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

1.1 Product identifier

Sales No. : 1534001
CYCLAMEN ALDEHYDE EXTRA

Substance name : 2-METHYL-3-(4-ISOPROPYLPHENYL)PROPANAL
Identifier
CAS-No. : 103-95-7
EC-No. : 203-161-7
Formula : C13-H18-O
REACH Registration Number : 01-2119970582-32

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

Intended Use Fragrances : Perfumery or flavor ingredient

1.3 Details of the supplier of the safety data sheet

Company :
Givaudan Suisse SA
Chemin de la Parfumerie 5
CH-1214 VERNIER

Telephone : +41227809111
Telefax : +41227809150
E-mail address : global.sds_info@givaudan.com
Responsible/issuing person

Legal Entity : Givaudan France SAS
55 Voie des Bans
F-95102 ARGENTEUIL

1.4 Emergency telephone number

Givaudan 24/7 call : +33172110003

Please refer to section 16 for a full list of emergency phone numbers, from Givaudan's 24/7 provider.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin irritation, Category 2	H315: Causes skin irritation.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Reproductive toxicity, Category 2	H361: Suspected of damaging fertility or the

	unborn child.
Long-term (chronic) aquatic hazard, Category 3	H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word	:	Warning	
Hazard statements	:	H315	Causes skin irritation.
		H317	May cause an allergic skin reaction.
		H361	Suspected of damaging fertility or the unborn child.
		H412	Harmful to aquatic life with long lasting effects.
Precautionary statements	:	**Prevention:**	
		P201	Obtain special instructions before use.
		P261	Avoid breathing mist or vapours.
		P264	Wash skin thoroughly after handling.
		P273	Avoid release to the environment.
		P280	Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.
		Response:	
		P308 + P313	IF exposed or concerned: Get medical advice/ attention.

Hazardous components which must be listed on the label:

- 2-methyl-3-(4-isopropylphenyl)propanal 103-95-7
- Benzenepropanol, .beta.-methyl-4-(1-methylethyl)- 4756-19-8

2.3 Other hazards

Hazards not Otherwise Classified. : None

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	CAS-No. EC-No. REACH Registration Number	Concentration [Percent by weight]	M-Factor, SCL, ATE
2-methyl-3-(4-isopropylphenyl)propanal	103-95-7 203-161-7 01-2119970582-32	>= 90 - <= 100	
Benzenepropanol, .beta.-methyl-4-(1-methylethyl)-	4756-19-8 225-289-2	>= 1 - < 5	Acute toxicity estimate Acute oral toxicity:> 5 000,00 mg/kg

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Do not leave the victim unattended.
Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.

If inhaled : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : If on skin, rinse well with water.
If on clothes, remove clothes.
Immediately seek medical attention if chemical entered ear canal.
If skin irritation persists, call a physician.

In case of eye contact : Protect unharmed eye.
Remove contact lenses.

Flush eyes with water as a precaution.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Immediately consult Poison Control Center or physician.
Keep respiratory tract clear.
Do NOT induce vomiting.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : no data available

Risks : Causes skin irritation.
May cause an allergic skin reaction.
Suspected of damaging fertility or the unborn child.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment :
Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Exposure to decomposition products may be a hazard to health.
Cool closed containers exposed to fire with water spray.
Do not allow run-off from fire fighting to enter drains or water courses.

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information : In the event of fire and/or explosion do not breathe fumes.
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Keep people away from and upwind of spill/leak.
For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.
Material can create slippery conditions.
Use personal protective equipment.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : Clean contaminated floors and objects thoroughly while observing environmental regulations.
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

Not applicable

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.
Temperature class : no data available
Fire-fighting class : no data available
Dust explosion class : no data available

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards.
Further information on storage conditions	:	Store Ambient 10-30℃ (50-85℉) Dry, well ventilated, preferably full, hermetically sealed
Advice on common storage	:	Protect against light.Store under nitrogen
Storage class (TRGS 510)	:	10 Combustible liquids
Other data	:	No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Please refer to attached exposure scenarios.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

DNEL	:	End Use: Consumer use Exposure routes: Dermal Potential health effects: Long-term systemic effects Value: 0,13 mg/kg bw/day
DNEL	:	End Use: Consumer use Exposure routes: Inhalation Potential health effects: Long-term systemic effects Value: 0,22 mg/m3
DNEL	:	End Use: Consumer use Exposure routes: Oral Potential health effects: Long-term systemic effects Value: 0,13 mg/kg bw/day
DNEL	:	End Use: Workers Exposure routes: Dermal Potential health effects: Long-term systemic effects Value: 0,35 mg/kg bw/day
DNEL	:	End Use: Workers Exposure routes: Inhalation Potential health effects: Long-term systemic effects Value: 1,23 mg/m3

PNEC	:	Fresh water Value: 0,0088 mg/l
PNEC	:	Marine water Value: 0,00088 mg/l
PNEC	:	Oral Value: 2,0 mg/kg
PNEC	:	Fresh water sediment Value: 1,02 mg/kg dry weight (d.w.)
PNEC	:	Marine sediment Value: 0,102 mg/kg dry weight (d.w.)
PNEC	:	Soil Value: 0,199 mg/kg dry weight (d.w.)
PNEC	:	Sewage treatment plant Value: 1,0 mg/l

8.2 Exposure controls

Exposure assessment: Exposures are dependent on the product being handled, the potential for chemical release, and any resulting airborne concentrations or dermal contact. Since product handling and release scenarios vary, and no two workplaces are exactly alike, it is recommended that the potential for exposure be assessed prior to the prod-uct's use or introduction. Exposure assessments should be performed by an occupational hygienist, industrial hygienist, or other qualified occupational or environmental health professional. An exposure assessment should be conducted to determine the efficacy of any ventilation and the need for additional PPE. The PPE indicated below are recommendations for worst-case scenario exposures. An exposure assessment will identify more applicable measures to be implemented. EN and ANSI standards are mentioned in the following recommendations, consult equivalent local standards when required.
PPE is always the last resort to avoid exposure. In any case technical and organisational measures have to be explored and used prior to the selection of PPE. The PPE selection is for operators trained to work with chemicals according to good industrial hygiene and safety practice. Operators have to be trained on the use of PPE.

8.2.1 Engineering measures

Use engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use the product only with adequate ventilation.

8.2.2 Personal protective equipment

Eye/face protection	:	Use safety goggles tested according to EN 166/ ANSI Z87.1 or equivalent local standard.
Hand protection	:	Use gloves when handling substance in open systems. Inspect gloves prior to use. Train operators for proper use.If only incidental exposure is expected: (work without direct contact to substance) use gloves tested according EN 16523-1/ASTM F739 or equivalent local standard breakthrough times at least 10 minutes, tested for chemicals indicated in chapter 3 of this SDS. Change gloves frequently. If direct skin contact is expected: use gloves tested according to EN 16523-1/ASTM F739 or equivalent local standard, tested for chemicals indicated in chapter 3 of this SDS. Permeation time must exceed contact time.
Other skin protection	:	Wear working clothes covering arms and legs. The type of protective equipment must be selected according to the concentration and amount of the hazardous substance at the specific workplace. Use apron and sleeve covers or complete chemical suit if exposure is expected.
Respiratory protection	:	Respiratory protection should be worn when workplace exposures exceed exposure limit requirements or guidelines. If there are no applicable exposure limits or guidelines, use an approved respirator where there is a potential for adverse effects, including but not limited to respiratory irritation or odor, or where indicated by the exposure assessment. Selection of air-purifying or positive-pressure supplied-air will depend on the results of the exposure assessment which includes an evaluation of the specific operations and the potential airborne concentrations. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. In case a risk analysis proved the cartridge respirator as acceptable, use type: ABEK-P3 (EN 14387) OR Combination Multi-gas/P100 (42CFR84.193; ANSI Z88.7 or equivalent local standard) as a backup to engineering controls. In absence of engineering controls, use self-contained breathing apparatus or full face supplied air respirators. Use respirators and components tested and approved under appropriate government standards such as CEN (EU) or NIOSH 42 CFR 84(US).
Thermal hazards	:	Wear appropriate thermal protective clothing, when necessary.
Hygiene measures	:	Remove contaminated clothing and protective equipment before entering eating areas. Do not eat, drink or smoke during work.

Wash hands any time after handling the product.

8.2.3 Environmental exposure controls

General advice	:	Prevent product from entering drains. If the product contaminates rivers and lakes or drains inform respective authorities.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	liquid
Form	:	liquid
Colour	:	colorless to Pale yellow
Taste	:	not determined
Odour	:	Floral, Fresh, Lily-of-the-valley, Green
Odour Threshold	:	2,5198 ng/l
Flash point	:	79,5 ℃ Method: Pensky-Martens closed cup ISO 2719
Lower explosion limit	:	not determined
Upper explosion limit	:	not determined
Flammability	:	no data available
Particle size	:	no data available
Oxidizing properties	:	The substance or mixture is not classified as oxidizing. Information taken from reference works and the literature.
Auto-ignition temperature	:	250 ℃ Method: DIN 51794
Decomposition temperature	:	no data available
Molecular weight	:	190,30 g/mol
pH	:	no data available
Melting point	:	< -50 ℃
Boiling point	:	234 ℃ at 1 013 hPa
Vapour pressure	:	0,003 hPa at 20 ℃ Method: OECD Test Guideline 104
Density	:	948,29 kg/m3 at 20 ℃
Bulk density	:	Not applicable
Water solubility	:	66 mg/l at 20 ℃
Solubility/qualitative	:	practically insoluble
Partition coefficient: n-octanol/water	:	log Pow: 3,4 Method: OECD Test Guideline 117
Viscosity, kinematic	:	7,1 mm2/s at 20 ℃ Method: OECD Test Guideline 114
Relative vapour density	:	no data available
Surface tension	:	45,9 mN/m at 21 ℃ Method: OECD Test Guideline 115
Evaporation rate	:	no data available
Explosive properties	:	Not explosive

9.2 Other information

Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : No decomposition if stored and applied as directed.

10.4 Conditions to avoid

Conditions to avoid : no data available

10.5 Incompatible materials

Materials to avoid : Not applicable

10.6 Hazardous decomposition products

Hazardous decomposition products : no data available

Thermal decomposition : no data available

SECTION 11: Toxicological information

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

Acute toxicity

Not classified due to lack of data.

Product:

Acute oral toxicity : Acute toxicity estimate
Dose > 2000 mg/kg
Method: Calculation method

Components:

Benzenepropanol, .beta.-methyl-4-(1-methylethyl)-:

Acute oral toxicity : LD50 (Rat): > 5 000,00 mg/kg

Skin corrosion/irritation

Causes skin irritation.

Product:

Species	:	Rabbit
Result	:	Skin irritation
Remarks	:	May cause skin irritation and/or dermatitis.

Serious eye damage/eye irritation

Not classified due to lack of data.

Product:

Remarks	:	Vapours may cause irritation to the eyes, respiratory system and the skin.

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified due to lack of data.

Product:

Remarks	:	Causes sensitisation.

Phototoxicity

Phototoxicity	:	UV-VIS absorption spectra Result:negative

Germ cell mutagenicity

Not classified due to lack of data.

Product:

Genotoxicity in vitro	:	Test Type: Ames test Result: negative GLP: yes Test Type: Micronucleus test Test system: In vitro Result: negative GLP: yes Test Type: In vitro mammalian cell gene mutation test Test system: In vitro Result: negative GLP: yes

Carcinogenicity

Not classified due to lack of data.

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

STOT - single exposure

Not classified due to lack of data.

STOT - repeated exposure

Not classified due to lack of data.

Repeated dose toxicity

Product:

Species	:	Rat, male and female
NOAEL	:	30 mg/kg
Application Route	:	Oral
Exposure time	:	90d
Method	:	OECD Test Guideline 408
GLP	:	yes

Species	:	Rat, male and female
NOAEL	:	25 mg/kg
Application Route	:	Oral
Method	:	OECD Test Guideline 415
GLP	:	yes

Species	:	Rat, male and female
NOAEL	:	75 mg/kg
Application Route	:	Oral
Method	:	OECD Test Guideline 414
GLP	:	yes

Aspiration toxicity

Not classified due to lack of data.

11.2 Information on other hazards

Endocrine disrupting properties

Not classified due to lack of data.

Product:

Assessment	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Further information

Product:

Remarks	:	no data available

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish	:	LC50 : 2,49 mg/l Exposure time: 96 h Remarks: The value is given based on a SAR/AAR approach using OECD Toolbox, DEREK, VEGA QSAR models (CAESAR models), etc.
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 1,4 mg/l Exposure time: 48 h Test Type: semi-static test Method: OECD Test Guideline 202 GLP: yes
Toxicity to algae/aquatic plants	:	EC50 (Raphidocelis subcapitata (freshwater green alga)): 4,3 mg/l Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 GLP: yes EC10 (Raphidocelis subcapitata (freshwater green alga)): 2,6 mg/l Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 GLP: yes
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,44 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: semi-static test Method: OECD Test Guideline 211 GLP: yes Remarks: Based on data from similar materials

Ecotoxicology Assessment

Chronic aquatic toxicity	:	Harmful to aquatic life with long lasting effects.

12.2 Persistence and degradability

Product:

Biodegradability	:	Result: Readily biodegradable. Biodegradation: 66 % Exposure time: 28 d Method: OECD Test Guideline 301 B

GLP: yes

12.3 Bioaccumulative potential

Product:

Bioaccumulation	:	Bioconcentration factor (BCF): 155 Remarks: The value is given based on a SAR/AAR approach using OECD Toolbox, DEREK, VEGA QSAR models (CAESAR models), etc. Bioconcentration factor (BCF): 80 Remarks: The value is given based on a SAR/AAR approach using OECD Toolbox, DEREK, VEGA QSAR models (CAESAR models), etc. Bioconcentration factor (BCF): 76 - 125 Remarks: The value is given based on a SAR/AAR approach using OECD Toolbox, DEREK, VEGA QSAR models (CAESAR models), etc.

12.4 Mobility in soil

Product:

Distribution among environmental compartments	:	OECD Test Guideline 121 log Koc: 3,05 Method: OECD Test Guideline 121

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Product:

Additional ecological information	:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	Send to a licensed waste management company. Dispose of in accordance with local, state and federal regulations. The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container.
Contaminated packaging	:	Do not expose containers to high temperatures such as in hot work processes. Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

Dispose of in accordance with local regulations.

SECTION 14: Transport information

14.1 UN number

N/A

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

N/A

14.4 Packing group

N/A

14.5 Environmental hazards

N/A

14.6 Special precautions for user

IMDG

IMDG Code Segregation Group	:	None

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : Conditions of restriction for the following entries should be considered:
Number on list 3

Number on list 75: If you intend to use this product as tattoo ink, please contact your vendor.

