019 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000064	4.45E7
Grassland	0.000022 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000075	-

1.6.1.3 Microbiological activity in sewage treatment systems

Table 59.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
STP	4.45E-10 mg/L	100 mg/L	4.45E-12	7.49E14

1.6.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 8B

(Industrial) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Manual filling of lubricant container, i.e. bath or tank

Table 60.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.6.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 8B

(Industrial) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Automated filling of lubricant container, i.e. bath or tank

Table 61.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.6.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 9

(Industrial) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Automated filling of lubricant container, i.e. bath or tank

Table 62.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.6.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 10

(Industrial) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Automated roller application or brushing of coatings

Table 63.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.6.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 7

(Industrial) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Spraying onto equipment or article

Table 64.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.6.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 13

(Industrial) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Treatment of articles by dipping and pouring

Table 65.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.6.8 Contributing Scenario (8) controlling industrial worker exposure for PROC 1

(Industrial) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Material storage

Table 66.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.6.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 2

(Industrial) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Material storage

Table 67.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.7 Scenario 7: (Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways (ATIEL-ATC Group C [p])

The following RCR calculations refer to the contributing scenarios described in chapter 2.7

1.7.1 Contributing Scenario (1) controlling environmental exposure for ERC8A

(Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.7.1.1 Aquatic compartment (including sediment)

Table 68.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
Freshwater	0.000094 mg/L	0.0005 mg/L	0.187155	146.388
Freshwater sediment	0.006035 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.173432	157.972
Marine water	9.35E-6 mg/L	0.00005 mg/L	0.18699	146.518
Marine water sediment	0.000603 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.172288	159.02

1.7.1.2 Terrestrial compartment

Table 69.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
Agricultural soil	0.00146 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.004983	3.37E4
Grassland	0.000238 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000813	-

1.7.1.3 Microbiological activity in sewage treatment systems

Table 70.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
STP	0.000914 mg/L	100 mg/L	9.14E-6	3.00E6

1.7.2 Contributing Scenario (2) controlling professional worker exposure for PROC 8A

(Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Manual filling of lubricant container, i.e. bath or tank

Table 71.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.7.3 Contributing Scenario (3) controlling professional worker exposure for PROC 10

(Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Roller application or brushing of coatings

Table 72.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.7.4 Contributing Scenario (4) controlling professional worker exposure for PROC 11

(Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Spraying onto equipment or article

Table 73.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.7.5 Contributing Scenario (5) controlling professional worker exposure for PROC 13

(Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Treatment of articles by dipping and pouring

Table 74.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.7.6 Contributing Scenario (6) controlling professional worker exposure for PROC 8A

(Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Draining, maintenance & cleaning of equipment

Table 75.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.7.7 Contributing Scenario (7) controlling professional worker exposure for PROC 1

(Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Material storage

Table 76.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.7.8 Contributing Scenario (8) controlling professional worker exposure for PROC 2

(Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Material storage

Table 77.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.8 Scenario 8: (Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways (ATIEL-ATC Group C [p])

The following RCR calculations refer to the contributing scenarios described in chapter 2.8

1.8.1 Contributing Scenario (1) controlling environmental exposure for ERC8D

(Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.8.1.1 Aquatic compartment (including sediment)

Table 78.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Freshwater	0.000094 mg/L	0.0005 mg/L	0.187155	146.388
Freshwater sediment	0.006035 mg/kg$_{dwt}$	0.0348 mg/kg$_{dwt}$	0.173432	157.972
Marine water	9.35E-6 mg/L	0.00005 mg/L	0.18699	146.518
Marine water sediment	0.000603 mg/kg$_{dwt}$	0.0035 mg/kg$_{dwt}$	0.172288	159.02

1.8.1.2 Terrestrial compartment

Table 79.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Agricultural soil	0.00146 mg/kg$_{dwt}$	0.293 mg/kg$_{dwt}$	0.004983	3.37E4
Grassland	0.000238 mg/kg$_{dwt}$	0.293 mg/kg$_{dwt}$	0.000813	-

1.8.1.3 Microbiological activity in sewage treatment systems

Table 80.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
STP	0.000914 mg/L	100 mg/L	9.14E-6	3.00E6

1.8.2 Contributing Scenario (2) controlling professional worker exposure for PROC 8A

(Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Manual filling of lubricant container, i.e. bath or tank

Table 81.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.8.3 Contributing Scenario (3) controlling professional worker exposure for PROC 10

(Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Roller application or brushing of coatings

Table 82.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.8.4 Contributing Scenario (4) controlling professional worker exposure for PROC 11

(Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Spraying onto equipment or article

Table 83.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.8.5 Contributing Scenario (5) controlling professional worker exposure for PROC 13

(Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Treatment of articles by dipping and pouring

Table 84.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.8.6 Contributing Scenario (6) controlling professional worker exposure for PROC 8A

(Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Draining, maintenance & cleaning of equipment

Table 85.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.8.7 Contributing Scenario (7) controlling professional worker exposure for PROC 1

(Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Material storage

Table 86.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.8.8 Contributing Scenario (8) controlling professional worker exposure for PROC 2

(Professional) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Material storage

Table 87.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.9 Scenario 9: (Professional) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding (ATIEL-ATC Group F [p])

The following RCR calculations refer to the contributing scenarios described in chapter 2.9

1.9.1 Contributing Scenario (1) controlling environmental exposure for ERC8A

(Professional) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.9.1.1 Aquatic compartment (including sediment)

Table 88.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Freshwater	0.000185 mg/L	0.0005 mg/L	0.36988	74.071
Freshwater sediment	0.011928 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.342759	79.932
Marine water	0.000018 mg/L	0.00005 mg/L	0.369715	74.104
Marine water sediment	0.001192 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.340648	80.427

1.9.1.2 Terrestrial compartment

Table 89.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Agricultural soil	0.002919 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.009963	1.69E4
Grassland	0.000476 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.001623	-

1.9.1.3 Microbiological activity in sewage treatment systems

Table 90.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
STP	0.001829 mg/L	100 mg/L	0.000018	1.50E6

1.9.2 Contributing Scenario (2) controlling professional worker exposure for PROC 8A

(Professional) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding Fill bath with fluid

Table 91.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.9.3 Contributing Scenario (3) controlling professional worker exposure for PROC 17

(Professional) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding Drilling, grinding etc

Table 92.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.9.4 Contributing Scenario (4) controlling professional worker exposure for PROC 17

(Professional) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding Use of high speed machinery (not MWF uses) - open systems giving rise to mist

Table 93.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

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

(Professional) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding Draining, maintenance & cleaning of equipment

Table 94.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.9.6 Contributing Scenario (6) controlling professional worker exposure for PROC 8A

(Professional) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding Treat and dispose spent fluid

Table 95.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.9.7 Contributing Scenario (7) controlling professional worker exposure for PROC 1

(Professional) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding Material storage

Table 96.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.9.8 Contributing Scenario (8) controlling professional worker exposure for PROC 2

(Professional) Use of lubricants in high energy open processes, e.g. in high speed machinery such as metal rolling / forming or metalworking fluids for machining and grinding Material storage

Table 97.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.10 Scenario 10: General professional use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery
(including engines) (ATIEL-ATC Group B [p])

The following RCR calculations refer to the contributing scenarios described in chapter 2.10

1.10.1 Contributing Scenario (1) controlling environmental exposure for ERC9A

General professional use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines)

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.10.1.1 Aquatic compartment (including sediment)

Table 98.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Freshwater	0.000094 mg/L	0.0005 mg/L	0.187155	146.388

Freshwater sediment	0.006035 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.173432	157.972
Marine water	9.35E-6 mg/L	0.00005 mg/L	0.18699	146.518
Marine water sediment	0.000603 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.172288	159.02

1.10.1.2 Terrestrial compartment

Table 99.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Agricultural soil	0.00146 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.004983	3.37E4
Grassland	0.000238 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000813	-

1.10.1.3 Microbiological activity in sewage treatment systems

Table 100.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
STP	0.000914 mg/L	100 mg/L	9.14E-6	3.00E6

1.10.2 Contributing Scenario (2) controlling professional worker exposure for PROC 1

General professional use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines)
Use as a lubricant/grease in a closed system

Table 101.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

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

General professional use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines)
General exposure during maintenance work including draining, refilling.