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Neither banned nor restricted

REACH - List of substances subject to authorisation (Annex XIV) : Neither banned nor restricted

Major Accident Hazard Legislation : Not applicable

Water hazard class (Germany) : WGK 2 obviously hazardous to water
Classification according to AwSV, Annex 1 (5.2)

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Full list of Emergency response numbers worldwide.

	Country	Phone nr		Country	Phone nr
Europe	All Europe	+44 1235 239670	APAC	All East/South East Asia	+65 3158 1074
	France	+33 1 72 11 00 03		Sri Lanka	+65 3158 1195
	Germany	+49 89 220 61012		Taiwan	+886 2 8793 3212
	Spain	+34 91 114 2520		Japan	0120 015 230
	Italy	800 699 792		Indonesia	007 803 011 0293

Administrative information:
Report Information: SDS_FR/EN/GHS_SDS_EU_CNTRY/46
Sales & Distribution Information: VE01/FR/CH11/01
Shipping Order Information: 36 299 614/32 763 875

	Netherlands	+31 10 713 8195		Malaysia	+60 3 6207 4347
	Turkey	0800 621 2139 +44 1235 239670		Thailand	001 800 120 666 751
	Norway	+47 2103 4452		India	+65 3158 1198 000 800 100 7479
	Greece	+30 21 1198 3182		Pakistan	+65 3158 1329
	Portugal	+351 30880 4750		Bangladesh	+65 3158 1200
	Denmark	+45 8988 2286		Philippines	+63 2 8231 2149
	Sweden	+46 8 566 42573		Vietnam	+84 28 4458 2388
	Poland	+48 22 307 3690		Korea	+65 3158 1285
	Czech replublic	+420 228 882 830		South Korea	+82 2 3479 8401
	Finland	+358 9 7479 0199		Australia	+61 2 8014 4558
Middle East/Africa	All Middle East/Africa	+44 1235 239671		New Zealand	+64 9 929 1483
	Bahrain and Middle East	+44 1235 239671		China	+86 532 8388 9090
	Africa/South Africa	+27 21 300 2732	LATAM	Mexico	+52 55 5004 8763
NOAM	USA and Canada	+1 866 928 0789		Brazil	+55 11 3197 5891
	USA and Canada	+1 215 207 0061		Chile	+56 2 2582 9336
	USA and Canada	+1 202 464 2554		Colombia	+57 1 508 7337
Global	Global	+44 1865 407333		Argentina	+54 11 5984 3690

Administrative information:
Report Information: SDS_FR/EN/GHS_SDS_EU_CNTRY/46
Sales & Distribution Information: VE01/FR/CH11/01
Shipping Order Information: 36 299 614/32 763 875

Key or legend to abbreviations and acronyms used in the safety data sheet

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GB EH40 - Great Britain Environmental Hygiene; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; NOM-010-STPS - Official Mexican Standard, Ministry of Labor and Social Welfare; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Information displayed in section 3 (Composition/information on ingredients) is additional information to understand the hazards of the product and ensure safe handling, storage and transportation. This information, including CAS numbers, is not meant to be used for registration, notification or any other purposes. Any additional information and documentation needed may be provided by Givaudan.

Annex

Exposure Scenario

Number	Title
ES1	Formulation of fragrance compounds (mixing of fragrance substances into fragrance compounds)
ES2	Formulation of fragranced end-products (mixing of fragrance compounds into fragranced end-products)
ES3	Industrial end-use of washing and cleaning products
ES4	Professional end-use of washing and cleaning products
ES5	Professional end-use of polishes and wax blends
ES6	Consumer end-use of washing and cleaning products
ES7	Consumer end-use of air care products
ES8	Consumer end-use of biocides
ES9	Consumer end-use of polishes and wax blends
ES10	Consumer (and Professional) end-use of cosmetics

1. ES 1: Formulation or re-packing; Formulation of fragrance compounds (mixing of fragrance substances into fragrance compounds)

1.1. Title section

ES name: GES 1; Formulation of fragrance compounds (mixing of fragrance substances into fragrance compounds)

Environment	
1: GES 1; Formulation of fragrance compounds (mixing of fragrance substances into fragrance compounds); medium; Large scale; AISE SPERC 2.1.a.v1	ERC 2
2: GES 1; Formulation of fragrance compounds (mixing of fragrance substances into fragrance compounds); Small scale; AISE SPERC 2.1.b.v1	ERC 2
Worker	
3: CS1; Transfer of substance or mixture (charging/discharging) at dedicated facilities; IFRA F-1	PROC 8b
4: CS2; Storage; IFRA F-2	PROC 1
5: CS3; Mixing operations; Closed systems; Filling of articles/equipment; With sample collection; IFRA F-3	PROC 3
6: CS4; Mixing operations; Open systems; Filling of articles/equipment; With sample collection; IFRA F-4	PROC 5
7: CS5; Laboratory activities; Use as laboratory reagent; IFRA F-5	PROC 15
8: CS6; Transfer of substance or mixture into small containers (dedicated filling line, including weighing); IFRA F-6	PROC 9
9: CS7; Equipment cleaning and maintenance; IFRA F-7	PROC 8a

1.2. Conditions of use affecting exposure

1.2.1. Control of environmental exposure: GES 1; Formulation of fragrance compounds (mixing of fragrance substances into fragrance compounds); medium; Large scale; AISE SPERC 2.1.a.v1 (ERC 2)

Amount used, frequency and duration of use (or from service life)

Annual amount per site <= 105 tonnes/year
Daily amount per site <= 0.42 tonnes/day
Conditions and measures related to biological sewage treatment plant
Municipal sewage treatment plant is assumed.
application of the STP sludge on agricultural soil; Yes
Assumed domestic sewage treatment plant flow; >=; 2E3; m3/day
Other conditions affecting environmental exposure
Receiving surface water flow >= 1.8E4 m3/day

1.2.2. Control of environmental exposure: GES 1; Formulation of fragrance compounds (mixing of fragrance substances into fragrance compounds); Small scale; AISE SPERC 2.1.b.v1 (ERC 2)

Amount used, frequency and duration of use (or from service life)
Daily amount per site <= 0.18 tonnes/day
Annual amount per site <= 45 tonnes/year
Conditions and measures related to biological sewage treatment plant
Municipal sewage treatment plant is assumed.
Assumed domestic sewage treatment plant flow; >=; 2E3; m3/day
application of the STP sludge on agricultural soil; Yes
Other conditions affecting environmental exposure
Receiving surface water flow >= 1.8E4 m3/day

1.2.3. Control of worker exposure

Conditions of use applicable to all contributing scenarios

Product (article) characteristics
Liquid
Technical and organisational conditions and measures
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.; Ensure regular inspection, cleaning and maintenance of equipment and machines.; Clear spills immediately.; Ensure daily cleaning of the equipment.
Conditions and measures related to personal protection, hygiene and health evaluation
Face/eye protection; No.
Other conditions affecting workers exposure
Indoor use

Specific conditions of use per contributing scenario

Contributing scenario	Specific conditions of use
CS1; Transfer of substance or mixture (charging/discharging) at dedicated facilities; IFRA F-1 (PROC 8b)	Covers concentrations up to 100 % Covers use up to 3.5 h/day Room ventilation; Basic; Up to 3 air change per hour Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; Wear a respirator which reduces the air impurities by at least a factor of 20 (APF >= 20). For further specification, refer to section 8 of the SDS Assumes process temperature up to 40 ℃
CS2; Storage; IFRA F-2 (PROC 1)	Covers concentrations up to 100 % Covers use up to 1 h/day Room ventilation; Basic; Up to 3 air change per hour

	Local exhaust ventilation; No. Respiratory protection; No. Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Assumes process temperature up to 40 °C
CS3; Mixing operations; Closed systems; Filling of articles/equipment; With sample collection; IFRA F-3 (PROC 3)	Covers concentrations up to 100 % Covers use up to 4 h/day Provide a good standard of controlled ventilation (5 to 10 air changes per hour). Local exhaust ventilation; No. Respiratory protection; Wear a respirator which reduces the air impurities by at least a factor of 10 (APF >= 10). For further specification, refer to section 8 of the SDS Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Assumes process temperature up to 40 °C
CS4; Mixing operations; Open systems; Filling of articles/equipment; With sample collection; IFRA F-4 (PROC 5)	Covers concentrations up to 80 % Covers use up to 0.5 h/day Room ventilation; Basic; Up to 3 air change per hour Local exhaust ventilation; Provide specifically designed and maintained LEV (fixed capturing hood type, on-tool extraction or enclosing hood type). Ensure effectiveness is at least 90% Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; Wear a respirator which reduces the air impurities by at least a factor of 20 (APF >= 20). For further specification, refer to section 8 of the SDS Assumes process temperature up to 150 °C
CS5; Laboratory activities; Use as laboratory reagent; IFRA F-5 (PROC 15)	Covers concentrations up to 100 % Covers use up to 0.25 h/day Room ventilation; Basic; Up to 3 air change per hour Local exhaust ventilation; No. Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; Wear a respirator which reduces the air impurities by at least a factor of 10 (APF >= 10). For further specification, refer to section 8 of the SDS Assumes process temperature up to 40 °C
CS6; Transfer of substance or mixture into small containers (dedicated filling line, including weighing); IFRA F-6 (PROC 9)	Covers concentrations up to 25 % Covers use up to 1 h/day Room ventilation; Basic; Up to 3 air change per hour Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; Wear a respirator which reduces the air impurities by at least a factor of 10 (APF >= 10). For further specification, refer to section 8 of the SDS Assumes process temperature up to 40 °C
CS7; Equipment cleaning and maintenance; IFRA F-7 (PROC 8a)	Covers concentrations up to 1 % Covers use up to 4 h/day Room ventilation; Basic; Up to 3 air change per hour Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Assumes process temperature up to 20 °C

1.3. Exposure estimation and reference to its source

1.3.1. Environmental release and exposure: GES 1; Formulation of fragrance compounds (mixing of fragrance substances into fragrance compounds); medium; Large scale; AISE

SPERC 2.1.a.v1 (ERC 2)

Release route	Release rate	Release estimation method
Water	0.84 kg/day	Estimated release factor
Air	10.5 kg/day	ERC
Soil	0 kg/day	Estimated release factor

Protection target	Exposure estimate	RCR
Fresh water	5.03E-3 mg/L (EUSES 2.1.2)	0.572
Sediment (freshwater)	0.583 mg/kg dw (EUSES 2.1.2)	0.572
Marine water	5.02E-4 mg/L (EUSES 2.1.2)	0.571
Sediment (marine water)	0.058 mg/kg dw (EUSES 2.1.2)	0.57
Sewage Treatment Plant	0.049 mg/L (EUSES 2.1.2)	0.049
Agricultural soil	0.117 mg/kg dw (EUSES 2.1.2)	0.589
Predator's prey (freshwater)	0.189 mg/kg ww (EUSES 2.1.2)	0.094
Predator's prey (marine water)	0.019 mg/kg ww (EUSES 2.1.2)	< 0.01
Top predator's prey (marine water)	5.2E-3 mg/kg ww (EUSES 2.1.2)	< 0.01
Predator's prey (terrestrial)	0.025 mg/kg ww (EUSES 2.1.2)	0.013
Man via environment - Inhalation (systemic effects)	2E-3 mg/m³ (EUSES 2.1.2)	< 0.01
Man via environment - Oral	4.64E-3 mg/kg bw/day (EUSES 2.1.2)	0.036
Man via environment - combined routes		0.045

1.3.2. Environmental release and exposure: GES 1; Formulation of fragrance compounds (mixing of fragrance substances into fragrance compounds); Small scale; AISE SPERC 2.1.b.v1 (ERC 2)

Release route	Release rate	Release estimation method
Water	0.9 kg/day	Estimated release factor
Air	4.5 kg/day	ERC
Soil	0 kg/day	Estimated release factor

Protection target	Exposure estimate	RCR
Fresh water	5.38E-3 mg/L (EUSES 2.1.2)	0.611
Sediment (freshwater)	0.623 mg/kg dw (EUSES 2.1.2)	0.611
Marine water	5.37E-4 mg/L (EUSES 2.1.2)	0.61
Sediment (marine water)	0.062 mg/kg dw (EUSES 2.1.2)	0.61
Sewage Treatment Plant	0.052 mg/L (EUSES 2.1.2)	0.052
Agricultural soil	0.125 mg/kg dw (EUSES 2.1.2)	0.629
Predator's prey (freshwater)	0.201 mg/kg ww (EUSES 2.1.2)	0.1
Predator's prey (marine water)	0.02 mg/kg ww (EUSES 2.1.2)	< 0.01
Top predator's prey (marine water)	5.45E-3 mg/kg ww (EUSES 2.1.2)	< 0.01
Predator's prey (terrestrial)	0.027 mg/kg ww (EUSES 2.1.2)	0.013
Man via environment - Inhalation (systemic effects)	8.61E-4 mg/m³ (EUSES 2.1.2)	< 0.01
Man via environment - Oral	2.58E-3 mg/kg bw/day (EUSES 2.1.2)	0.02
Man via environment - combined routes		0.024

1.3.3. Worker exposure: CS1; Transfer of substance or mixture (charging/discharging) at dedicated facilities; IFRA F-1 (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	3.2E-3 mg/m³ (ART)	< 0.01
Dermal, systemic, long term	0.043 mg/kg bw/day (Riskofderm)	0.123
Combined, systemic, long term		0.125

1.3.4. Worker exposure: CS2; Storage; IFRA F-2 (PROC 1)

Route of exposure and type of effects	Exposure estimate	RCR

Inhalation, systemic, long term	0.016 mg/m³ (TRA Workers 3.0)	0.013
Dermal, systemic, long term	6.8E-3 mg/kg bw/day (TRA Workers 3.0)	0.019
Combined, systemic, long term		0.032

1.3.5. Worker exposure: CS3; Mixing operations; Closed systems; Filling of articles/equipment; With sample collection; IFRA F-3 (PROC 3)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.428 mg/m³ (TRA Workers 3.0)	0.348
Dermal, systemic, long term	0.138 mg/kg bw/day (TRA Workers 3.0)	0.394
Combined, systemic, long term		0.742

1.3.6. Worker exposure: CS4; Mixing operations; Open systems; Filling of articles/equipment; With sample collection; IFRA F-4 (PROC 5)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.8 mg/m³ (ART)	0.65
Dermal, systemic, long term	0.018 mg/kg bw/day (Riskofderm)	0.051
Combined, systemic, long term		0.702

1.3.7. Worker exposure: CS5; Laboratory activities; Use as laboratory reagent; IFRA F-5 (PROC 15)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.396 mg/m³ (TRA Workers 3.0)	0.322
Dermal, systemic, long term	0.068 mg/kg bw/day (TRA Workers 3.0)	0.194
Combined, systemic, long term		0.517

1.3.8. Worker exposure: CS6; Transfer of substance or mixture into small containers (dedicated filling line, including weighing); IFRA F-6 (PROC 9)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.476 mg/m³ (TRA Workers 3.0)	0.387
Dermal, systemic, long term	0.206 mg/kg bw/day (TRA Workers 3.0)	0.588
Combined, systemic, long term		0.975

1.3.9. Worker exposure: CS7; Equipment cleaning and maintenance; IFRA F-7 (PROC 8a)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	2.5E-5 mg/m³ (ART)	< 0.01
Dermal, systemic, long term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.392
Combined, systemic, long term		0.392

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

Scaling instructions: As the environmental release factor depends on site specific operational conditions and risk management measures, Downstream Users (DU) are advised to demonstrate that a safe use is given for the amounts used at their site. Scaling may be a suitable option in this case, (ECHA Guidance for downstream users and Guidance on the compilation of safety data sheets). Scaling is a comparison of linear input parameters and determinants between data presented in the Exposure Scenario (ES) and the data available from the Downstream User to determine the risk characterisation ratios (RCR) under the operational conditions of the DU (eg. quantity of substance used per year and site, emission fraction to water, number of emission days).

2. ES 2: Formulation or re-packing; Formulation of fragranced end-products (mixing of fragrance compounds into fragranced end-products)

2.1. Title section

ES name: GES 2; Formulation of fragranced end-products (mixing of fragrance compounds into fragranced end-products)

Environment	
1: IFRA SG-1; AISE SPERC 2.1.a.v2; AISE SPERC 2.1.g.v2	ERC 2
2: IFRA SG-2; AISE SPERC 2.1.b.v2; AISE SPERC 2.1.h.v2	ERC 2
3: IFRA SG-3; AISE SPERC 2.1.c.v2; AISE SPERC 2.1.i.v2	ERC 2

4: IFRA SG-4; AISE SPERC 2.1.j.v2; Cosmetics Europe / AISE SPERC 2.3.a.v2; Cosmetics Europe SPERC 2.1.a.v2	ERC 2
5: IFRA SG-5; AISE SPERC 2.1.k.v2; Cosmetics Europe / AISE SPERC 2.3.b.v2; Cosmetics Europe SPERC 2.1.b.v2	ERC 2
6: IFRA SG-6; AISE SPERC 2.1.l.v2; Cosmetics Europe / AISE SPERC 2.3.c.v2; Cosmetics Europe SPERC 2.1.c.v2	ERC 2
7: IFRA SG-7; Cosmetics Europe SPERC 2.2.a.v2; Cosmetics Europe SPERC 2.2.c.v2	ERC 2
8: IFRA SG-8; Cosmetics Europe SPERC 2.1.d.v2; Cosmetics Europe SPERC 2.1.j.v2	ERC 2
Worker	
9: CS1; Transfer of substance or mixture (charging/discharging) at dedicated facilities; AISE M-6	PROC 8b
10: CS2; Laboratory activities; Use as laboratory reagent; AISE M-9	PROC 15
11: CS3; Storage; AISE M-1	PROC 1
12: CS4; Mixing operations; Closed systems; Filling of articles/equipment; With sample collection; AISE M-3	PROC 3
13: CS5; Mixing or blending in batch processes; Open systems; With sample collection; AISE M-5	PROC 5
14: CS6; Equipment cleaning and maintenance	PROC 8a
15: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions	PROC 2
16: CS7; Transfer of substance or mixture into small containers (dedicated filling line, including weighing); AISE M-7	PROC 9
17: CS8; Tabletting, compression, extrusion or pelletisation; AISE M-8	PROC 14

2.2. Conditions of use affecting exposure

2.2.1. Control of environmental exposure: IFRA SG-1; AISE SPERC 2.1.a.v2; AISE SPERC 2.1.g.v2 (ERC 2)

Amount used, frequency and duration of use (or from service life)
Daily amount per site <= 0.9 tonnes/day
Annual amount per site <= 225 tonnes/year
Conditions and measures related to biological sewage treatment plant
Assumed domestic sewage treatment plant flow; >=; 2E3; m3/day
application of the STP sludge on agricultural soil; Yes
Municipal sewage treatment plant is assumed.
Other conditions affecting environmental exposure
Receiving surface water flow >= 1.8E4 m3/day

2.2.2. Control of environmental exposure: IFRA SG-2; AISE SPERC 2.1.b.v2; AISE SPERC 2.1.h.v2 (ERC 2)

Amount used, frequency and duration of use (or from service life)
Daily amount per site <= 0.336 tonnes/day
Annual amount per site <= 84 tonnes/year
Conditions and measures related to biological sewage treatment plant
Assumed domestic sewage treatment plant flow; >=; 2E3; m3/day
application of the STP sludge on agricultural soil; Yes
Municipal sewage treatment plant is assumed.
Other conditions affecting environmental exposure
Receiving surface water flow >= 1.8E4 m3/day

2.2.3. Control of environmental exposure: IFRA SG-3; AISE SPERC 2.1.c.v2; AISE SPERC 2.1.i.v2 (ERC 2)

Amount used, frequency and duration of use (or from service life)
Daily amount per site <= 0.276 tonnes/day
Annual amount per site <= 69 tonnes/year

Conditions and measures related to biological sewage treatment plant
Assumed domestic sewage treatment plant flow; >=; 2E3; m3/day
application of the STP sludge on agricultural soil; Yes
Municipal sewage treatment plant is assumed.
Other conditions affecting environmental exposure
Receiving surface water flow >= 1.8E4 m3/day

2.2.4. Control of environmental exposure: IFRA SG-4; AISE SPERC 2.1.j.v2; Cosmetics Europe / AISE SPERC 2.3.a.v2; Cosmetics Europe SPERC 2.1.a.v2 (ERC 2)

Amount used, frequency and duration of use (or from service life)
Daily amount per site <= 0.252 tonnes/day
Annual amount per site <= 63 tonnes/year
Conditions and measures related to biological sewage treatment plant
Assumed domestic sewage treatment plant flow; >=; 2E3; m3/day
application of the STP sludge on agricultural soil; Yes
Municipal sewage treatment plant is assumed.
Other conditions affecting environmental exposure
Receiving surface water flow >= 1.8E4 m3/day

2.2.5. Control of environmental exposure: IFRA SG-5; AISE SPERC 2.1.k.v2; Cosmetics Europe / AISE SPERC 2.3.b.v2; Cosmetics Europe SPERC 2.1.b.v2 (ERC 2)

Amount used, frequency and duration of use (or from service life)
Daily amount per site <= 0.108 tonnes/day
Annual amount per site <= 27 tonnes/year
Conditions and measures related to biological sewage treatment plant
Assumed domestic sewage treatment plant flow; >=; 2E3; m3/day
application of the STP sludge on agricultural soil; Yes
Municipal sewage treatment plant is assumed.
Other conditions affecting environmental exposure
Receiving surface water flow >= 1.8E4 m3/day

2.2.6. Control of environmental exposure: IFRA SG-6; AISE SPERC 2.1.l.v2; Cosmetics Europe / AISE SPERC 2.3.c.v2; Cosmetics Europe SPERC 2.1.c.v2 (ERC 2)

Amount used, frequency and duration of use (or from service life)
Daily amount per site <= 0.108 tonnes/day
Annual amount per site <= 27 tonnes/year
Conditions and measures related to biological sewage treatment plant
Assumed domestic sewage treatment plant flow; >=; 2E3; m3/day
application of the STP sludge on agricultural soil; Yes
Municipal sewage treatment plant is assumed.
Other conditions affecting environmental exposure
Receiving surface water flow >= 1.8E4 m3/day

2.2.7. Control of environmental exposure: IFRA SG-7; Cosmetics Europe SPERC 2.2.a.v2; Cosmetics Europe SPERC 2.2.c.v2 (ERC 2)

Amount used, frequency and duration of use (or from service life)
Daily amount per site <= 0.384 tonnes/day

Annual amount per site <= 96 tonnes/year
Conditions and measures related to biological sewage treatment plant
Assumed domestic sewage treatment plant flow; >=; 2E3; m3/day
application of the STP sludge on agricultural soil; Yes
Municipal sewage treatment plant is assumed.
Other conditions affecting environmental exposure
Receiving surface water flow >= 1.8E4 m3/day

2.2.8. Control of environmental exposure: IFRA SG-8; Cosmetics Europe SPERC 2.1.d.v2; Cosmetics Europe SPERC 2.1.j.v2 (ERC 2)

Amount used, frequency and duration of use (or from service life)
Daily amount per site <= 0.036 tonnes/day
Annual amount per site <= 9 tonnes/year
Conditions and measures related to biological sewage treatment plant
Assumed domestic sewage treatment plant flow; >=; 2E3; m3/day
application of the STP sludge on agricultural soil; Yes
Municipal sewage treatment plant is assumed.
Other conditions affecting environmental exposure
Receiving surface water flow >= 1.8E4 m3/day

2.2.9. Control of worker exposure

Conditions of use applicable to all contributing scenarios

Product (article) characteristics
Liquid
Technical and organisational conditions and measures
Room ventilation; Basic; Up to 3 air change per hour
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.; Ensure regular inspection, cleaning and maintenance of equipment and machines.; Clear spills immediately.; Ensure daily cleaning of the equipment.
Local exhaust ventilation; No.
Conditions and measures related to personal protection, hygiene and health evaluation
Face/eye protection; No.
Other conditions affecting workers exposure
Indoor use

Specific conditions of use per contributing scenario

Contributing scenario	Specific conditions of use
CS1; Transfer of substance or mixture (charging/discharging) at dedicated facilities; AISE M-6 (PROC 8b)	Covers concentrations up to 40 % Covers use up to 3.3 h/day Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Assumes process temperature up to 20 ℃
CS2; Laboratory activities; Use as laboratory reagent; AISE M-9 (PROC 15)	Covers concentrations up to 25 % Covers use up to 0.25 h/day Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner

	equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Wear a respirator which reduces the air impurities by at least a factor of 10 (APF >= 10). For further specification, refer to section 8 of the SDS Assumes process temperature up to 40 °C
CS3; Storage; AISE M-1 (PROC 1)	Covers concentrations up to 25 % Covers use up to 1 h/day Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Assumes process temperature up to 40 °C
CS4; Mixing operations; Closed systems; Filling of articles/equipment; With sample collection; AISE M-3 (PROC 3)	Covers concentrations up to 25 % Covers use up to 4 h/day Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Wear a respirator which reduces the air impurities by at least a factor of 10 (APF >= 10). For further specification, refer to section 8 of the SDS Assumes process temperature up to 40 °C
CS5; Mixing or blending in batch processes; Open systems; With sample collection; AISE M-5 (PROC 5)	Covers concentrations up to 1 % Covers use up to 1 h/day Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Assumes process temperature up to 20 °C
CS6; Equipment cleaning and maintenance (PROC 8a)	Covers concentrations up to 1 % Covers use up to 4 h/day Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Wear a respirator which reduces the air impurities by at least a factor of 10 (APF >= 10). For further specification, refer to section 8 of the SDS Assumes process temperature up to 40 °C
Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC 2)	Covers concentrations up to 100 % Covers use up to 8 h/day Wear a respirator which reduces the air impurities by at least a factor of 10 (APF >= 10). For further specification, refer to section 8 of the SDS Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Assumes process temperature up to 40 °C
CS7; Transfer of substance or mixture into small containers (dedicated filling line, including weighing); AISE M-7 (PROC 9)	Covers concentrations up to 1 % Covers use up to 1 h/day Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Assumes process temperature up to 40 °C
CS8; Tabletting, compression, extrusion or pelletisation; AISE M-8 (PROC 14)	Covers concentrations up to 1 % Covers use up to 8 h/day Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Wear a respirator which reduces the air impurities by at least a factor of 10 (APF >= 10). For further specification, refer to section 8 of the SDS Assumes process temperature up to 40 °C

2.3. Exposure estimation and reference to its source

2.3.1. Environmental release and exposure: IFRA SG-1; AISE SPERC 2.1.a.v2; AISE SPERC 2.1.g.v2 (ERC 2)

Release route	Release rate	Release estimation method
Water	0.09 kg/day	Estimated release factor
Air	0 kg/day	Estimated release factor
Soil	0 kg/day	Estimated release factor

Protection target	Exposure estimate	RCR
Fresh water	7.09E-4 mg/L (EUSES 2.1.2)	0.081
Sediment (freshwater)	0.082 mg/kg dw (EUSES 2.1.2)	0.081
Marine water	6.97E-5 mg/L (EUSES 2.1.2)	0.079
Sediment (marine water)	8.08E-3 mg/kg dw (EUSES 2.1.2)	0.079
Sewage Treatment Plant	5.2E-3 mg/L (EUSES 2.1.2)	< 0.01
Agricultural soil	0.013 mg/kg dw (EUSES 2.1.2)	0.063
Predator's prey (freshwater)	0.038 mg/kg ww (EUSES 2.1.2)	0.019
Predator's prey (marine water)	3.63E-3 mg/kg ww (EUSES 2.1.2)	< 0.01
Top predator's prey (marine water)	2.18E-3 mg/kg ww (EUSES 2.1.2)	< 0.01
Predator's prey (terrestrial)	2.77E-3 mg/kg ww (EUSES 2.1.2)	< 0.01
Man via environment - Inhalation (systemic effects)	4.56E-6 mg/m³ (EUSES 2.1.2)	< 0.01
Man via environment - Oral	1.41E-4 mg/kg bw/day (EUSES 2.1.2)	< 0.01
Man via environment - combined routes		< 0.01

2.3.2. Environmental release and exposure: IFRA SG-2; AISE SPERC 2.1.b.v2; AISE SPERC 2.1.h.v2 (ERC 2)

Release route	Release rate	Release estimation method
Water	0.336 kg/day	Estimated release factor
Air	0 kg/day	Estimated release factor
Soil	0 kg/day	Estimated release factor

Protection target	Exposure estimate	RCR
Fresh water	2.13E-3 mg/L (EUSES 2.1.2)	0.242
Sediment (freshwater)	0.246 mg/kg dw (EUSES 2.1.2)	0.242
Marine water	2.12E-4 mg/L (EUSES 2.1.2)	0.24
Sediment (marine water)	0.025 mg/kg dw (EUSES 2.1.2)	0.24
Sewage Treatment Plant	0.019 mg/L (EUSES 2.1.2)	0.019
Agricultural soil	0.047 mg/kg dw (EUSES 2.1.2)	0.235
Predator's prey (freshwater)	0.087 mg/kg ww (EUSES 2.1.2)	0.044
Predator's prey (marine water)	8.59E-3 mg/kg ww (EUSES 2.1.2)	< 0.01
Top predator's prey (marine water)	3.17E-3 mg/kg ww (EUSES 2.1.2)	< 0.01
Predator's prey (terrestrial)	0.01 mg/kg ww (EUSES 2.1.2)	< 0.01
Man via environment - Inhalation (systemic effects)	4.66E-6 mg/m³ (EUSES 2.1.2)	< 0.01
Man via environment - Oral	3.99E-4 mg/kg bw/day (EUSES 2.1.2)	< 0.01
Man via environment - combined routes		< 0.01