Table 102.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.10.4 Contributing Scenario (4) controlling professional worker exposure for PROC 8B

General professional use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines)
General exposure during maintenance work including draining, refilling.

Table 103.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.10.5 Contributing Scenario (5) controlling professional worker exposure for PROC 20

General professional use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines)
General exposure during maintenance work including draining, refilling.

Table 104.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.10.6 Contributing Scenario (6) controlling professional worker exposure for PROC 1

General professional use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines)

Material storage

Table 105.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.10.7 Contributing Scenario (7) controlling professional worker exposure for PROC 2

General professional use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines)
Material storage

Table 106.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.11 Scenario 11: General professional use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery
(including engines) (ATIEL-ATC Group B [p])

The following RCR calculations refer to the contributing scenarios described in chapter 2.11

1.11.1 Contributing Scenario (1) controlling environmental exposure for ERC9B

General professional use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines)

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.11.1.1 Aquatic compartment (including sediment)

Table 107.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Freshwater	0.000094 mg/L	0.0005 mg/L	0.187155	146.388
Freshwater sediment	0.006035 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.173432	157.972
Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Marine water	9.35E-6 mg/L	0.00005 mg/L	0.18699	146.518
Marine water sediment	0.000603 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.172288	159.02

1.11.1.2 Terrestrial compartment

Table 108.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Agricultural soil	0.00146 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.004983	3.37E4
Grassland	0.000238 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000813	-

1.11.1.3 Microbiological activity in sewage treatment systems

Table 109.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
STP	0.000914 mg/L	100 mg/L	9.14E-6	3.00E6

1.11.2 Contributing Scenario (2) controlling professional worker exposure for PROC 1

General professional use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Use as a lubricant/grease in a closed system

Table 110.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

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

General professional use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) General exposure during maintenance work including draining, refilling.

Table 111.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.11.4 Contributing Scenario (4) controlling professional worker exposure for PROC 8B

General professional use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) General exposure during maintenance work including draining, refilling.

Table 112.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.11.5 Contributing Scenario (5) controlling professional worker exposure for PROC 20

General professional use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) General exposure during maintenance work including draining, refilling.

Table 113.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.11.6 Contributing Scenario (6) controlling professional worker exposure for PROC 1

General professional use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Material storage

Table 114.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.11.7 Contributing Scenario (7) controlling professional worker exposure for PROC 2

General professional use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Material storage

Table 115.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.12 Scenario 12: General consumer use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery
(including engines) (ATIEL-ATC Group B [c])

The following RCR calculations refer to the contributing scenarios described in chapter 2.12

1.12.1 Contributing Scenario (1) controlling environmental exposure for ERC9A

General consumer use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines)

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.12.1.1 Aquatic compartment (including sediment)

Table 116.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
Freshwater	0.000094 mg/L	0.0005 mg/L	0.187155	146.388
Freshwater sediment	0.006035 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.173432	157.972
Marine water	9.35E-6 mg/L	0.00005 mg/L	0.18699	146.518
Marine water sediment	0.000603 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.172288	159.02

1.12.1.2 Terrestrial compartment

Table 117.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
Agricultural soil	0.00146 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.004983	3.37E4
Grassland	0.000238 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000813	-

1.12.1.3 Microbiological activity in sewage treatment systems

Table 118.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
STP	0.000914 mg/L	100 mg/L	9.14E-6	3.00E6

1.12.2 Contributing Scenario (2) controlling consumer exposure for PC 24

General consumer use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Use as a lubricant in a closed system, including filling, draining and maintenance

Table 119.

As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.

1.12.3 Contributing Scenario (3) controlling consumer exposure for PC 24

General consumer use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Use as a lubricant in a closed system, including filling, draining and maintenance

Table 120.

As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.

1.13 Scenario 13: General consumer use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery

(including engines) (ATIEL-ATC Group B [c])

The following RCR calculations refer to the contributing scenarios described in chapter 2.13

1.13.1 Contributing Scenario (1) controlling environmental exposure for ERC9B

General consumer use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines)

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.13.1.1 Aquatic compartment (including sediment)

Table 121.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
Freshwater	0.000094 mg/L	0.0005 mg/L	0.187155	146.388
Freshwater sediment	0.006035 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.173432	157.972
Marine water	9.35E-6 mg/L	0.00005 mg/L	0.18699	146.518
Marine water sediment	0.000603 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.172288	159.02

1.13.1.2 Terrestrial compartment

Table 122.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
Agricultural soil	0.00146 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.004983	3.37E4
Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Grassland	0.000238 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000813	-

3.13.1.3 Microbiological activity in sewage treatment systems

Table 123.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
STP	0.000914 mg/L	100 mg/L	9.14E-6	3.00E6

1.13.2 Contributing Scenario (2) controlling consumer exposure for PC 24

General consumer use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Use as a lubricant in a closed system, including filling, draining and maintenance

Table 124.

As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.

1.13.3 Contributing Scenario (3) controlling consumer exposure for PC 24

General consumer use of lubricants and greases in vehicles or machinery. Includes filling and draining of containers and enclosed machinery (including engines) Use as a lubricant in a closed system, including filling, draining and maintenance

Table 125.

As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.

1.14 Scenario 14: Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities (ATIEL-ATC Group A [i])

The following RCR calculations refer to the contributing scenarios described in chapter 2.14

1.14.1 Contributing Scenario (1) controlling environmental exposure for ERC2

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.14.1.1 Aquatic compartment (including sediment)

Table 126.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
Freshwater	0.000113 mg/L	0.0005 mg/L	0.226745	1.47E4
Freshwater sediment	0.007312 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.210119	1.59E4
Marine water	0.000011 mg/L	0.00005 mg/L	0.22658	1.47E4
Marine water sediment	0.000731 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.208766	1.60E4

1.14.1.2 Terrestrial compartment

Table 127.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
Agricultural soil	0.001794 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.006122	3.15E6
Grassland	0.00031 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.001059	-

1.14.1.3 Microbiological activity in sewage treatment systems

Table 128.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
STP	0.001113 mg/L	100 mg/L	0.000011	3.00E8

1.14.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 2

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Closed continuous processes at elevated temperature with sampling, including grease manufacturing

Table 129.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.14.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 3

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Batch closed process with sampling. Blending and Filling processes (closed/dedicated). Includes both bulk and small quantity additions. May be at elevated temperature e.g. grease manufacture

Table 130.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.14.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 4

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Sample collection and formulation

Table 131.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

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

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Sample collection of incoming raw material

Table 132.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

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

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Bulk transfers by fixed pipe or flexible hose

Table 133.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.14.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 8B

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Small pack (drum/bag) transfers - dedicated facility

Table 134.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

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

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Small pack (drum/bag) transfers - non dedicated facility

Table 135.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.14.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 8B

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Top filling of bulk containers (road cars etc)