2.3.3. Environmental release and exposure: IFRA SG-3; AISE SPERC 2.1.c.v2; AISE SPERC 2.1.i.v2 (ERC 2)

Release route	Release rate	Release estimation method
Water	0.552 kg/day	Estimated release factor
Air	0 kg/day	Estimated release factor
Soil	0 kg/day	Estimated release factor

Protection target	Exposure estimate	RCR
Fresh water	3.37E-3 mg/L (EUSES 2.1.2)	0.383
Sediment (freshwater)	0.391 mg/kg dw (EUSES 2.1.2)	0.383
Marine water	3.36E-4 mg/L (EUSES 2.1.2)	0.382
Sediment (marine water)	0.039 mg/kg dw (EUSES 2.1.2)	0.382
Sewage Treatment Plant	0.032 mg/L (EUSES 2.1.2)	0.032
Agricultural soil	0.077 mg/kg dw (EUSES 2.1.2)	0.386
Predator's prey (freshwater)	0.131 mg/kg ww (EUSES 2.1.2)	0.065
Predator's prey (marine water)	0.013 mg/kg ww (EUSES 2.1.2)	< 0.01
Top predator's prey (marine water)	4.04E-3 mg/kg ww (EUSES 2.1.2)	< 0.01
Predator's prey (terrestrial)	0.016 mg/kg ww (EUSES 2.1.2)	< 0.01
Man via environment - Inhalation (systemic effects)	4.74E-6 mg/m³ (EUSES 2.1.2)	< 0.01
Man via environment - Oral	6.26E-4 mg/kg bw/day (EUSES 2.1.2)	< 0.01
Man via environment - combined routes		< 0.01

2.3.4. Environmental release and exposure: IFRA SG-4; AISE SPERC 2.1.j.v2; Cosmetics Europe / AISE SPERC 2.3.a.v2; Cosmetics Europe SPERC 2.1.a.v2 (ERC 2)

Release route	Release rate	Release estimation method
Water	0.252 kg/day	Estimated release factor
Air	0 kg/day	Estimated release factor
Soil	0 kg/day	Estimated release factor

Protection target	Exposure estimate	RCR
Fresh water	1.64E-3 mg/L (EUSES 2.1.2)	0.187
Sediment (freshwater)	0.19 mg/kg dw (EUSES 2.1.2)	0.187
Marine water	1.63E-4 mg/L (EUSES 2.1.2)	0.185
Sediment (marine water)	0.019 mg/kg dw (EUSES 2.1.2)	0.185
Sewage Treatment Plant	0.015 mg/L (EUSES 2.1.2)	0.015
Agricultural soil	0.035 mg/kg dw (EUSES 2.1.2)	0.176
Predator's prey (freshwater)	0.07 mg/kg ww (EUSES 2.1.2)	0.035
Predator's prey (marine water)	6.9E-3 mg/kg ww (EUSES 2.1.2)	< 0.01
Top predator's prey (marine water)	2.84E-3 mg/kg ww (EUSES 2.1.2)	< 0.01
Predator's prey (terrestrial)	7.55E-3 mg/kg ww (EUSES 2.1.2)	< 0.01
Man via environment - Inhalation (systemic effects)	4.62E-6 mg/m³ (EUSES 2.1.2)	< 0.01
Man via environment - Oral	3.11E-4 mg/kg bw/day (EUSES 2.1.2)	< 0.01
Man via environment - combined routes		< 0.01

2.3.5. Environmental release and exposure: IFRA SG-5; AISE SPERC 2.1.k.v2; Cosmetics Europe / AISE SPERC 2.3.b.v2; Cosmetics Europe SPERC 2.1.b.v2 (ERC 2)

Release route	Release rate	Release estimation method
Water	0.216 kg/day	Estimated release factor
Air	0 kg/day	Estimated release factor
Soil	0 kg/day	Estimated release factor

Protection target	Exposure estimate	RCR
Fresh water	1.44E-3 mg/L (EUSES 2.1.2)	0.163
Sediment (freshwater)	0.166 mg/kg dw (EUSES 2.1.2)	0.163
Marine water	1.42E-4 mg/L (EUSES 2.1.2)	0.162
Sediment (marine water)	0.016 mg/kg dw (EUSES 2.1.2)	0.162
Sewage Treatment Plant	0.012 mg/L (EUSES 2.1.2)	0.012
Agricultural soil	0.03 mg/kg dw (EUSES 2.1.2)	0.151
Predator's prey (freshwater)	0.063 mg/kg ww (EUSES 2.1.2)	0.031
Predator's prey (marine water)	6.17E-3 mg/kg ww (EUSES 2.1.2)	< 0.01

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Top predator's prey (marine water)	2.69E-3 mg/kg ww (EUSES 2.1.2)	< 0.01
Predator's prey (terrestrial)	6.49E-3 mg/kg ww (EUSES 2.1.2)	< 0.01
Man via environment - Inhalation (systemic effects)	4.61E-6 mg/m³ (EUSES 2.1.2)	< 0.01
Man via environment - Oral	2.73E-4 mg/kg bw/day (EUSES 2.1.2)	< 0.01
Man via environment - combined routes		< 0.01

2.3.6. Environmental release and exposure: IFRA SG-6; AISE SPERC 2.1.l.v2; Cosmetics Europe / AISE SPERC 2.3.c.v2; Cosmetics Europe SPERC 2.1.c.v2 (ERC 2)

Release route	Release rate	Release estimation method
Water	0.432 kg/day	Estimated release factor
Air	0 kg/day	Estimated release factor
Soil	0 kg/day	Estimated release factor

Protection target	Exposure estimate	RCR
Fresh water	2.68E-3 mg/L (EUSES 2.1.2)	0.305
Sediment (freshwater)	0.311 mg/kg dw (EUSES 2.1.2)	0.304
Marine water	2.67E-4 mg/L (EUSES 2.1.2)	0.303
Sediment (marine water)	0.031 mg/kg dw (EUSES 2.1.2)	0.303
Sewage Treatment Plant	0.025 mg/L (EUSES 2.1.2)	0.025
Agricultural soil	0.06 mg/kg dw (EUSES 2.1.2)	0.302
Predator's prey (freshwater)	0.106 mg/kg ww (EUSES 2.1.2)	0.053
Predator's prey (marine water)	0.011 mg/kg ww (EUSES 2.1.2)	< 0.01
Top predator's prey (marine water)	3.56E-3 mg/kg ww (EUSES 2.1.2)	< 0.01
Predator's prey (terrestrial)	0.013 mg/kg ww (EUSES 2.1.2)	< 0.01
Man via environment - Inhalation (systemic effects)	4.69E-6 mg/m³ (EUSES 2.1.2)	< 0.01
Man via environment - Oral	5E-4 mg/kg bw/day (EUSES 2.1.2)	< 0.01
Man via environment - combined routes		< 0.01

2.3.7. Environmental release and exposure: IFRA SG-7; Cosmetics Europe SPERC 2.2.a.v2; Cosmetics Europe SPERC 2.2.c.v2 (ERC 2)

Release route	Release rate	Release estimation method
Water	0 kg/day	Estimated release factor
Air	0 kg/day	Estimated release factor
Soil	0 kg/day	Estimated release factor

Protection target	Exposure estimate	RCR
Fresh water	1.9E-4 mg/L (EUSES 2.1.2)	0.022
Sediment (freshwater)	0.022 mg/kg dw (EUSES 2.1.2)	0.022
Marine water	1.78E-5 mg/L (EUSES 2.1.2)	0.02
Sediment (marine water)	2.07E-3 mg/kg dw (EUSES 2.1.2)	0.02
Sewage Treatment Plant	0 mg/L (EUSES 2.1.2)	< 0.01
Agricultural soil	6.87E-5 mg/kg dw (EUSES 2.1.2)	< 0.01
Predator's prey (freshwater)	0.019 mg/kg ww (EUSES 2.1.2)	< 0.01
Predator's prey (marine water)	1.82E-3 mg/kg ww (EUSES 2.1.2)	< 0.01
Top predator's prey (marine water)	1.82E-3 mg/kg ww (EUSES 2.1.2)	< 0.01
Predator's prey (terrestrial)	1.17E-4 mg/kg ww (EUSES 2.1.2)	< 0.01
Man via environment - Inhalation (systemic effects)	4.52E-6 mg/m³ (EUSES 2.1.2)	< 0.01
Man via environment - Oral	4.61E-5 mg/kg bw/day (EUSES 2.1.2)	< 0.01
Man via environment - combined routes		< 0.01

2.3.8. Environmental release and exposure: IFRA SG-8; Cosmetics Europe SPERC 2.1.d.v2; Cosmetics Europe SPERC 2.1.j.v2 (ERC 2)

Release route	Release rate	Release estimation method

Water	0.72 kg/day	Estimated release factor
Air	0 kg/day	Estimated release factor
Soil	0 kg/day	Estimated release factor

Protection target	Exposure estimate	RCR
Fresh water	4.34E-3 mg/L (EUSES 2.1.2)	0.493
Sediment (freshwater)	0.503 mg/kg dw (EUSES 2.1.2)	0.493
Marine water	4.33E-4 mg/L (EUSES 2.1.2)	0.492
Sediment (marine water)	0.05 mg/kg dw (EUSES 2.1.2)	0.492
Sewage Treatment Plant	0.042 mg/L (EUSES 2.1.2)	0.042
Agricultural soil	0.1 mg/kg dw (EUSES 2.1.2)	0.503
Predator's prey (freshwater)	0.164 mg/kg ww (EUSES 2.1.2)	0.082
Predator's prey (marine water)	0.016 mg/kg ww (EUSES 2.1.2)	< 0.01
Top predator's prey (marine water)	4.72E-3 mg/kg ww (EUSES 2.1.2)	< 0.01
Predator's prey (terrestrial)	0.021 mg/kg ww (EUSES 2.1.2)	0.011
Man via environment - Inhalation (systemic effects)	4.81E-6 mg/m³ (EUSES 2.1.2)	< 0.01
Man via environment - Oral	8.03E-4 mg/kg bw/day (EUSES 2.1.2)	< 0.01
Man via environment - combined routes		< 0.01

2.3.9. Worker exposure: CS1; Transfer of substance or mixture (charging/discharging) at dedicated facilities; AISE M-6 (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.58 mg/m³ (ART)	0.472
Dermal, systemic, long term	0.053 mg/kg bw/day (Riskofderm)	0.151
Combined, systemic, long term		0.623

2.3.10. Worker exposure: CS2; Laboratory activities; Use as laboratory reagent; AISE M-9 (PROC 15)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.238 mg/m³ (TRA Workers 3.0)	0.193
Dermal, systemic, long term	0.041 mg/kg bw/day (TRA Workers 3.0)	0.117
Combined, systemic, long term		0.31

2.3.11. Worker exposure: CS3; Storage; AISE M-1 (PROC 1)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	9.51E-3 mg/m³ (TRA Workers 3.0)	< 0.01
Dermal, systemic, long term	4.08E-3 mg/kg bw/day (TRA Workers 3.0)	0.012
Combined, systemic, long term		0.019

2.3.12. Worker exposure: CS4; Mixing operations; Closed systems; Filling of articles/equipment; With sample collection; AISE M-3 (PROC 3)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.856 mg/m³ (TRA Workers 3.0)	0.696
Dermal, systemic, long term	0.083 mg/kg bw/day (TRA Workers 3.0)	0.237
Combined, systemic, long term		0.933

2.3.13. Worker exposure: CS5; Mixing or blending in batch processes; Open systems; With sample collection; AISE M-5 (PROC 5)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.793 mg/m³ (TRA Workers 3.0)	0.645
Dermal, systemic, long term	0.069 mg/kg bw/day (TRA Workers 3.0)	0.196
Combined, systemic, long term		0.84

2.3.14. Worker exposure: CS6; Equipment cleaning and maintenance (PROC 8a)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.476 mg/m³ (TRA Workers 3.0)	0.387

Dermal, systemic, long term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.392
Combined, systemic, long term		0.778

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

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.793 mg/m³ (TRA Workers 3.0)	0.645
Dermal, systemic, long term	0.069 mg/kg bw/day (TRA Workers 3.0)	0.196
Combined, systemic, long term		0.84

2.3.16. Worker exposure: CS7; Transfer of substance or mixture into small containers (dedicated filling line, including weighing); AISE M-7 (PROC 9)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.793 mg/m³ (TRA Workers 3.0)	0.645
Dermal, systemic, long term	0.069 mg/kg bw/day (TRA Workers 3.0)	0.196
Combined, systemic, long term		0.841

2.3.17. Worker exposure: CS8; Tabletting, compression, extrusion or pelletisation; AISE M-8 (PROC 14)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.396 mg/m³ (TRA Workers 3.0)	0.322
Dermal, systemic, long term	0.069 mg/kg bw/day (TRA Workers 3.0)	0.196
Combined, systemic, long term		0.518

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

Scaling tool: As the environmental release factor depends on site specific operational conditions and risk management measures, Downstream Users (DU) are advised to demonstrate that a safe use is given for the amounts used at their site. Scaling may be a suitable option in this case, (ECHA Guidance for downstream users and Guidance on the compilation of safety data sheets). Scaling is a comparison of linear input parameters and determinants between data presented in the Exposure Scenario (ES) and the data available from the Downstream User to determine the risk characterisation ratios (RCR) under the operational conditions of the DU (eg. quantity of substance used per year and site, emission fraction to water, number of emission days).

3. ES 3: Use at industrial sites; Washing and Cleaning Products

3.1. Title section

ES name: GES 3; Industrial end-use of washing and cleaning products
Product category: Washing and Cleaning Products (PC 35)

Environment	
1: GES 3; Industrial end-use of washing and cleaning products	ERC 4
Worker	
2: Industrial use of food beverage and pharmaceutical products; CS13-u; Food process cleaner. Cleaning In place (CIP) process; AISE-P801; CS17-u; Defoaming product. Automatic process; AISE-P805	PROC 1
3: Industrial use of laundry products; CS1-u; Laundry detergent. Automatic process; AISE-P101; CS2-u; Conditioner (softner/starch). Automatic process; AISE-P104; CS3-u; Laundry aid (gasing). Automatic process; AISE-P107; CS4-u; Laundry aid (non-gasing). Automatic process; AISE-P110	PROC 2
4: Industrial use; Dedicated equipment; Pharmaceuticals; CS21-u; Disinfection product. Semi-automatic process; AISE-P810	PROC 4
5: Industrial use of vehicle cleaning products; CS5-u; Train cleaner. Semi-Automatic process; AISE-P707; CS6-u; Aeroplane cleaner. Semi-Automatic process; AISE-P708; CS7-u; Car wash product. Semi-Automatic process; AISE-P709; CS10-u; Dewaxing product. Semi-Automatic process; AISE-P712; CS14-u; Food process cleaner. Semi closed cleaning process; AISE-P802	PROC 4
6: Industrial use of water treatment products; CS24-u; Preservation and sanitation agent . Drink and pool water; AISE-P904; CS23-u; Sanitation agent. Waste water; AISE-P905	PROC 4
7: Industrial use of vehicle cleaning products; CS8-u; Car wash product. Spray and rinse process; AISE-P710	PROC 7
8: Industrial use of vehicle cleaning products; CS12-u1; Car wash product. Spray and wipe manual process; AISE-P711; CS9-u1; Boat cleaner. Spray and wipe manual process; AISE-P714	PROC 7

9: Industrial use of food beverage and pharmaceutical products; CS18-u; Foam cleaner. Semi-Automatic with venting process; AISE-P806	PROC 7
10: Industrial use of food beverage and pharmaceutical products; CS15-u; Chain maintenance product. Automatic spray process; AISE-P803; CS19-u; Foam cleaner. Semi-Automatic without venting process; AISE-P807; CS22-u; Animal housing care. Semi-Automatic process; AISE-P809; CS20-u; Disinfection product. Fogging and gassing Semi-automatic process; AISE-P811	PROC 7
11: Industrial use of façade/surface cleaning products; CS25-u; Façade/surface cleaner. High pressure process; AISE-P906; CS26-u; Façade/surface cleaner. Medium pressure process; AISE-P907	PROC 7
12: Industrial use of laundry products; CS1-p; Laundry detergent. Automatic process; AISE-P101; CS2-p; Conditioner (softner/starch). Automatic process; AISE-P104; CS3-p; Laundry aid (gasing). Automatic process; AISE-P107; CS4-p; Laundry aid (non-gasing). Automatic process; AISE-P110; CS13-p; Industrial use of food beverage and pharmaceutical products; AISE-P801; CS14-p; Food process cleaner. Cleaning In place (CIP) process; AISE-P802; CS15-p; Food process cleaner. Semi closed cleaning process; Chain maintenance product. Automatic spray process; AISE-P803; CS17-p; Defoaming product. Automatic process; AISE-P805	PROC 8b
13: Industrial use of water treatment products; CS23-p; Preservation and sanitation agent . Drink and pool water; AISE-P904; CS24-p; Sanitation agent. Waste water; AISE-P905; Industrial use of façade/surface cleaning products; CS25-p; Façade/surface cleaner. High pressure process; AISE-P906; CS26-p; Façade/surface cleaner. Medium pressure process; AISE-P907	PROC 8b
14: Industrial use of vehicle cleaning products; CS5-p; Train cleaner. Semi-Automatic process; AISE-P707; CS6-p; Aeroplane cleaner. Semi-Automatic process; AISE-P708; CS7-p; Car wash product. Semi-Automatic process; AISE-P709; CS8-p; Car wash product. Spray and rinse process; AISE-P710; CS10-p; Dewaxing product. Semi-Automatic process; AISE-P712; Industrial use of food beverage and pharmaceutical products; CS19-p; Foam cleaner. Semi-Automatic without venting process; AISE-P807; CS22-p; Disinfection product. Fogging and gassing Semi-automatic process; AISE-P811	PROC 8b
15: Industrial use of vehicle cleaning products; CS9-p; Car wash product. Spray and wipe manual process; AISE-P711; CS11-p; Boat cleaner. Manual process; AISE-P713; CS12-p; Boat cleaner. Spray and wipe manual process; AISE-P714	PROC 8b
16: Industrial use of food beverage and pharmaceutical products; CS20-p; Animal housing care. Semi-Automatic process; AISE-P809; CS21-p; Disinfection product. Semi-automatic process; AISE-P810	PROC 8b
17: Industrial use of food beverage and pharmaceutical products; CS18-p; Foam cleaner. Semi-Automatic with venting process; AISE-P806	PROC 8b
18: Industrial use of vehicle cleaning products; CS9-u2; Car wash product. Spray and wipe manual process; AISE-P711; CS12-u2; Boat cleaner. Manual process; AISE-P713; CS11-u; Boat cleaner. Spray and wipe manual process; AISE-P714	PROC 10
19: Industrial use of food beverage and pharmaceutical products; CS16-u; Chain maintenance product. Automatic drip and brush process; AISE-P804	PROC 13

3.2. Conditions of use affecting exposure

3.2.1. Control of environmental exposure: GES 3; Industrial end-use of washing and cleaning products (ERC 4)

Amount used, frequency and duration of use (or from service life)
Daily amount per site <= 1.36E-5 tonnes/day
Annual amount per site <= 3E-3 tonnes/year
Conditions and measures related to biological sewage treatment plant
Municipal sewage treatment plant is assumed.
Assumed domestic sewage treatment plant flow; >=; 2E3; m3/day
application of the STP sludge on agricultural soil; Yes
Other conditions affecting environmental exposure
Receiving surface water flow >= 1.8E4 m3/day

3.2.2. Control of worker exposure

Conditions of use applicable to all contributing scenarios

Product (article) characteristics
Liquid
Covers concentrations up to 1 %

Technical and organisational conditions and measures
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.; Ensure regular inspection, cleaning and maintenance of equipment and machines.; Clear spills immediately.; Ensure daily cleaning of the equipment.
Conditions and measures related to personal protection, hygiene and health evaluation
Face/eye protection; No.

Specific conditions of use per contributing scenario

Contributing scenario	Specific conditions of use
Industrial use of food beverage and pharmaceutical products; CS13-u; Food process cleaner. Cleaning In place (CIP) process; AISE-P801; CS17-u; Defoaming product. Automatic process; AISE-P805 (PROC 1)	Covers use up to 8 h/day Room ventilation; Basic; Up to 3 air change per hour Local exhaust ventilation; No. Respiratory protection; No. Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Indoor use Assumes process temperature up to 40 °C
Industrial use of laundry products; CS1-u; Laundry detergent. Automatic process; AISE-P101; CS2-u; Conditioner (softner/starch). Automatic process; AISE-P104; CS3-u; Laundry aid (gasing). Automatic process; AISE-P107; CS4-u; Laundry aid (non-gasing). Automatic process; AISE-P110 (PROC 2)	Covers use up to 8 h/day Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Local exhaust ventilation; No. Respiratory protection; No. Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Indoor use Assumes process temperature up to 40 °C
Industrial use; Dedicated equipment; Pharmaceuticals; CS21-u; Disinfection product. Semi-automatic process; AISE-P810 (PROC 4)	Covers use up to 4 h/day Room ventilation; Basic; Up to 3 air change per hour Local exhaust ventilation; No. Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 40 °C
Industrial use of vehicle cleaning products; CS5-u; Train cleaner. Semi-Automatic process; AISE-P707; CS6-u; Aeroplane cleaner. Semi-Automatic process; AISE-P708; CS7-u; Car wash product. Semi-Automatic process; AISE-P709; CS10-u; Dewaxing product. Semi-Automatic process; AISE-P712; CS14-u; Food process cleaner. Semi closed cleaning process; AISE-P802 (PROC 4)	Covers use up to 8 h/day Room ventilation; Basic; Up to 3 air change per hour Provide specifically designed and maintained LEV (fixed capturing hood type, on-tool extraction or enclosing hood type). Ensure effectiveness is at least 90% Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 40 °C
Industrial use of water treatment products; CS24-u; Preservation and sanitation agent . Drink and pool water; AISE-P904; CS23-u; Sanitation agent. Waste water; AISE-P905 (PROC 4)	Covers use up to 8 h/day Room ventilation; Basic; Up to 3 air change per hour Local exhaust ventilation; No. Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Outdoor use Assumes process temperature up to 40 °C
Industrial use of vehicle cleaning products; CS8-u; Car wash product.	Covers use up to 1 h/day Provide a good standard of controlled ventilation (5 to 10 air changes per hour).

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Spray and rinse process; AISE-P710 (PROC 7)	Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Wear a respirator which reduces the air impurities by at least a factor of 10 (APF >= 10). For further specification, refer to section 8 of the SDS Indoor use Assumes process temperature up to 40 °C
Industrial use of vehicle cleaning products; CS12-u1; Car wash product. Spray and wipe manual process; AISE-P711; CS9-u1; Boat cleaner. Spray and wipe manual process; AISE-P714 (PROC 7)	Covers use up to 1 h/day Room ventilation; Basic; Up to 3 air change per hour Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Outdoor use Assumes process temperature up to 20 °C
Industrial use of food beverage and pharmaceutical products; CS18-u; Foam cleaner. Semi-Automatic with venting process; AISE-P806 (PROC 7)	Covers use up to 8 h/day Room ventilation; Basic; Up to 3 air change per hour Provide enclosing hood with very high effectiveness (such as fume cupboard) or effective ventilation by spray booth according to EN 16985. Ensure effectiveness is at least 95%. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 20 °C
Industrial use of food beverage and pharmaceutical products; CS15-u; Chain maintenance product. Automatic spray process; AISE-P803; CS19-u; Foam cleaner. Semi-Automatic without venting process; AISE-P807; CS22-u; Animal housing care. Semi-Automatic process; AISE-P809; CS20-u; Disinfection product. Fogging and gassing Semi-automatic process; AISE-P811 (PROC 7)	Covers use up to 8 h/day Room ventilation; Basic; Up to 3 air change per hour Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Wear a respirator which reduces the air impurities by at least a factor of 10 (APF >= 10). For further specification, refer to section 8 of the SDS Indoor use Assumes process temperature up to 20 °C
Industrial use of façade/surface cleaning products; CS25-u; Façade/surface cleaner. High pressure process; AISE-P906; CS26-u; Façade/surface cleaner. Medium pressure process; AISE-P907 (PROC 7)	Covers use up to 8 h/day Room ventilation; Basic; Up to 3 air change per hour Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Wear a respirator which reduces the air impurities by at least a factor of 10 (APF >= 10). For further specification, refer to section 8 of the SDS Outdoor use Assumes process temperature up to 20 °C
Industrial use of laundry products; CS1-p; Laundry detergent. Automatic process; AISE-P101; CS2-p; Conditioner (softner/starch). Automatic process; AISE-P104; CS3-p; Laundry aid (gasing). Automatic process; AISE-P107; CS4-p; Laundry aid (non-gasing). Automatic process; AISE-P110; CS13-p; Industrial use of food beverage and pharmaceutical products; AISE-P801;	Covers use up to 0.25 h/day Room ventilation; Basic; Up to 3 air change per hour Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 40 °C

CS14-p; Food process cleaner. Cleaning In place (CIP) process; AISE-P802; CS15-p; Food process cleaner. Semi closed cleaning process; Chain maintenance product. Automatic spray process; AISE-P803; CS17-p; Defoaming product. Automatic process; AISE-P805 (PROC 8b)	
Industrial use of water treatment products; CS23-p; Preservation and sanitation agent . Drink and pool water; AISE-P904; CS24-p; Sanitation agent. Waste water; AISE-P905; Industrial use of façade/surface cleaning products; CS25-p; Façade/surface cleaner. High pressure process; AISE-P906; CS26-p; Façade/surface cleaner. Medium pressure process; AISE-P907 (PROC 8b)	Covers use up to 0.25 h/day Room ventilation; Basic; Up to 3 air change per hour Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Outdoor use Assumes process temperature up to 40 °C
Industrial use of vehicle cleaning products; CS5-p; Train cleaner. Semi-Automatic process; AISE-P707; CS6-p; Aeroplane cleaner. Semi-Automatic process; AISE-P708; CS7-p; Car wash product. Semi-Automatic process; AISE-P709; CS8-p; Car wash product. Spray and rinse process; AISE-P710; CS10-p; Dewaxing product. Semi-Automatic process; AISE-P712; Industrial use of food beverage and pharmaceutical products; CS19-p; Foam cleaner. Semi-Automatic without venting process; AISE-P807; CS22-p; Disinfection product. Fogging and gassing Semi-automatic process; AISE-P811 (PROC 8b)	Covers use up to 1 h/day Room ventilation; Basic; Up to 3 air change per hour Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 40 °C
Industrial use of vehicle cleaning products; CS9-p; Car wash product. Spray and wipe manual process; AISE-P711; CS11-p; Boat cleaner. Manual process; AISE-P713; CS12-p; Boat cleaner. Spray and wipe manual process; AISE-P714 (PROC 8b)	Covers use up to 1 h/day Room ventilation; Basic; Up to 3 air change per hour Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Outdoor use Assumes process temperature up to 40 °C
Industrial use of food beverage and pharmaceutical products; CS20-p; Animal housing care. Semi-Automatic process; AISE-P809; CS21-p; Disinfection product. Semi-automatic process; AISE-P810 (PROC 8b)	Covers use up to 1 h/day Room ventilation; Basic; Up to 3 air change per hour Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 40 °C
Industrial use of food beverage and pharmaceutical products; CS18-p; Foam cleaner. Semi-Automatic with	Covers use up to 1 h/day Room ventilation; Basic; Up to 3 air change per hour Provide enclosing hood with very high effectiveness (such as fume cupboard) or effective ventilation by spray booth according to EN 16985. Ensure effectiveness is at least 95%.