Table 136.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.14.10 Contributing Scenario (10) controlling industrial worker exposure for PROC 8B

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Maintenance and cleaning

Table 137.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.14.11 Contributing Scenario (11) controlling industrial worker exposure for PROC 9

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Filling of drums and small packages

Table 138.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.14.12 Contributing Scenario (12) controlling industrial worker exposure for PROC 15

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities QC & Laboratory

Table 139.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.14.13 Contributing Scenario (13) controlling industrial worker exposure for PROC 1

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Material storage

Table 140.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.14.14 Contributing Scenario (14) controlling industrial worker exposure for PROC 4

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Batch open process with sampling. Blending and Filling processes (open/non dedicated). Includes addition of both bulk and small quantity. Mixing operations. May be at elevated temperature e.g. grease manufacture

Table 141.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.14.15 Contributing Scenario (15) controlling industrial worker exposure for PROC 5

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Batch open process with sampling. Blending and Filling processes (open/non dedicated). Includes addition of both bulk and small quantity. Mixing operations. May be at elevated temperature e.g. grease manufacture

Table 142.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.14.16 Contributing Scenario (16) controlling industrial worker exposure for PROC 2

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Material storage

Table 143.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.15 Scenario 15: Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities (ATIEL-ATC Group A [i])

The following RCR calculations refer to the contributing scenarios described in chapter 2.15

1.15.1 Contributing Scenario (1) controlling environmental exposure for ERC6A

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.15.1.1 Aquatic compartment (including sediment)

Table 144.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Freshwater	0.000113 mg/L	0.0005 mg/L	0.226745	1.47E4
Freshwater sediment	0.007312 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.210119	1.59E4
Marine water	0.000011 mg/L	0.00005 mg/L	0.22658	1.47E4
Marine water sediment	0.000731 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.208766	1.60E4

1.15.1.2 Terrestrial compartment

Table 145.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
Agricultural soil	0.001794 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.006122	3.15E6
Grassland	0.00031 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.001059	-

1.15.1.3 Microbiological activity in sewage treatment systems

Table 146.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
STP	0.001113 mg/L	100 mg/L	0.000011	3.00E8

1.15.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 2

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Closed continuous processes at elevated temperature with sampling, including grease manufacturing

Table 147.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.15.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 3

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Batch closed process with sampling. Blending and Filling processes (closed/dedicated). Includes both bulk and small quantity additions. May be at elevated temperature e.g. grease manufacture

Table 148.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.15.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 4

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Sample collection and formulation

Table 149.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

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

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Sample collection of incoming raw material

Table 150.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

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

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Bulk transfers by fixed pipe or flexible hose

Table 151.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.15.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 8B

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Small pack (drum/bag) transfers - dedicated facility

Table 152.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

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

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Small pack (drum/bag) transfers - non dedicated facility

Table 153.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.15.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 8B

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Top filling of bulk containers (road cars etc)

Table 154.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.15.10 Contributing Scenario (10) controlling industrial worker exposure for PROC 8B

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Maintenance and cleaning

Table 155.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.15.11 Contributing Scenario (11) controlling industrial worker exposure for PROC 9

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Filling of drums and small packages

Table 156.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.15.12 Contributing Scenario (12) controlling industrial worker exposure for PROC 15

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities QC & Laboratory

Table 157.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.15.13 Contributing Scenario (13) controlling industrial worker exposure for PROC 1

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Material storage

Table 158.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.15.14 Contributing Scenario (14) controlling industrial worker exposure for PROC 4

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Batch open process with sampling. Blending and Filling processes (open/non dedicated). Includes addition of both bulk and small quantity. Mixing operations. May be at elevated temperature e.g. grease manufacture

Table 159.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.15.15 Contributing Scenario (15) controlling industrial worker exposure for PROC 5

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Batch open process with sampling. Blending and Filling processes (open/non dedicated). Includes addition of both bulk and small quantity. Mixing operations. May be at elevated temperature e.g. grease manufacture

Table 160.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.15.16 Contributing Scenario (16) controlling industrial worker exposure for PROC 2

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small packing, sampling, maintenance and associated laboratory activities Material storage

Table 161.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.16 Scenario 16: (Consumer) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g.
mould releases, corrosion protection, slideways (ATIEL-ATC Group C [c])

The following RCR calculations refer to the contributing scenarios described in chapter 2.16

1.16.1 Contributing Scenario (1) controlling environmental exposure for ERC8A

(Consumer) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.16.1.1 Aquatic compartment (including sediment)

Table 162.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Freshwater	2.67E-6 mg/L	0.0005 mg/L	0.005343	25.64
Freshwater sediment	0.000172 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.004951	27.668
Marine water	2.59E-7 mg/L	0.00005 mg/L	0.005178	26.457
Marine water sediment	0.000017 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.004771	28.715

1.16.1.2 Terrestrial compartment

Table 163.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Agricultural soil	8.21E-6 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000028	1.91E4
Grassland	2.10E-6 mg/kg_{dwt}	0.293 mg/kg_{dwt}	7.17E-6	-

1.16.1.3 Microbiological activity in sewage treatment systems

Table 164.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
STP	4.57E-6 mg/L	100 mg/L	4.57E-8	3.00E6

1.16.2 Contributing Scenario (2) controlling consumer exposure for PC 24

(Consumer) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Use as a lubricant in an open system, e.g, penetrating lubricants/greases

Table 165.

As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.

1.16.3 Contributing Scenario (3) controlling consumer exposure for PC 24

(Consumer) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Use as a lubricant in an open system, e.g, penetrating lubricants/greases

Table 166.

As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.

1.16.4 Contributing Scenario (4) controlling consumer exposure for PC 24

(Consumer) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Use as a lubricant in an open system, e.g, penetrating lubricants/greases

Table 167.

As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.

1.17 Scenario 17: (Consumer) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g.
mould releases, corrosion protection, slideways (ATIEL-ATC Group C [c])

The following RCR calculations refer to the contributing scenarios described in chapter 2.17

1.17.1 Contributing Scenario (1) controlling environmental exposure for ERC8D

(Consumer) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.17.1.1 Aquatic compartment (including sediment)

Table 168.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Freshwater	2.67E-6 mg/L	0.0005 mg/L	0.005343	25.64
Freshwater sediment	0.000172 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.004951	27.668
Marine water	2.59E-7 mg/L	0.00005 mg/L	0.005178	26.457
Marine water sediment	0.000017 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.004771	28.715

1.17.1.2 Terrestrial compartment

Table 169.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Agricultural soil	8.21E-6 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000028	1.91E4
Grassland	2.10E-6 mg/kg_{dwt}	0.293 mg/kg_{dwt}	7.17E-6	-

1.17.1.3 Microbiological activity in sewage treatment systems

Table 170.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
STP	4.57E-6 mg/L	100 mg/L	4.57E-8	3.00E6

1.17.2 Contributing Scenario (2) controlling consumer exposure for PC 24

(Consumer) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Use as a lubricant in an open system, e.g, penetrating lubricants/greases

Table 171.

As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.

1.17.3 Contributing Scenario (3) controlling consumer exposure for PC 24

(Consumer) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Use as a lubricant in an open system, e.g, penetrating lubricants/greases

Table 172.

As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.

1.17.4 Contributing Scenario (4) controlling consumer exposure for PC 24

(Consumer) Use in open system. Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Use as a lubricant in an open system, e.g, penetrating lubricants/greases

Table 173.

As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.