Administrative information:
Report Information: SDS_FR/EN/GHS_SDS_EU_CNTRY/46
Sales & Distribution Information: VE01/FR/CH11/01
Shipping Order Information: 36 299 614/32 763 875

venting process; AISE-P806 (PROC 8b)	Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 40 °C
Industrial use of vehicle cleaning products; CS9-u2; Car wash product. Spray and wipe manual process; AISE-P711; CS12-u2; Boat cleaner. Manual process; AISE-P713; CS11-u; Boat cleaner. Spray and wipe manual process; AISE-P714 (PROC 10)	Covers use up to 8 h/day Room ventilation; Basic; Up to 3 air change per hour Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Outdoor use Assumes process temperature up to 20 °C
Industrial use of food beverage and pharmaceutical products; CS16-u; Chain maintenance product. Automatic drip and brush process; AISE-P804 (PROC 13)	Covers use up to 8 h/day Room ventilation; Basic; Up to 3 air change per hour Provide specifically designed and maintained LEV (fixed capturing hood type, on-tool extraction or enclosing hood type). Ensure effectiveness is at least 90% Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 40 °C

3.3. Exposure estimation and reference to its source

3.3.1. Environmental release and exposure: GES 3; Industrial end-use of washing and cleaning products (ERC 4)

Release route	Release rate	Release estimation method
Water	0.014 kg/day	Estimated release factor
Air	0 kg/day	Estimated release factor
Soil	0 kg/day	Estimated release factor

Protection target	Exposure estimate	RCR
Fresh water	2.69E-4 mg/L (EUSES 2.1.2)	0.031
Sediment (freshwater)	0.031 mg/kg dw (EUSES 2.1.2)	0.031
Marine water	2.57E-5 mg/L (EUSES 2.1.2)	0.029
Sediment (marine water)	2.98E-3 mg/kg dw (EUSES 2.1.2)	0.029
Sewage Treatment Plant	7.88E-4 mg/L (EUSES 2.1.2)	< 0.01
Agricultural soil	1.96E-3 mg/kg dw (EUSES 2.1.2)	< 0.01
Predator's prey (freshwater)	0.022 mg/kg ww (EUSES 2.1.2)	0.011
Predator's prey (marine water)	2.06E-3 mg/kg ww (EUSES 2.1.2)	< 0.01
Top predator's prey (marine water)	1.87E-3 mg/kg ww (EUSES 2.1.2)	< 0.01
Predator's prey (terrestrial)	5.19E-4 mg/kg ww (EUSES 2.1.2)	< 0.01
Man via environment - Inhalation (systemic effects)	4.53E-6 mg/m³ (EUSES 2.1.2)	< 0.01
Man via environment - Oral	5.92E-5 mg/kg bw/day (EUSES 2.1.2)	< 0.01
Man via environment - combined routes		< 0.01

3.3.2. Worker exposure: Industrial use of food beverage and pharmaceutical products; CS13-u; Food process cleaner. Cleaning In place (CIP) process; AISE-P801; CS17-u; Defoaming product. Automatic process; AISE-P805 (PROC 1)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	7.93E-3 mg/m³ (TRA Workers 3.0)	< 0.01
Dermal, systemic, long term	6.8E-4 mg/kg bw/day (TRA Workers 3.0)	< 0.01

Combined, systemic, long term		< 0.01

3.3.3. Worker exposure: Industrial use of laundry products; CS1-u; Laundry detergent. Automatic process; AISE-P101; CS2-u; Conditioner (softner/starch). Automatic process; AISE-P104; CS3-u; Laundry aid (gasing). Automatic process; AISE-P107; CS4-u; Laundry aid (non-gasing). Automatic process; AISE-P110 (PROC 2)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.555 mg/m³ (TRA Workers 3.0)	0.451
Dermal, systemic, long term	0.027 mg/kg bw/day (TRA Workers 3.0)	0.078
Combined, systemic, long term		0.529

3.3.4. Worker exposure: Industrial use; Dedicated equipment; Pharmaceuticals; CS21-u; Disinfection product. Semi-automatic process; AISE-P810 (PROC 4)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.025 mg/m³ (ART)	0.02
Dermal, systemic, long term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.392
Combined, systemic, long term		0.412

3.3.5. Worker exposure: Industrial use of vehicle cleaning products; CS5-u; Train cleaner. Semi-Automatic process; AISE-P707; CS6-u; Aeroplane cleaner. Semi-Automatic process; AISE-P708; CS7-u; Car wash product. Semi-Automatic process; AISE-P709; CS10-u; Dewaxing product. Semi-Automatic process; AISE-P712; CS14-u; Food process cleaner. Semi closed cleaning process; AISE-P802 (PROC 4)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.396 mg/m³ (TRA Workers 3.0)	0.322
Dermal, systemic, long term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.392
Combined, systemic, long term		0.714

3.3.6. Worker exposure: Industrial use of water treatment products; CS24-u; Preservation and sanitation agent . Drink and pool water; AISE-P904; CS23-u; Sanitation agent. Waste water; AISE-P905 (PROC 4)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	5E-3 mg/m³ (ART)	< 0.01
Dermal, systemic, long term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.392
Combined, systemic, long term		0.396

3.3.7. Worker exposure: Industrial use of vehicle cleaning products; CS8-u; Car wash product. Spray and rinse process; AISE-P710 (PROC 7)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.476 mg/m³ (TRA Workers 3.0)	0.387
Dermal, systemic, long term	0.214 mg/kg bw/day (TRA Workers 3.0)	0.612
Combined, systemic, long term		0.999

3.3.8. Worker exposure: Industrial use of vehicle cleaning products; CS12-u1; Car wash product. Spray and wipe manual process; AISE-P711; CS9-u1; Boat cleaner. Spray and wipe manual process; AISE-P714 (PROC 7)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.3 mg/m³ (ART)	0.244
Dermal, systemic, long term	0.214 mg/kg bw/day (TRA Workers 3.0)	0.612
Combined, systemic, long term		0.856

3.3.9. Worker exposure: Industrial use of food beverage and pharmaceutical products; CS18-u; Foam cleaner. Semi-Automatic with venting process; AISE-P806 (PROC 7)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.083 mg/m³ (ART)	0.067

Dermal, systemic, long term	0.214 mg/kg bw/day (TRA Workers 3.0)	0.612
Combined, systemic, long term		0.68

3.3.10. Worker exposure: Industrial use of food beverage and pharmaceutical products; CS15-u; Chain maintenance product. Automatic spray process; AISE-P803; CS19-u; Foam cleaner. Semi-Automatic without venting process; AISE-P807; CS22-u; Animal housing care. Semi-Automatic process; AISE-P809; CS20-u; Disinfection product. Fogging and gassing Semi-automatic process; AISE-P811 (PROC 7)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.15 mg/m³ (ART)	0.122
Dermal, systemic, long term	0.214 mg/kg bw/day (TRA Workers 3.0)	0.612
Combined, systemic, long term		0.734

3.3.11. Worker exposure: Industrial use of façade/surface cleaning products; CS25-u; Façade/surface cleaner. High pressure process; AISE-P906; CS26-u; Façade/surface cleaner. Medium pressure process; AISE-P907 (PROC 7)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.045 mg/m³ (ART)	0.037
Dermal, systemic, long term	0.214 mg/kg bw/day (TRA Workers 3.0)	0.612
Combined, systemic, long term		0.649

3.3.12. Worker exposure: Industrial use of laundry products; CS1-p; Laundry detergent. Automatic process; AISE-P101; CS2-p; Conditioner (softner/starch). Automatic process; AISE-P104; CS3-p; Laundry aid (gasing). Automatic process; AISE-P107; CS4-p; Laundry aid (non-gasing). Automatic process; AISE-P110; CS13-p; Industrial use of food beverage and pharmaceutical products; AISE-P801; CS14-p; Food process cleaner. Cleaning In place (CIP) process; AISE-P802; CS15-p; Food process cleaner. Semi closed cleaning process; Chain maintenance product. Automatic spray process; AISE-P803; CS17-p; Defoaming product. Automatic process; AISE-P805 (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.396 mg/m³ (TRA Workers 3.0)	0.322
Dermal, systemic, long term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.392
Combined, systemic, long term		0.714

3.3.13. Worker exposure: Industrial use of water treatment products; CS23-p; Preservation and sanitation agent . Drink and pool water; AISE-P904; CS24-p; Sanitation agent. Waste water; AISE-P905; Industrial use of façade/surface cleaning products; CS25-p; Façade/surface cleaner. High pressure process; AISE-P906; CS26-p; Façade/surface cleaner. Medium pressure process; AISE-P907 (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.277 mg/m³ (TRA Workers 3.0)	0.226
Dermal, systemic, long term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.392
Combined, systemic, long term		0.617

3.3.14. Worker exposure: Industrial use of vehicle cleaning products; CS5-p; Train cleaner. Semi-Automatic process; AISE-P707; CS6-p; Aeroplane cleaner. Semi-Automatic process; AISE-P708; CS7-p; Car wash product. Semi-Automatic process; AISE-P709; CS8-p; Car wash product. Spray and rinse process; AISE-P710; CS10-p; Dewaxing product. Semi-Automatic process; AISE-P712; Industrial use of food beverage and pharmaceutical products; CS19-p; Foam cleaner. Semi-Automatic without venting process; AISE-P807; CS22-p; Disinfection product. Fogging and gassing Semi-automatic process; AISE-P811 (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR

Inhalation, systemic, long term	0.793 mg/m³ (TRA Workers 3.0)	0.645
Dermal, systemic, long term	0.069 mg/kg bw/day (TRA Workers 3.0)	0.196
Combined, systemic, long term		0.84

3.3.15. Worker exposure: Industrial use of vehicle cleaning products; CS9-p; Car wash product. Spray and wipe manual process; AISE-P711; CS11-p; Boat cleaner. Manual process; AISE-P713; CS12-p; Boat cleaner. Spray and wipe manual process; AISE-P714 (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.555 mg/m³ (TRA Workers 3.0)	0.451
Dermal, systemic, long term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.392
Combined, systemic, long term		0.843

3.3.16. Worker exposure: Industrial use of food beverage and pharmaceutical products; CS20-p; Animal housing care. Semi-Automatic process; AISE-P809; CS21-p; Disinfection product. Semi-automatic process; AISE-P810 (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.793 mg/m³ (TRA Workers 3.0)	0.645
Dermal, systemic, long term	0.069 mg/kg bw/day (TRA Workers 3.0)	0.196
Combined, systemic, long term		0.84

3.3.17. Worker exposure: Industrial use of food beverage and pharmaceutical products; CS18-p; Foam cleaner. Semi-Automatic with venting process; AISE-P806 (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.04 mg/m³ (TRA Workers 3.0)	0.032
Dermal, systemic, long term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.783
Combined, systemic, long term		0.816

3.3.18. Worker exposure: Industrial use of vehicle cleaning products; CS9-u2; Car wash product. Spray and wipe manual process; AISE-P711; CS12-u2; Boat cleaner. Manual process; AISE-P713; CS11-u; Boat cleaner. Spray and wipe manual process; AISE-P714 (PROC 10)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	1.7E-3 mg/m³ (ART)	< 0.01
Dermal, systemic, long term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.392
Combined, systemic, long term		0.393

3.3.19. Worker exposure: Industrial use of food beverage and pharmaceutical products; CS16-u; Chain maintenance product. Automatic drip and brush process; AISE-P804 (PROC 13)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.793 mg/m³ (TRA Workers 3.0)	0.645
Dermal, systemic, long term	0.069 mg/kg bw/day (TRA Workers 3.0)	0.196
Combined, systemic, long term		0.84

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

Scaling instructions: As the environmental release factor depends on site specific operational conditions and risk management measures, Downstream Users (DU) are advised to demonstrate that a safe use is given for the amounts used at their site. Scaling may be a suitable option in this case, (ECHA Guidance for downstream users and Guidance on the compilation of safety data sheets). Scaling is a comparison of linear input parameters and determinants between data presented in the Exposure Scenario (ES) and the data available from the Downstream User to determine the risk characterisation ratios (RCR) under the operational conditions of the DU (eg. quantity of substance used per year and site, emission fraction to water, number of emission days).

4. ES 4: Widespread use by professional workers; Washing and Cleaning Products

4.1. Title section

ES name: GES 4; Professional end-use of washing and cleaning products

Product category: Washing and Cleaning Products (PC 35)

Environment	
1: GES 4; Professional end-use of washing and cleaning products	ERC 8a
Worker	
2: Professional use of laundry products; CS1-u; Laundry detergent. Semi automatic process; AISE-P102; CS3-u; Conditioner (softner/starch). Semi automatic process; AISE-P105; CS4-u; Laundry aid (gasing). Semi automatic process; AISE-P108; CS5-u; Laundry aid (non-gasing). Semi automatic process; AISE-P111; Professional use of dishwashing products; CS10-u; Dishwash product. Semi-Automatic process; AISE-P203; CS11-u; Rinse aid. Automatic process; AISE-P204; Professional use of medical devices; CS48-u; Medical devices . Semi-automatic process; AISE-P1101	PROC 1
3: Professional use of dishwashing products; CS9-u; Dishwash product. Automatic process; AISE-P202	PROC 2
4: Professional use of laundry products; CS6-u; Laundry aid (non-gasing). Manual process; AISE-P112	PROC 4
5: Professional use of vehicle cleaning products; Semi-automated task; CS39-u; Car wash product. Semi-Automatic process; AISE-P701; CS42-u; Dewaxing product. Semi-Automatic process; AISE-P704	PROC 4
6: Professional use of laundry products; CS1-p; Laundry detergent. Semi automatic process; AISE-P102; CS3-p; Conditioner (softner/starch). Semi automatic process; AISE-P105; CS4-p; Laundry aid (gasing). Semi automatic process; AISE-P108; CS5-p; Laundry aid (non-gasing). Semi automatic process; AISE-P111; CS6-p; Laundry aid (non-gasing). Manual process; AISE-P112; Professional use of dishwashing products; CS10-p; Dishwash product. Semi-Automatic process; AISE-P203; CS11-p; Rinse aid. Automatic process; AISE-P204; Professional use of general surface cleaning products; CS20-p; Descaling agent. Dipping process; AISE-P309; Professional use of medical devices; CS48-p; Medical devices . Semi-automatic process; AISE-P1101; CS49-p; Medical devices . Dipping process; AISE-P1102	PROC 8a
7: Professional use of façade/surface cleaning products; CS46-p; Façade/surface cleaner. High pressure process; AISE-P901; CS47-p; Façade/surface cleaner. Medium pressure process; AISE-P902	PROC 8a
8: Professional use of dishwashing products; CS8-p; Dishwash product. Manual process; AISE-P201	PROC 8a
9: Professional use of floor care products; CS31-p; Floor cleaner. Manual process; AISE-P403; CS29-p; Floor cleaner. Semi-Automatic process; AISE-P401; CS30-p; Floor cleaner. Spray and wipe manual process; AISE-P402; CS34-p; Carpet cleaner. Manual process; AISE-P409; CS35-p; Carpet cleaner. Semi-Automatic process; AISE-P410; Professional use of general surface cleaning products; CS12-p; General purpose cleaner. Manual process; AISE-P301; CS13-p; General purpose cleaner. Spray and wipe manual process; AISE-P302; CS14-p; Kitchen cleaner. Manual process; AISE-P303; CS15-p; Kitchen cleaner. Spray and wipe manual process; AISE-P304; CS16-p; Sanitary cleaner. Manual process; AISE-P305; CS17-p; Sanitary cleaner. Spray and wipe manual process; AISE-P306; CS23-p; Glass cleaner. Manual process; AISE-P312; Professional use; Pharmaceuticals; CS45-p; Animal housing care. Manual process; AISE-P808; Professional use of medical devices; CS51-p; Medical devices . Spray process; AISE-P1104	PROC 8a
10: Professional use of vehicle cleaning products; CS39-p; Car wash product. Semi-Automatic process; AISE-P701; CS40-p; Car wash product. Spray and wipe manual process; AISE-P702; CS42-p; Dewaxing product. Semi-Automatic process; AISE-P704; Professional use of laundry products; CS2-p; Laundry detergent. Manual process; AISE-P103; Professional use of general surface cleaning products; CS19-p; Descaling agent. Spray and rinse manual process; AISE-P308; CS25-p; Surface disinfactant. Manual process; AISE-P314; CS26-p; Surface disinfactant. Spray and rinse manual process; AISE-P315; Professional use of floor care products; CS32-p; Floor stripper. Manual process; AISE-P404; CS33-p; Floor stripper. Semi-Automatic process; AISE-P405; Professional use of medical devices; CS50-p; Medical devices . Manual process; AISE-P1103	PROC 8a
11: Professional use of vehicle cleaning products; CS41-p; Car wash product. Spray and wipe manual process; AISE-P703; CS43-p; Boat cleaner. Manual process; AISE-P705; CS44-p; Boat cleaner. Spray and wipe manual process; AISE-P706	PROC 8a
12: Professional use of dishwashing products; CS9-p; Dishwash product. Automatic process; AISE-P202	PROC 8b
13: Professional use of general surface cleaning products; CS21-u; Oven/Grill Cleaner. Manual process; AISE-P301	PROC 10
14: Professional use of laundry products; CS2-u; Laundry detergent. Manual process; AISE-P103; Professional use of dishwashing products; CS8-u; Dishwash product. Manual process; AISE-P201; Professional use of general surface cleaning products; CS28-u; Wet wipe. Manual process; AISE-P317; Professional use of floor care products; CS36-u1; Carpet cleaner. Spray and brush manual process; AISE-P411	PROC 10
15: Professional use of general surface cleaning products; CS18-u; Descaling agent. Manual process; AISE-P307	PROC 10
16: Professional use of floor care products; CS31-u; Floor cleaner. Manual process; AISE-P403; Professional use of laundry products; CS7-u1; Prespotter/Stain remover. Manual process; AISE-P113; Professional use of general surface cleaning products; CS12-u; General purpose cleaner. Manual process; AISE-P301; CS13-u1; General purpose cleaner. Spray and wipe manual process; AISE-P302; CS14-u; Kitchen cleaner. Manual process; AISE-P303; CS15-u1; Kitchen cleaner. Spray and wipe manual process; AISE-P304; CS16-u; Sanitary cleaner. Manual process; AISE-P305; CS17-u1; Sanitary cleaner. Spray and wipe manual process; AISE-P306; CS23-u; Glass cleaner. Manual process; AISE-P312; CS24-u1; Glass cleaner. Spray and wipe manual process; AISE-P313; CS25-u; Surface disinfactant. Manual process; AISE-P314; CS26-u1; Surface disinfactant. Spray and rinse manual	PROC 10

process; AISE-P315; CS27-u; Metal cleaning agent. Manual process; AISE-P316	
17: Professional use of floor care products; CS29-u; Floor cleaner. Semi-Automatic process; AISE-P401; CS30-u1; Floor cleaner. Spray and wipe manual process; AISE-P402; CS33-u; Floor stripper. Semi-Automatic process; AISE-P405; CS34-u; Carpet cleaner. Manual process; AISE-P409; CS35-u; Carpet cleaner. Semi-Automatic process; AISE-P410; Professional use; Pharmaceuticals; CS45-u; Animal housing care. Manual process; AISE-P808; Professional use of medical devices; CS50-u; Medical devices . Manual process; AISE-P1103; CS51-u1; Medical devices . Spray process; AISE-P1104	PROC 10
18: Professional use of general surface cleaning products; CS19-u1; Descaling agent. Spray and rinse manual process; AISE-P308; CS22-u1; Oven/Grill Cleaner. Spray and wipe manual process; AISE-P311; Professional use of floor care products; CS32-u; Floor stripper. Manual process; AISE-P404	PROC 10
19: Professional use of vehicle cleaning products; CS41-u1; Car wash product. Spray and wipe manual process; AISE-P703; CS43-u; Boat cleaner. Manual process; AISE-P705; CS44-u1; Boat cleaner. Spray and wipe manual process; AISE-P706	PROC 10
20: Professional use of façade/surface cleaning products; CS47-u1; Façade/surface cleaner. Medium pressure process; AISE-P902	PROC 10
21: Professional use of vehicle cleaning products; CS40-u; Car wash product. Spray and rinse process; AISE-P702; Professional use of laundry products; CS7-u2; Prespotter/Stain remover. Manual process; AISE-P113; Professional use of general surface cleaning products; CS13-u2; General purpose cleaner. Spray and wipe manual process; AISE-P302; CS15-u2; Kitchen cleaner. Spray and wipe manual process; AISE-P304; CS17-u2; Sanitary cleaner. Spray and wipe manual process; AISE-P306; CS24-u2; Glass cleaner. Spray and wipe manual process; AISE-P313; CS26-u2; Surface disinfactant. Spray and rinse manual process; AISE-P315; Professional use of floor care products; CS30-u2; Floor cleaner. Spray and wipe manual process; AISE-P402; CS36-u2; Carpet cleaner. Spray and brush manual process; AISE-P411; Professional use of medical devices; CS51-u2; Medical devices . Spray process; AISE-P1104	PROC 11
22: Professional use of general surface cleaning products; CS19-u2; Descaling agent. Spray and rinse manual process; AISE-P308; CS22-u2; Oven/Grill Cleaner. Spray and wipe manual process; AISE-P311	PROC 11
23: Professional use of vehicle cleaning products; CS41-u2; Car wash product. Spray and wipe manual process; AISE-P703; CS44-u2; Boat cleaner. Spray and wipe manual process; AISE-P706	PROC 11
24: Professional use of façade/surface cleaning products; CS47-u2; Façade/surface cleaner. Medium pressure process; AISE-P902	PROC 11
25: Professional use of façade/surface cleaning products; CS46-u; Façade/surface cleaner. High pressure process; AISE-P901	PROC 11
26: Professional use of maintenance products; CS37; Drain unblocker. Manual process; AISE-P606; CS38; Drain cleaner. Manual process; AISE-P607	PROC 13
27: Professional use of general surface cleaning products; CS20-u; Descaling agent. Dipping process; AISE-P309; Professional use of medical devices; CS49-u; Medical devices . Dipping process; AISE-P1102	PROC 13

4.2. Conditions of use affecting exposure

4.2.1. Control of environmental exposure: GES 4; Professional end-use of washing and cleaning products (ERC 8a)

Amount used, frequency and duration of use (or from service life)
Daily local widespread use amount; <=; 0; tonnes/day

4.2.2. Control of worker exposure

Conditions of use applicable to all contributing scenarios

Product (article) characteristics
Liquid
Covers concentrations up to 1 %
Technical and organisational conditions and measures
Room ventilation; Basic; Up to 3 air change per hour
Conditions and measures related to personal protection, hygiene and health evaluation
Face/eye protection; No.

Specific conditions of use per contributing scenario

Contributing scenario	**Specific conditions of use**

Professional use of laundry products; CS1-u; Laundry detergent. Semi automatic process; AISE-P102; CS3-u; Conditioner (softner/starch). Semi automatic process; AISE-P105; CS4-u; Laundry aid (gasing). Semi automatic process; AISE-P108; CS5-u; Laundry aid (non-gasing). Semi automatic process; AISE-P111; Professional use of dishwashing products; CS10-u; Dishwash product. Semi-Automatic process; AISE-P203; CS11-u; Rinse aid. Automatic process; AISE-P204; Professional use of medical devices; CS48-u; Medical devices . Semi-automatic process; AISE-P1101 (PROC 1)	Covers use up to 8 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Respiratory protection; No. Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Indoor use Assumes process temperature up to 40 °C
Professional use of dishwashing products; CS9-u; Dishwash product. Automatic process; AISE-P202 (PROC 2)	Covers use up to 8 h/day Occupational Health and Safety Management System; Basic Provide specifically designed and maintained LEV (receiving hood type). Ensure effectiveness is at least 80%. Respiratory protection; No. Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Indoor use Assumes process temperature up to 40 °C
Professional use of laundry products; CS6-u; Laundry aid (non-gasing). Manual process; AISE-P112 (PROC 4)	Covers use up to 0.25 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 40 °C
Professional use of vehicle cleaning products; Semi-automated task; CS39-u; Car wash product. Semi-Automatic process; AISE-P701; CS42-u; Dewaxing product. Semi-Automatic process; AISE-P704 (PROC 4)	Covers use up to 8 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 40 °C
Professional use of laundry products; CS1-p; Laundry detergent. Semi automatic process; AISE-P102; CS3-p; Conditioner (softner/starch). Semi automatic process; AISE-P105; CS4-p; Laundry aid (gasing). Semi automatic process; AISE-P108; CS5-p; Laundry aid (non-gasing). Semi automatic process; AISE-P111; CS6-p; Laundry aid (non-gasing). Manual process; AISE-P112; Professional use of dishwashing products; CS10-p; Dishwash product. Semi-Automatic process; AISE-P203; CS11-p; Rinse aid. Automatic process; AISE-P204; Professional use of general surface cleaning products; CS20-p; Descaling	Covers use up to 0.25 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 20 °C

agent. Dipping process; AISE-P309; Professional use of medical devices; CS48-p; Medical devices . Semi-automatic process; AISE-P1101; CS49-p; Medical devices . Dipping process; AISE-P1102 (PROC 8a)	
Professional use of façade/surface cleaning products; CS46-p; Façade/surface cleaner. High pressure process; AISE-P901; CS47-p; Façade/surface cleaner. Medium pressure process; AISE-P902 (PROC 8a)	Covers use up to 0.25 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Wear a respirator which reduces the air impurities by at least a factor of 10 (APF >= 10). For further specification, refer to section 8 of the SDS Indoor use Assumes process temperature up to 40 °C
Professional use of dishwashing products; CS8-p; Dishwash product. Manual process; AISE-P201 (PROC 8a)	Covers use up to 0.25 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 20 °C
Professional use of floor care products; CS31-p; Floor cleaner. Manual process; AISE-P403; CS29-p; Floor cleaner. Semi-Automatic process; AISE-P401; CS30-p; Floor cleaner. Spray and wipe manual process; AISE-P402; CS34-p; Carpet cleaner. Manual process; AISE-P409; CS35-p; Carpet cleaner. Semi-Automatic process; AISE-P410; Professional use of general surface cleaning products; CS12-p; General purpose cleaner. Manual process; AISE-P301; CS13-p; General purpose cleaner. Spray and wipe manual process; AISE-P302; CS14-p; Kitchen cleaner. Manual process; AISE-P303; CS15-p; Kitchen cleaner. Spray and wipe manual process; AISE-P304; CS16-p; Sanitary cleaner. Manual process; AISE-P305; CS17-p; Sanitary cleaner. Spray and wipe manual process; AISE-P306; CS23-p; Glass cleaner. Manual process; AISE-P312; Professional use; Pharmaceuticals; CS45-p; Animal housing care. Manual process; AISE-P808; Professional use of medical devices; CS51-p; Medical devices . Spray process; AISE-P1104 (PROC 8a)	Covers use up to 1 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 20 °C
Professional use of vehicle cleaning products; CS39-p; Car wash product. Semi-Automatic process; AISE-P701; CS40-p; Car wash product. Spray and wipe manual process; AISE-P702; CS42-p; Dewaxing product. Semi-	Covers use up to 1 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the

Automatic process; AISE-P704; Professional use of laundry products; CS2-p; Laundry detergent. Manual process; AISE-P103; Professional use of general surface cleaning products; CS19-p; Descaling agent. Spray and rinse manual process; AISE-P308; CS25-p; Surface disinfactant. Manual process; AISE-P314; CS26-p; Surface disinfactant. Spray and rinse manual process; AISE-P315; Professional use of floor care products; CS32-p; Floor stripper. Manual process; AISE-P404; CS33-p; Floor stripper. Semi-Automatic process; AISE-P405; Professional use of medical devices; CS50-p; Medical devices . Manual process; AISE-P1103 (PROC 8a)	hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 20 °C
Professional use of vehicle cleaning products; CS41-p; Car wash product. Spray and wipe manual process; AISE-P703; CS43-p; Boat cleaner. Manual process; AISE-P705; CS44-p; Boat cleaner. Spray and wipe manual process; AISE-P706 (PROC 8a)	Covers use up to 1 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Outdoor use Assumes process temperature up to 20 °C
Professional use of dishwashing products; CS9-p; Dishwash product. Automatic process; AISE-P202 (PROC 8b)	Covers use up to 0.25 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 20 °C
Professional use of general surface cleaning products; CS21-u; Oven/Grill Cleaner. Manual process; AISE-P301 (PROC 10)	Covers use up to 1 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 20 °C
Professional use of laundry products; CS2-u; Laundry detergent. Manual process; AISE-P103; Professional use of dishwashing products; CS8-u; Dishwash product. Manual process; AISE-P201; Professional use of general surface cleaning products; CS28-u; Wet wipe. Manual process; AISE-P317; Professional use of floor care products; CS36-u1; Carpet cleaner. Spray and brush manual process; AISE-P411 (PROC 10)	Covers use up to 4 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 40 °C
Professional use of general surface	Covers use up to 4 h/day

cleaning products; CS18-u; Descaling agent. Manual process; AISE-P307 (PROC 10)	Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 20 °C
Professional use of floor care products; CS31-u; Floor cleaner. Manual process; AISE-P403; Professional use of laundry products; CS7-u1; Prespotter/Stain remover. Manual process; AISE-P113; Professional use of general surface cleaning products; CS12-u; General purpose cleaner. Manual process; AISE-P301; CS13-u1; General purpose cleaner. Spray and wipe manual process; AISE-P302; CS14-u; Kitchen cleaner. Manual process; AISE-P303; CS15-u1; Kitchen cleaner. Spray and wipe manual process; AISE-P304; CS16-u; Sanitary cleaner. Manual process; AISE-P305; CS17-u1; Sanitary cleaner. Spray and wipe manual process; AISE-P306; CS23-u; Glass cleaner. Manual process; AISE-P312; CS24-u1; Glass cleaner. Spray and wipe manual process; AISE-P313; CS25-u; Surface disinfactant. Manual process; AISE-P314; CS26-u1; Surface disinfactant. Spray and rinse manual process; AISE-P315; CS27-u; Metal cleaning agent. Manual process; AISE-P316 (PROC 10)	Covers use up to 8 h/day Occupational Health and Safety Management System Local exhaust ventilation; No. Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Wear a respirator which reduces the air impurities by at least a factor of 10 (APF >= 10). For further specification, refer to section 8 of the SDS Indoor use Assumes process temperature up to 40 °C
Professional use of floor care products; CS29-u; Floor cleaner. Semi-Automatic process; AISE-P401; CS30-u1; Floor cleaner. Spray and wipe manual process; AISE-P402; CS33-u; Floor stripper. Semi-Automatic process; AISE-P405; CS34-u; Carpet cleaner. Manual process; AISE-P409; CS35-u; Carpet cleaner. Semi-Automatic process; AISE-P410; Professional use; Pharmaceuticals; CS45-u; Animal housing care. Manual process; AISE-P808; Professional use of medical devices; CS50-u; Medical devices . Manual process; AISE-P1103; CS51-u1; Medical devices . Spray process; AISE-P1104 (PROC 10)	Covers use up to 8 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Wear a respirator which reduces the air impurities by at least a factor of 10 (APF >= 10). For further specification, refer to section 8 of the SDS Indoor use Assumes process temperature up to 40 °C
Professional use of general surface cleaning products; CS19-u1; Descaling agent. Spray and rinse manual process; AISE-P308; CS22-u1; Oven/Grill Cleaner. Spray and wipe manual process; AISE-P311; Professional use of floor care products; CS32-u; Floor stripper. Manual process; AISE-P404	Covers use up to 8 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No.