1.18 Scenario 18: Manufacture of cosmetic products (Manufacture of cosmetic products)

The following RCR calculations refer to the contributing scenarios described in chapter 2.18

1.18.1 Contributing Scenario (1) controlling environmental exposure for ERC2 *Manufacture of cosmetic products*

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.18.1.1 Aquatic compartment (including sediment)

Table 174.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
Freshwater	0.000406 mg/L	0.0005 mg/L	0.812043	2,239.022
Freshwater sediment	0.026187 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.7525	2,416.189
Marine water	0.000041 mg/L	0.00005 mg/L	0.811878	2,239.477
Marine water sediment	0.002618 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.748048	2,430.57

1.18.1.2 Terrestrial compartment

Table 175.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
Agricultural soil	0.010035 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.034248	1.01E5
Grassland	0.005257 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.01794	-

1.18.1.3 Microbiological activity in sewage treatment systems

Table 176.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
STP	0.004042 mg/L	100 mg/L	0.00004	4.50E7

3.18.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 1
Manufacture of cosmetic products Closed process

Table 177.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.18.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 2 *Manufacture of cosmetic products Closed process, controlled exposure*

Table 178.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.18.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 3 *Manufacture of cosmetic products Closed batch process*

Table 179.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.18.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 5 *Manufacture of cosmetic products Mixing or blending in batch process*

Table 180.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.18.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 8A *Manufacture of cosmetic products Transfer, non dedicated facilities*

Table 181.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.18.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 8B *Manufacture of cosmetic products Transfer, dedicated facilities*

Table 182.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.18.8 Contributing Scenario (8) controlling industrial worker exposure for PROC 9 *Manufacture of cosmetic products Transfer into small containers*

Table 183.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.18.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 14 *Manufacture of cosmetic products Tabletting, compression etc.*

Table 184.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.18.10 Contributing Scenario (10) controlling industrial worker exposure for PROC 15 *Manufacture of cosmetic products Laboratory reagent*

Table 185.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.19 Scenario 19: End use of cosmetic products (COLIPA U1)

The following RCR calculations refer to the contributing scenarios described in chapter 2.19

1.19.1 Contributing Scenario (1) controlling environmental exposure for ERC8A *End use of cosmetic products*

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.19.1.1 Aquatic compartment (including sediment)

Table 186.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Freshwater	0.000496 mg/L	0.0005 mg/L	0.991147	0.074633
Freshwater sediment	0.031963 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.918471	0.080539
Marine water	0.00005 mg/L	0.00005 mg/L	0.990982	0.074646
Marine water sediment	0.003196 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.913071	0.081015

1.19.1.2 Terrestrial compartment

Table 187.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Agricultural soil	0.00788 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.026895	16.902
Grassland	0.001282 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.004377	-

1.19.1.3 Microbiological activity in sewage treatment systems

Table 188.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
STP	0.004938 mg/L	100 mg/L	0.000049	1,497.998

3.19.2 Contributing Scenario (2) controlling consumer exposure for PC 39 *End use of cosmetic products*

Table 189.

As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.

1.20 Scenario 20: General Rubber Goods (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, GRG)

The following RCR calculations refer to the contributing scenarios described in chapter 2.20

1.20.1 Contributing Scenario (1) controlling environmental exposure for ERC3 *General Rubber Goods*

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.20.1.1 Aquatic compartment (including sediment)

Table 190.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Freshwater	0.000056 mg/L	0.0005 mg/L	0.111141	899.759
Freshwater sediment	0.003584 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.102991	970.954
Marine water	5.55E-6 mg/L	0.00005 mg/L	0.110976	901.098
Marine water sediment	0.000358 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.102251	977.987

1.20.1.2 Terrestrial compartment

Table 191.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Agricultural soil	0.000861 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.002937	1.97E5
Grassland	0.000148 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000506	-

1.20.1.3 Microbiological activity in sewage treatment systems

Table 192.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
STP	0.000534 mg/L	100 mg/L	5.34E-6	1.87E7

3.20.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 8B *General Rubber Goods Filling silos or temporary bins (typically outdoors)*

Table 193.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.20.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 8B *General Rubber Goods Filling tanks (indoors or outdoors) - For liquids*

Table 194.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.20.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 8B *General Rubber Goods Filling tanks (indoors or outdoors) - For liquids*

Table 195.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.20.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 9
General Rubber Goods Transferring substances into small containers
Solids (typically indoors); Storage in closed, dust sealed cargo bins
Big bag (typically indoors)

Table 196.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.20.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 9
General Rubber Goods Storage and packaging transfer into tanks and drums Liquids
(typically indoors)

Table 197.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.20.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 9
General Rubber Goods Weighting substances by hand or automatically in a dose bin. Example : small container at balance containing plastic bags

Table 198.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.20.8 Contributing Scenario (8) controlling industrial worker exposure for PROC 5
General Rubber Goods Grinding in jars or other grinding machines. Ingredients added manually or automatically. Dispersion poured into containers

Table 199.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.20.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 9
General Rubber Goods Manual metering, weighting possible, mainly synthetic rubbers and mixtures; Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans

Table 200.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.20.10 Contributing Scenario (10) controlling industrial worker exposure for PROC 8B *General Rubber Goods Automatic substance metering , feeding into mixing unit*
Solids Ex. CB, Si

Table 201.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.20.11 Contributing Scenario (11) controlling industrial worker exposure for PROC 8B

General Rubber Goods Automatic substance metering in closed feeding system, injection into mixing chamber
Liquids Ex silane, oils

Table 202.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.20.12 Contributing Scenario (12) controlling industrial worker exposure for PROC 5
General Rubber Goods Mixing in closed mixing unit (i.e. Banbury mixer); Open mill mixing; Steering mill dispersing

Table 203.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.20.13 Contributing Scenario (13) controlling industrial worker exposure for PROC 9 *General Rubber Goods Intermediate compound storage*

Table 204.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.20.14 Contributing Scenario (14) controlling industrial worker exposure for PROC 9
General Rubber Goods Compound transfer into a vessel, mixing and transfering cement into portable drums; Transferring cement into portable drums

Table 205.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.20.15 Contributing Scenario (15) controlling industrial worker exposure for PROC 10 *General Rubber Goods Drying and/or solvents evaporation*

Table 206.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.20.16 Contributing Scenario (16) controlling industrial worker exposure for PROC 13
General Rubber Goods Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation

Table 207.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.20.17 Contributing Scenario (17) controlling industrial worker exposure for PROC 10 *General Rubber Goods Cement and paint application*

Table 208.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.20.18 Contributing Scenario (18) controlling industrial worker exposure for PROC 14
General Rubber Goods Compound processing; Cooling extruded compound; Feeding from stock, milling, and feeding the calendar

Table 209.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.20.19 Contributing Scenario (19) controlling industrial worker exposure for PROC 10 *General Rubber Goods Cement application*

Table 210.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.20.20 Contributing Scenario (20) controlling industrial worker exposure for PROC 7
General Rubber Goods Treatment with releasing agents
Applied on tyre (cold); Equipment treatment with manual application of releasing agents on surfaces. Applied on mould (warm)

Table 211.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.20.21 Contributing Scenario (21) controlling industrial worker exposure for PROC 21 *General Rubber Goods Compound assembling from stocks*

Table 212.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.20.22 Contributing Scenario (22) controlling industrial worker exposure for PROC 14
General Rubber Goods Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)

Table 213.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.20.23 Contributing Scenario (23) controlling industrial worker exposure for PROC 14
General Rubber Goods Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)

Table 214.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.21 Scenario 21: General Rubber Goods (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, GRG)

The following RCR calculations refer to the contributing scenarios described in chapter 2.21

1.21.1 Contributing Scenario (1) controlling environmental exposure for ERC4
General Rubber Goods

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.21.1.1 Aquatic compartment (including sediment)

Table 215.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Freshwater	0.000225 mg/L	0.0005 mg/L	0.449061	7,422.892
Freshwater sediment	0.014481 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.416134	8,010.244
Marine water	0.000022 mg/L	0.00005 mg/L	0.448896	7,425.621
Marine water sediment	0.001448 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.413604	8,059.243

1.21.1.2 Terrestrial compartment

Table 216.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Agricultural soil	0.007138 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.024362	2.04E5
Grassland	0.004787 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.016339	-

1.21.1.3 Microbiological activity in sewage treatment systems

Table 217.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
STP	0.002225 mg/L	100 mg/L	0.000022	1.50E8

3.21.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 8B
General Rubber Goods Filling silos or temporary bins (typically outdoors)

Table 218.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.21.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 8B
General Rubber Goods Filling tanks (indoors or outdoors) - For liquids

Table 219.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.21.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 8B *General Rubber Goods Filling tanks (indoors or outdoors) - For liquids*

Table 220.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.21.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 9
General Rubber Goods Transferring substances into small containers Solids (typically indoors); Storage in closed, dust sealed cargo bins Big bag (typically indoors)

Table 221.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.21.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 9
General Rubber Goods Storage and packaging transfer into tanks and drums Liquids (typically indoors)

Table 222.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.21.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 9
General Rubber Goods Weighting substances by hand or automatically in a dose bin. Example : small container at balance containing plastic bags

Table 223.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.21.8 Contributing Scenario (8) controlling industrial worker exposure for PROC 5
General Rubber Goods Grinding in jars or other grinding machines. Ingredients added manually or automatically. Dispersion poured into containers

Table 224.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.21.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 9
General Rubber Goods Manual metering, weighting possible, mainly synthetic rubbers and mixtures; Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans

Table 225.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.21.10 Contributing Scenario (10) controlling industrial worker exposure for PROC 8B *General Rubber Goods Automatic substance metering , feeding into mixing unit Solids Ex. CB, Si*

Table 226.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.21.11 Contributing Scenario (11) controlling industrial worker exposure for PROC 8B
General Rubber Goods Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils

Table 227.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.21.12 Contributing Scenario (12) controlling industrial worker exposure for PROC 5
General Rubber Goods Mixing in closed mixing unit (i.e. Banbury mixer); Open mill mixing; Steering mill dispersing

Table 228.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.21.13 Contributing Scenario (13) controlling industrial worker exposure for PROC 9 *General Rubber Goods Intermediate compound storage*

Table 229.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.21.14 Contributing Scenario (14) controlling industrial worker exposure for PROC 9
General Rubber Goods Compound transfer into a vessel, mixing and transfering cement into portable drums; Transferring cement into portable drums

Table 230.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.21.15 Contributing Scenario (15) controlling industrial worker exposure for PROC 10 *General Rubber Goods Drying and/or solvents evaporation*

Table 231.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.21.16 Contributing Scenario (16) controlling industrial worker exposure for PROC 13
General Rubber Goods Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation

Table 232.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.21.17 Contributing Scenario (17) controlling industrial worker exposure for PROC 10 *General Rubber Goods Cement and paint application*

Table 233.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.21.18 Contributing Scenario (18) controlling industrial worker exposure for PROC 14
General Rubber Goods Compound processing; Cooling extruded compound; Feeding from stock, milling, and feeding the calendar

Table 234.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.21.19 Contributing Scenario (19) controlling industrial worker exposure for PROC 10 *General Rubber Goods Cement application*

Table 235.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.21.20 Contributing Scenario (20) controlling industrial worker exposure for PROC 7
General Rubber Goods Treatment with releasing agents
Applied on tyre (cold); Equipment treatment with manual application of releasing agents on surfaces. Applied on mould (warm)

Table 236.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.21.21 Contributing Scenario (21) controlling industrial worker exposure for PROC 21
General Rubber Goods Compound assembling from stocks

Table 237.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.21.22 Contributing Scenario (22) controlling industrial worker exposure for PROC 14
General Rubber Goods Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)

Table 238.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.21.23 Contributing Scenario (23) controlling industrial worker exposure for PROC 14
General Rubber Goods Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)

Table 239.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.22 Scenario 22: General Rubber Goods (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, GRG)

The following RCR calculations refer to the contributing scenarios described in chapter 2.22

1.22.1 Contributing Scenario (1) controlling environmental exposure for ERC6D
General Rubber Goods

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.22.1.1 Aquatic compartment (including sediment)

Table 240.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Freshwater	0.000056 mg/L	0.0005 mg/L	0.111141	899.759
Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Freshwater sediment	0.003584 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.102991	970.954
Marine water	5.55E-6 mg/L	0.00005 mg/L	0.110976	901.098
Marine water sediment	0.000358 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.102251	977.987

1.22.1.2 Terrestrial compartment

Table 241.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
Agricultural soil	0.000861 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.002937	1.97E5
Grassland	0.000148 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000506	-

1.22.1.3 Microbiological activity in sewage treatment systems

Table 242.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
STP	0.000534 mg/L	100 mg/L	5.34E-6	1.87E7

3.22.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 8B
General Rubber Goods Filling silos or temporary bins (typically outdoors)

Table 243.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.22.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 8B *General Rubber Goods Filling tanks (indoors or outdoors) - For liquids*

Table 244.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.22.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 8B *General Rubber Goods Filling tanks (indoors or outdoors) - For liquids*

Table 245.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.22.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 9
General Rubber Goods Transferring substances into small containers
Solids (typically indoors); Storage in closed, dust sealed cargo bins
Big bag (typically indoors)

Table 246.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.22.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 9
General Rubber Goods Storage and packaging transfer into tanks and drums Liquids
(typically indoors)

Table 247.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.22.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 9
General Rubber Goods Weighting substances by hand or automatically in a dose bin. Example : small container at balance containing plastic bags

Table 248.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.22.8 Contributing Scenario (8) controlling industrial worker exposure for PROC 5
General Rubber Goods Grinding in jars or other grinding machines. Ingredients added manually or automatically. Dispersion poured into containers

Table 249.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.22.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 9
General Rubber Goods Manual metering, weighting possible, mainly synthetic rubbers and mixtures; Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans

Table 250.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.22.10 Contributing Scenario (10) controlling industrial worker exposure for PROC 8B *General Rubber Goods Automatic substance metering , feeding into mixing unit Solids Ex. CB, Si*

Table 251.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.22.11 Contributing Scenario (11) controlling industrial worker exposure for PROC 8B
General Rubber Goods Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils

Table 252.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.22.12 Contributing Scenario (12) controlling industrial worker exposure for PROC 5
General Rubber Goods Mixing in closed mixing unit (i.e. Banbury mixer); Open mill mixing; Steering mill dispersing

Table 253.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.22.13 Contributing Scenario (13) controlling industrial worker exposure for PROC 9 *General Rubber Goods Intermediate compound storage*

Table 254.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.22.14 Contributing Scenario (14) controlling industrial worker exposure for PROC 9
General Rubber Goods Compound transfer into a vessel, mixing and transfering cement into portable drums; Transferring cement into portable drums

Table 255.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.22.15 Contributing Scenario (15) controlling industrial worker exposure for PROC 10 *General Rubber Goods Drying and/or solvents evaporation*

Table 256.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.22.16 Contributing Scenario (16) controlling industrial worker exposure for PROC 13
General Rubber Goods Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation

Table 257.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.22.17 Contributing Scenario (17) controlling industrial worker exposure for PROC 10 *General Rubber Goods Cement and paint application*

Table 258.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.22.18 Contributing Scenario (18) controlling industrial worker exposure for PROC 14
General Rubber Goods Compound processing; Cooling extruded compound; Feeding from stock, milling, and feeding the calendar

Table 259.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.22.19 Contributing Scenario (19) controlling industrial worker exposure for PROC 10 *General Rubber Goods Cement application*

Table 260.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.22.20 Contributing Scenario (20) controlling industrial worker exposure for PROC 7
General Rubber Goods Treatment with releasing agents
Applied on tyre (cold); Equipment treatment with manual application of releasing agents on surfaces. Applied on mould (warm)

Table 261.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.22.21 Contributing Scenario (21) controlling industrial worker exposure for PROC 21
General Rubber Goods Compound assembling from stocks

Table 262.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.22.22 Contributing Scenario (22) controlling industrial worker exposure for PROC 14
General Rubber Goods Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)

Table 263.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.22.23 Contributing Scenario (23) controlling industrial worker exposure for PROC 14
General Rubber Goods Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)

Table 264.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

1.23 Scenario 23: General Rubber Goods_Article Service Life (GRG, GRG1)

The following RCR calculations refer to the contributing scenarios described in chapter 2.23

1.23.1 Contributing Scenario (1) controlling environmental exposure for ERC11A *General Rubber Goods_Article Service Life*

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

1.23.1.1 Aquatic compartment (including sediment)

Table 265.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Freshwater	4.04E-6 mg/L	0.0005 mg/L	0.008084	67.784
Freshwater sediment	0.000261 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.007491	73.148

Marine water	3.96E-7 mg/L	0.00005 mg/L	0.007919	69.198
Marine water sediment	0.000026 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.007296	75.102

1.23.1.2 Terrestrial compartment

Table 266.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Agricultural soil	0.00003 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000103	2.84E4
Grassland	5.66E-6 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000019	-

1.23.1.3 Microbiological activity in sewage treatment systems

Table 267.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
STP	0.000018 mg/L	100 mg/L	1.83E-7	3.00E6

1.23.2 Contributing Scenario (2) controlling consumer exposure for PC 9a

General Rubber Goods_Article Service Life Filling silos or temporary bins (typically outdoors), Filling tanks (indoors or outdoors) - For liquids; Transferring substances into small containers Solids (typically indoors); Storage in closed, dust sealed cargo bins Big bag (typically indoors); Storage and packaging transfer into tanks and drums Liquids (typically indoors); Weighting substances by hand or automatically in a dose bin. Example : small container at balance containing plastic bags; Grinding in jars or other grinding machines. Ingredients added manually or automatically. Dispersion poured into containers; Manual metering, weighting possible, mainly synthetic rubbers and mixtures; Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans; Automatic substance metering , feeding into mixing unit Solids Ex. CB, Si; Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils; Mixing in closed mixing unit (i.e. Banbury mixer); Open mill mixing; Steering mill dispersing; Intermediate compound storage; Compound transfer into a vessel, mixing and transfering cement into portable drums; Transferring cement into portable drums; Drying and/or solvents evaporation; Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation; Cement and paint application; Compound processing; Cooling extruded compound; Feeding from stock, milling, and feeding the calendar; Treatment with releasing agents Applied on tyre (cold); Equipment treatment with manual application of releasing agents on surfaces.
Applied on mould (warm); Compound assembling from stocks; Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)

Table 268.

As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.

3.23.3 Contributing Scenario (3) controlling consumer exposure for PC 24

General Rubber Goods_Article Service Life Filling silos or temporary bins (typically outdoors), Filling tanks (indoors or outdoors) - For liquids; Transferring substances into small containers Solids (typically indoors); Storage in closed, dust sealed cargo bins Big bag (typically indoors); Storage and packaging transfer into tanks and drums Liquids (typically indoors); Weighting substances by hand or automatically in a dose bin. Example : small container at balance containing plastic bags; Grinding in jars or other grinding machines. Ingredients added manually or automatically. Dispersion poured into containers; Manual metering, weighting possible, mainly synthetic rubbers and mixtures; Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans; Automatic substance metering , feeding into mixing unit Solids Ex. CB, Si; Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils; Mixing in closed mixing unit (i.e. Banbury mixer); Open mill mixing; Steering mill dispersing; Intermediate compound storage; Compound transfer into a vessel, mixing and transfering cement into portable drums; Transferring cement into portable drums; Drying and/or solvents evaporation; Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation; Cement and paint application; Compound processing; Cooling extruded compound; Feeding from stock, milling, and feeding the calendar; Treatment with releasing agents Applied on tyre (cold); Equipment treatment with manual application of releasing agents on surfaces.
Applied on mould (warm); Compound assembling from stocks; Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)

Table 269.

As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.

3.23.4 Contributing Scenario (4) controlling consumer exposure for PC 24

General Rubber Goods_Article Service Life Filling silos or temporary bins (typically outdoors), Filling tanks (indoors or outdoors) - For liquids; Transferring substances into small containers Solids (typically indoors); Storage in closed, dust sealed cargo bins Big bag (typically indoors); Storage and packaging transfer into

tanks and drums Liquids (typically indoors); Weighting substances by hand or automatically in a dose bin. Example : small container at balance containing plastic bags; Grinding in jars or other grinding machines. Ingredients added manually or automatically. Dispersion poured into containers; Manual metering, weighting possible, mainly synthetic rubbers and mixtures; Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans; Automatic substance metering , feeding into mixing unit Solids Ex. CB, Si; Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils; Mixing in closed mixing unit (i.e. Banbury mixer); Open mill mixing; Steering mill dispersing; Intermediate compound storage; Compound transfer into a vessel, mixing and transfering cement into portable drums; Transferring cement into portable drums; Drying and/or solvents evaporation; Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation; Cement and paint application; Compound processing; Cooling extruded compound; Feeding from stock, milling, and feeding the calendar; Treatment with releasing agents Applied on tyre (cold); Equipment treatment with manual application of releasing agents on surfaces.
Applied on mould (warm); Compound assembling from stocks; Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)

Table 270.

As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.

3.23.5 Contributing Scenario (5) controlling consumer exposure for PC 32
General Rubber Goods_Article Service Life Filling silos or temporary bins (typically outdoors), Filling tanks (indoors or outdoors) - For liquids; Transferring substances into small containers Solids (typically indoors); Storage in closed, dust sealed cargo bins Big bag (typically indoors); Storage and packaging transfer into tanks and drums Liquids (typically indoors); Weighting substances by hand or automatically in a dose bin. Example : small container at balance containing plastic bags; Grinding in jars or other grinding machines. Ingredients added manually or automatically. Dispersion poured into containers; Manual metering, weighting possible, mainly synthetic rubbers and mixtures; Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans; Automatic substance metering , feeding into mixing unit Solids Ex. CB, Si; Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils; Mixing in closed mixing unit (i.e. Banbury mixer); Open mill mixing; Steering mill dispersing; Intermediate compound storage; Compound transfer into a vessel, mixing and transfering cement into portable drums; Transferring cement into portable drums; Drying and/or solvents evaporation; Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation; Cement and paint application; Compound processing; Cooling extruded compound; Feeding from stock, milling, and feeding the calendar; Treatment with releasing agents Applied on tyre (cold); Equipment treatment with manual application of releasing agents on surfaces.
Applied on mould (warm); Compound assembling from stocks; Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)

Table 271.

As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.

3.24 Scenario 24: General Rubber Goods_Article Service Life (GRG, GRG1)

The following RCR calculations refer to the contributing scenarios described in chapter 2.24

3.24.1 Contributing Scenario (1) controlling environmental exposure for ERC11A *General Rubber Goods_Article Service Life*

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

3.24.1.1 Aquatic compartment (including sediment)

Table 272.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Freshwater	4.04E-6 mg/L	0.0005 mg/L	0.008084	67.784
Freshwater sediment	0.000261 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.007491	73.148
Marine water	3.96E-7 mg/L	0.00005 mg/L	0.007919	69.198
Marine water sediment	0.000026 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.007296	75.102

3.24.1.2 Terrestrial compartment

Table 273.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Agricultural soil	0.00003 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000103	2.84E4

Grassland	5.66E-6 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000019	-

3.24.1.3 Microbiological activity in sewage treatment systems

Table 274.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
STP	0.000018 mg/L	100 mg/L	1.83E-7	3.00E6

3.24.2 Contributing Scenario (2) controlling consumer exposure for PC 9a

General Rubber Goods_Article Service Life Filling silos or temporary bins (typically outdoors), Filling tanks (indoors or outdoors) - For liquids; Transferring substances into small containers Solids (typically indoors); Storage in closed, dust sealed cargo bins Big bag (typically indoors); Storage and packaging transfer into tanks and drums Liquids (typically indoors); Weighting substances by hand or automatically in a dose bin. Example : small container at balance containing plastic bags; Grinding in jars or other grinding machines. Ingredients added manually or automatically. Dispersion poured into containers; Manual metering, weighting possible, mainly synthetic rubbers and mixtures; Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans; Automatic substance metering , feeding into mixing unit Solids Ex. CB, Si; Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils; Mixing in closed mixing unit (i.e. Banbury mixer); Open mill mixing; Steering mill dispersing; Intermediate compound storage; Compound transfer into a vessel, mixing and transfering cement into portable drums; Transferring cement into portable drums; Drying and/or solvents evaporation; Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation; Cement and paint application; Compound processing; Cooling extruded compound; Feeding from stock, milling, and feeding the calendar; Treatment with releasing agents Applied on tyre (cold); Equipment treatment with manual application of releasing agents on surfaces.

Applied on mould (warm); Compound assembling from stocks; Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)

Table 275.

As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.

3.24.3 Contributing Scenario (3) controlling consumer exposure for PC 24

General Rubber Goods_Article Service Life Filling silos or temporary bins (typically outdoors), Filling tanks (indoors or outdoors) - For liquids; Transferring substances into small containers Solids (typically indoors); Storage in closed, dust sealed cargo bins Big bag (typically indoors); Storage and packaging transfer into tanks and drums Liquids (typically indoors); Weighting substances by hand or automatically in a dose bin. Example : small container at balance containing plastic bags; Grinding in jars or other grinding machines. Ingredients added manually or automatically. Dispersion poured into containers; Manual metering, weighting possible, mainly synthetic rubbers and mixtures; Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans; Automatic substance metering , feeding into mixing unit Solids Ex. CB, Si; Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils; Mixing in closed mixing unit (i.e. Banbury mixer); Open mill mixing; Steering mill dispersing; Intermediate compound storage; Compound transfer into a vessel, mixing and transfering cement into portable drums; Transferring cement into portable drums; Drying and/or solvents evaporation; Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation; Cement and paint application; Compound processing; Cooling extruded compound; Feeding from stock, milling, and feeding the calendar; Treatment with releasing agents Applied on tyre (cold); Equipment treatment with manual application of releasing agents on surfaces.

Applied on mould (warm); Compound assembling from stocks; Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)

Table 276.

As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.

3.24.4 Contributing Scenario (4) controlling consumer exposure for PC 24

General Rubber Goods_Article Service Life Filling silos or temporary bins (typically outdoors), Filling tanks (indoors or outdoors) - For liquids; Transferring substances into small containers Solids (typically indoors); Storage in closed, dust sealed cargo bins Big bag (typically indoors); Storage and packaging transfer into tanks and drums Liquids (typically indoors); Weighting substances by hand or automatically in a dose bin. Example : small container at balance containing plastic bags; Grinding in jars or other grinding machines. Ingredients added manually or automatically. Dispersion poured into containers; Manual metering, weighting possible, mainly synthetic rubbers and mixtures; Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans; Automatic substance metering , feeding into mixing unit Solids Ex. CB, Si; Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils; Mixing in closed mixing unit (i.e. Banbury mixer); Open mill mixing; Steering mill dispersing; Intermediate compound storage; Compound transfer into a vessel, mixing and transfering cement into portable drums; Transferring cement into portable drums; Drying and/or solvents evaporation; Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation; Cement and paint application; Compound processing; Cooling extruded compound; Feeding from stock, milling, and feeding the calendar; Treatment with releasing agents Applied on tyre (cold); Equipment treatment with manual application of releasing agents on surfaces.

Applied on mould (warm); Compound assembling from stocks; Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)

Table 277.

As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.

3.24.5 Contributing Scenario (5) controlling consumer exposure for PC 32
General Rubber Goods_Article Service Life Filling silos or temporary bins (typically outdoors), Filling tanks (indoors or outdoors) - For liquids; Transferring substances into small containers Solids (typically indoors); Storage in closed, dust sealed cargo bins Big bag (typically indoors); Storage and packaging transfer into tanks and drums Liquids (typically indoors); Weighting substances by hand or automatically in a dose bin. Example : small container at balance containing plastic bags; Grinding in jars or other grinding machines. Ingredients added manually or automatically. Dispersion poured into containers; Manual metering, weighting possible, mainly synthetic rubbers and mixtures; Evacuation of the warm compound, treatment of the rubber sheet using antitack bath (water-based) and drying with cooling fans; Automatic substance metering , feeding into mixing unit Solids Ex. CB, Si; Automatic substance metering in closed feeding system, injection into mixing chamber Liquids Ex silane, oils; Mixing in closed mixing unit (i.e. Banbury mixer); Open mill mixing; Steering mill dispersing; Intermediate compound storage; Compound transfer into a vessel, mixing and transfering cement into portable drums; Transferring cement into portable drums; Drying and/or solvents evaporation; Rubber latex and water dispersed ingredients deposit into a thin layer by coagulation; Cement and paint application; Compound processing; Cooling extruded compound; Feeding from stock, milling, and feeding the calendar; Treatment with releasing agents Applied on tyre (cold); Equipment treatment with manual application of releasing agents on surfaces.
Applied on mould (warm); Compound assembling from stocks; Vulcanization, evacuation of cured article and fumes, cooling (for continuous processes)

Table 278.

As no human health hazard was identified no consumer-related exposure assessment and risk characterization was performed.

3.25 Scenario 25: Distribution (FECC 1.1, FECC 1.2, FECC 1.3, FECC 1.4)

The following RCR calculations refer to the contributing scenarios described in chapter 2.25

3.25.1 Contributing Scenario (1) controlling environmental exposure for ERC2 *Distribution*
The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

3.25.1.1 Aquatic compartment (including sediment)

Table 279.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Freshwater	2.22E-6 mg/L	0.0005 mg/L	0.004438	1,502.166
Freshwater sediment	0.000143 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.004113	1,621.028
Marine water	2.14E-7 mg/L	0.00005 mg/L	0.004273	1,560.207
Marine water sediment	0.000014 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.003937	1,693.338

3.25.1.2 Terrestrial compartment

Table 280.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Agricultural soil	9.91E-7 mg/kg_{dwt}	0.293 mg/kg_{dwt}	3.38E-6	2.09E6
Grassland	9.33E-7 mg/kg_{dwt}	0.293 mg/kg_{dwt}	3.18E-6	-

3.25.1.3 Microbiological activity in sewage treatment systems

Table 281.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
STP	4.45E-8 mg/L	100 mg/L	4.45E-10	1.50E10

3.25.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 8A
Distribution Uploading / unloading

Table 282.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.25.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 8B *Distribution Uploading / unloading*

Table 283.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.25.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 1 *Distribution StoringUploading / unloading Forwarding (closed System)*

Table 284.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.25.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 9 *Distribution Repacking*

Table 285.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.25.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 2 *Distribution Sampling*

Table 286.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.26 Scenario 26: Distribution;Q Controlling (FECC 1.6)

The following RCR calculations refer to the contributing scenarios described in chapter 2.26

3.26.1 Contributing Scenario (1) controlling environmental exposure for ERC8B *Distribution;Q Controlling*

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

3.26.1.1 Aquatic compartment (including sediment)

Table 287.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Freshwater	0.000075 mg/L	0.0005 mg/L	0.15061	3.638
Freshwater sediment	0.004857 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.139566	3.926
Marine water	7.52E-6 mg/L	0.00005 mg/L	0.150444	3.642
Marine water sediment	0.000485 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.138616	3.953

3.26.1.2 Terrestrial compartment

Table 288.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Agricultural soil	0.001168 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.003987	841.647
Grassland	0.000191 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000651	-

3.26.1.3 Microbiological activity in sewage treatment systems

Table 289.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
STP	0.000732 mg/L	100 mg/L	7.32E-6	7.49E4

3.26.2 Contributing Scenario (2) controlling professional worker exposure for PROC 15
Distribution;Q Controlling Q Controlling

Table 290.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.27 Scenario 27: Formulating (FECC 2.1, FECC 2.2, FECC 2.3, FECC 2.4)

The following RCR calculations refer to the contributing scenarios described in chapter 2.27

3.27.1 Contributing Scenario (1) controlling environmental exposure for ERC2 *Formulating*

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

3.27.1.1 Aquatic compartment (including sediment)

Table 291.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Freshwater	0.000113 mg/L	0.0005 mg/L	0.226745	1.47E4
Freshwater sediment	0.007312 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.210119	1.59E4
Marine water	0.000011 mg/L	0.00005 mg/L	0.22658	1.47E4
Marine water sediment	0.000731 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.208766	1.60E4

3.27.1.2 Terrestrial compartment

Table 292.

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**	**MSafe kg/d**
Agricultural soil	0.002673 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.009122	7.28E5
Grassland	0.001342 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.004579	-

3.27.1.3 Microbiological activity in sewage treatment systems

Table 293.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
STP	0.001113 mg/L	100 mg/L	0.000011	3.00E8

3.27.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 3 *Formulating*
Closed System Mixing

Table 294.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.27.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 4 *Formulating*
Batch Mixing : Limited Exposure

Table 295.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.27.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 5 *Formulating*
Batch Mixing : Significant Contact

Table 296.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.27.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 14 *Formulating*
Compressing, Extruding, Tabletting

Table 297.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.28 Scenario 28: Manufacturing (Manufacturing)

The following RCR calculations refer to the contributing scenarios described in chapter 2.28

3.28.1 Contributing Scenario (1) controlling environmental exposure for ERC1 *Manufacturing*

The quantitative risk characterisation for this environmental exposure has been calculated using EasyTRA.

The environmental exposure calculation per compartment is based on the algorithms of the EU TGD 2003 Risk Assessment Spreadsheet Model 1.24a.

3.28.1.1 Aquatic compartment (including sediment)

Table 298.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
Freshwater	0.000013 mg/L	0.0005 mg/L	0.026661	1.25E5
Freshwater sediment	0.00086 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.024706	1.35E5
Marine water	1.32E-6 mg/L	0.00005 mg/L	0.026496	1.26E5
Marine water sediment	0.000085 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.024413	1.37E5

3.28.1.2 Terrestrial compartment

Table 299.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
Agricultural soil	0.000179 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000609	3.27E7
Grassland	0.00003 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000102	-

3.28.1.3 Microbiological activity in sewage treatment systems

Table 300.

Compartments	PEC	PNEC	RCR = PEC/PNEC	MSafe kg/d
STP	0.000111 mg/L	100 mg/L	1.11E-6	3.00E9

3.28.2 Contributing Scenario (2) controlling industrial worker exposure for PROC 1
Manufacturing - General process exposures (no sampling) - continuous (closed system)

Table 301.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.28.3 Contributing Scenario (3) controlling industrial worker exposure for PROC 2
Manufacturing - General process exposures and sample collection - continuous (closed system with occasional controlled exposure)

Table 302.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.28.4 Contributing Scenario (4) controlling industrial worker exposure for PROC 3 *Manufacturing - General process exposures - batch (closed system)*

Table 303.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.28.5 Contributing Scenario (5) controlling industrial worker exposure for PROC 4 *Manufacturing - General exposures open batch process*

Table 304.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.28.6 Contributing Scenario (6) controlling industrial worker exposure for PROC 8B *Manufacturing - Sample collection*

Table 305.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.28.7 Contributing Scenario (7) controlling industrial worker exposure for PROC 15 *Manufacturing - Laboratory activities*

Table 306.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.28.8 Contributing Scenario (8) controlling industrial worker exposure for PROC 8B *Manufacturing*
- Bulk transfers including loading/unloading of road cars etc

Table 307.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.28.9 Contributing Scenario (9) controlling industrial worker exposure for PROC 8A *Manufacturing*
- Clean down and Maintenance

Table 308.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.28.10 Contributing Scenario (10) controlling industrial worker exposure for PROC 2 *Manufacturing*
- Material storage

Table 309.

As no human health hazard was identified no worker-related exposure assessment and risk characterization was performed.

3.29 Overall exposure (combined for all relevant emission/release sources)

3.29.1 Local release of all wide dispersive uses (including regional exposure)

The regional exposure represents the steady-state concentration of a given substance in the environmental compartments after all partitioning and degradation processes have been taken into account. In addition the aggregated emissions from all wide dispersive uses at a local STP are considered as well. From the calculated predicted environmental concentrations (PECs) and the corresponding predicted no-effect concentrations (PNECs) risk characterization ratios (RCRs) for the standard region are derived the same way as for the local scale. The calculations of the regional PECs were performed utilizing the SimpleBox Model as proposed by the TGD, local emissions at the STP were calculated using the formulae given in the TGD.

3.29.1.1 Aquatic compartment (including sediment)

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**
Freshwater	0.000108 mg/L	0.0005 mg/L	0.215096
Freshwater sediment	0.003879 mg/kg_{dwt}	0.0348 mg/kg_{dwt}	0.11146
Marine water	0.000011 mg/L	0.00005 mg/L	0.214931
Marine water sediment	0.000387 mg/kg_{dwt}	0.0035 mg/kg_{dwt}	0.110633

3.29.1.2 Terrestrial compartment

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**
Agricultural soil	0.001683 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.005744
Grassland	0.000274 mg/kg_{dwt}	0.293 mg/kg_{dwt}	0.000936

3.29.1.3 Microbiological activity in sewage treatment systems

Compartments	**PEC**	**PNEC**	**RCR = PEC/PNEC**
STP	0.001054 mg/L	100 mg/L	0.000011

3.29.3.1 Total releases

Release route	Total releases per year
water	14.432 to/year
air	0.930876 to/year
soil	0.210762 to/year