Administrative information:
Report Information: SDS_FR/EN/GHS_SDS_EU_CNTRY/46
Sales & Distribution Information: VE01/FR/CH11/01
Shipping Order Information: 36 299 614/32 763 875

(PROC 10)	Indoor use Assumes process temperature up to 20 °C
Professional use of vehicle cleaning products; CS41-u1; Car wash product. Spray and wipe manual process; AISE-P703; CS43-u; Boat cleaner. Manual process; AISE-P705; CS44-u1; Boat cleaner. Spray and wipe manual process; AISE-P706 (PROC 10)	Covers use up to 8 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Outdoor use Assumes process temperature up to 20 °C
Professional use of façade/surface cleaning products; CS47-u1; Façade/surface cleaner. Medium pressure process; AISE-P902 (PROC 10)	Covers use up to 8 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 20 °C
Professional use of vehicle cleaning products; CS40-u; Car wash product. Spray and rinse process; AISE-P702; Professional use of laundry products; CS7-u2; Prespotter/Stain remover. Manual process; AISE-P113; Professional use of general surface cleaning products; CS13-u2; General purpose cleaner. Spray and wipe manual process; AISE-P302; CS15-u2; Kitchen cleaner. Spray and wipe manual process; AISE-P304; CS17-u2; Sanitary cleaner. Spray and wipe manual process; AISE-P306; CS24-u2; Glass cleaner. Spray and wipe manual process; AISE-P313; CS26-u2; Surface disinfactant. Spray and rinse manual process; AISE-P315; Professional use of floor care products; CS30-u2; Floor cleaner. Spray and wipe manual process; AISE-P402; CS36-u2; Carpet cleaner. Spray and brush manual process; AISE-P411; Professional use of medical devices; CS51-u2; Medical devices . Spray process; AISE-P1104 (PROC 11)	Covers use up to 1 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 20 °C
Professional use of general surface cleaning products; CS19-u2; Descaling agent. Spray and rinse manual process; AISE-P308; CS22-u2; Oven/Grill Cleaner. Spray and wipe manual process; AISE-P311 (PROC 11)	Covers use up to 1 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 20 °C
Professional use of vehicle cleaning products; CS41-u2; Car wash product. Spray and wipe manual process; AISE-P703; CS44-u2; Boat cleaner. Spray and wipe manual process; AISE-P706	Covers use up to 1 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner

(PROC 11)	equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Outdoor use Assumes process temperature up to 20 °C
Professional use of façade/surface cleaning products; CS47-u2; Façade/surface cleaner. Medium pressure process; AISE-P902 (PROC 11)	Covers use up to 1 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Wear a respirator which reduces the air impurities by at least a factor of 10 (APF >= 10). For further specification, refer to section 8 of the SDS Indoor use Assumes process temperature up to 20 °C
Professional use of façade/surface cleaning products; CS46-u; Façade/surface cleaner. High pressure process; AISE-P901 (PROC 11)	Covers use up to 8 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Wear a respirator which reduces the air impurities by at least a factor of 10 (APF >= 10). For further specification, refer to section 8 of the SDS Indoor use Assumes process temperature up to 20 °C
Professional use of maintenance products; CS37; Drain unblocker. Manual process; AISE-P606; CS38; Drain cleaner. Manual process; AISE-P607 (PROC 13)	Covers use up to 0.25 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 20 °C
Professional use of general surface cleaning products; CS20-u; Descaling agent. Dipping process; AISE-P309; Professional use of medical devices; CS49-u; Medical devices . Dipping process; AISE-P1102 (PROC 13)	Covers use up to 1 h/day Occupational Health and Safety Management System; Basic Local exhaust ventilation; No. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Respiratory protection; No. Indoor use Assumes process temperature up to 20 °C

4.3. Exposure estimation and reference to its source

4.3.1. Environmental release and exposure: GES 4; Professional end-use of washing and cleaning products (ERC 8a)

Release route	Release rate	Release estimation method
Water	0 kg/day	ERC
Air	0 kg/day	ERC
Soil	0 kg/day	ERC

4.3.2. Worker exposure: Professional use of laundry products; CS1-u; Laundry detergent. Semi automatic process; AISE-P102; CS3-u; Conditioner (softner/starch). Semi automatic process; AISE-P105; CS4-u; Laundry aid (gasing). Semi automatic process; AISE-P108; CS5-u; Laundry aid (non-gasing). Semi automatic process; AISE-P111; Professional use of dishwashing

products; CS10-u; Dishwash product. Semi-Automatic process; AISE-P203; CS11-u; Rinse aid. Automatic process; AISE-P204; Professional use of medical devices; CS48-u; Medical devices . Semi-automatic process; AISE-P1101 (PROC 1)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	7.93E-3 mg/m³ (TRA Workers 3.0)	< 0.01
Dermal, systemic, long term	6.8E-4 mg/kg bw/day (TRA Workers 3.0)	< 0.01
Combined, systemic, long term		< 0.01

4.3.3. Worker exposure: Professional use of dishwashing products; CS9-u; Dishwash product. Automatic process; AISE-P202 (PROC 2)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.793 mg/m³ (TRA Workers 3.0)	0.645
Dermal, systemic, long term	0.027 mg/kg bw/day (TRA Workers 3.0)	0.078
Combined, systemic, long term		0.723

4.3.4. Worker exposure: Professional use of laundry products; CS6-u; Laundry aid (non-gasing). Manual process; AISE-P112 (PROC 4)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.24 mg/m³ (ART)	0.195
Dermal, systemic, long term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.392
Combined, systemic, long term		0.587

4.3.5. Worker exposure: Professional use of vehicle cleaning products; Semi-automated task; CS39-u; Car wash product. Semi-Automatic process; AISE-P701; CS42-u; Dewaxing product. Semi-Automatic process; AISE-P704 (PROC 4)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.7 mg/m³ (ART)	0.569
Dermal, systemic, long term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.392
Combined, systemic, long term		0.961

4.3.6. Worker exposure: Professional use of laundry products; CS1-p; Laundry detergent. Semi automatic process; AISE-P102; CS3-p; Conditioner (softner/starch). Semi automatic process; AISE-P105; CS4-p; Laundry aid (gasing). Semi automatic process; AISE-P108; CS5-p; Laundry aid (non-gasing). Semi automatic process; AISE-P111; CS6-p; Laundry aid (non-gasing). Manual process; AISE-P112; Professional use of dishwashing products; CS10-p; Dishwash product. Semi-Automatic process; AISE-P203; CS11-p; Rinse aid. Automatic process; AISE-P204; Professional use of general surface cleaning products; CS20-p; Descaling agent. Dipping process; AISE-P309; Professional use of medical devices; CS48-p; Medical devices . Semi-automatic process; AISE-P1101; CS49-p; Medical devices . Dipping process; AISE-P1102 (PROC 8a)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	1.1E-3 mg/m³ (ART)	< 0.01
Dermal, systemic, long term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.392
Combined, systemic, long term		0.393

4.3.7. Worker exposure: Professional use of façade/surface cleaning products; CS46-p; Façade/surface cleaner. High pressure process; AISE-P901; CS47-p; Façade/surface cleaner. Medium pressure process; AISE-P902 (PROC 8a)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.198 mg/m³ (TRA Workers 3.0)	0.161
Dermal, systemic, long term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.783
Combined, systemic, long term		0.945

4.3.8. Worker exposure: Professional use of dishwashing products; CS8-p; Dishwash product.

Manual process; AISE-P201 (PROC 8a)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	1.1E-3 mg/m³ (ART)	< 0.01
Dermal, systemic, long term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.392
Combined, systemic, long term		0.393

4.3.9. Worker exposure: Professional use of floor care products; CS31-p; Floor cleaner. Manual process; AISE-P403; CS29-p; Floor cleaner. Semi-Automatic process; AISE-P401; CS30-p; Floor cleaner. Spray and wipe manual process; AISE-P402; CS34-p; Carpet cleaner. Manual process; AISE-P409; CS35-p; Carpet cleaner. Semi-Automatic process; AISE-P410; Professional use of general surface cleaning products; CS12-p; General purpose cleaner. Manual process; AISE-P301; CS13-p; General purpose cleaner. Spray and wipe manual process; AISE-P302; CS14-p; Kitchen cleaner. Manual process; AISE-P303; CS15-p; Kitchen cleaner. Spray and wipe manual process; AISE-P304; CS16-p; Sanitary cleaner. Manual process; AISE-P305; CS17-p; Sanitary cleaner. Spray and wipe manual process; AISE-P306; CS23-p; Glass cleaner. Manual process; AISE-P312; Professional use; Pharmaceuticals; CS45-p; Animal housing care. Manual process; AISE-P808; Professional use of medical devices; CS51-p; Medical devices . Spray process; AISE-P1104 (PROC 8a)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	4.4E-3 mg/m³ (ART)	< 0.01
Dermal, systemic, long term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.392
Combined, systemic, long term		0.395

4.3.10. Worker exposure: Professional use of vehicle cleaning products; CS39-p; Car wash product. Semi-Automatic process; AISE-P701; CS40-p; Car wash product. Spray and wipe manual process; AISE-P702; CS42-p; Dewaxing product. Semi-Automatic process; AISE-P704; Professional use of laundry products; CS2-p; Laundry detergent. Manual process; AISE-P103; Professional use of general surface cleaning products; CS19-p; Descaling agent. Spray and rinse manual process; AISE-P308; CS25-p; Surface disinfectant. Manual process; AISE-P314; CS26-p; Surface disinfectant. Spray and rinse manual process; AISE-P315; Professional use of floor care products; CS32-p; Floor stripper. Manual process; AISE-P404; CS33-p; Floor stripper. Semi-Automatic process; AISE-P405; Professional use of medical devices; CS50-p; Medical devices . Manual process; AISE-P1103 (PROC 8a)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	4.4E-3 mg/m³ (ART)	< 0.01
Dermal, systemic, long term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.392
Combined, systemic, long term		0.395

4.3.11. Worker exposure: Professional use of vehicle cleaning products; CS41-p; Car wash product. Spray and wipe manual process; AISE-P703; CS43-p; Boat cleaner. Manual process; AISE-P705; CS44-p; Boat cleaner. Spray and wipe manual process; AISE-P706 (PROC 8a)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	8.9E-3 mg/m³ (ART)	< 0.01
Dermal, systemic, long term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.392
Combined, systemic, long term		0.399

4.3.12. Worker exposure: Professional use of dishwashing products; CS9-p; Dishwash product. Automatic process; AISE-P202 (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	1.1E-3 mg/m³ (ART)	< 0.01
Dermal, systemic, long term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.392
Combined, systemic, long term		0.393

4.3.13. Worker exposure: Professional use of general surface cleaning products; CS21-u; Oven/Grill Cleaner. Manual process; AISE-P301 (PROC 10)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	4.9E-3 mg/m³ (ART)	< 0.01
Dermal, systemic, long term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.784
Combined, systemic, long term		0.788

4.3.14. Worker exposure: Professional use of laundry products; CS2-u; Laundry detergent. Manual process; AISE-P103; Professional use of dishwashing products; CS8-u; Dishwash product. Manual process; AISE-P201; Professional use of general surface cleaning products; CS28-u; Wet wipe. Manual process; AISE-P317; Professional use of floor care products; CS36-u1; Carpet cleaner. Spray and brush manual process; AISE-P411 (PROC 10)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.18 mg/m³ (ART)	0.146
Dermal, systemic, long term	0.043 mg/kg bw/day (Riskofderm)	0.123
Combined, systemic, long term		0.269

4.3.15. Worker exposure: Professional use of general surface cleaning products; CS18-u; Descaling agent. Manual process; AISE-P307 (PROC 10)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.02 mg/m³ (ART)	0.016
Dermal, systemic, long term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.784
Combined, systemic, long term		0.8

4.3.16. Worker exposure: Professional use of floor care products; CS31-u; Floor cleaner. Manual process; AISE-P403; Professional use of laundry products; CS7-u1; Prespotter/Stain remover. Manual process; AISE-P113; Professional use of general surface cleaning products; CS12-u; General purpose cleaner. Manual process; AISE-P301; CS13-u1; General purpose cleaner. Spray and wipe manual process; AISE-P302; CS14-u; Kitchen cleaner. Manual process; AISE-P303; CS15-u1; Kitchen cleaner. Spray and wipe manual process; AISE-P304; CS16-u; Sanitary cleaner. Manual process; AISE-P305; CS17-u1; Sanitary cleaner. Spray and wipe manual process; AISE-P306; CS23-u; Glass cleaner. Manual process; AISE-P312; CS24-u1; Glass cleaner. Spray and wipe manual process; AISE-P313; CS25-u; Surface disinfactant. Manual process; AISE-P314; CS26-u1; Surface disinfactant. Spray and rinse manual process; AISE-P315; CS27-u; Metal cleaning agent. Manual process; AISE-P316 (PROC 10)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.35 mg/m³ (ART)	0.285
Dermal, systemic, long term	0.08 mg/kg bw/day (Riskofderm)	0.229
Combined, systemic, long term		0.513

4.3.17. Worker exposure: Professional use of floor care products; CS29-u; Floor cleaner. Semi-Automatic process; AISE-P401; CS30-u1; Floor cleaner. Spray and wipe manual process; AISE-P402; CS33-u; Floor stripper. Semi-Automatic process; AISE-P405; CS34-u; Carpet cleaner. Manual process; AISE-P409; CS35-u; Carpet cleaner. Semi-Automatic process; AISE-P410; Professional use; Pharmaceuticals; CS45-u; Animal housing care. Manual process; AISE-P808; Professional use of medical devices; CS50-u; Medical devices . Manual process; AISE-P1103; CS51-u1; Medical devices . Spray process; AISE-P1104 (PROC 10)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.35 mg/m³ (ART)	0.285
Dermal, systemic, long term	0.08 mg/kg bw/day (Riskofderm)	0.229
Combined, systemic, long term		0.513

4.3.18. Worker exposure: Professional use of general surface cleaning products; CS19-u1; Descaling agent. Spray and rinse manual process; AISE-P308; CS22-u1; Oven/Grill Cleaner. Spray and wipe manual process; AISE-P311; Professional use of floor care products; CS32-u; Floor stripper. Manual process; AISE-P404 (PROC 10)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.039 mg/m³ (ART)	0.032
Dermal, systemic, long term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.784
Combined, systemic, long term		0.815

4.3.19. Worker exposure: Professional use of vehicle cleaning products; CS41-u1; Car wash product. Spray and wipe manual process; AISE-P703; CS43-u; Boat cleaner. Manual process; AISE-P705; CS44-u1; Boat cleaner. Spray and wipe manual process; AISE-P706 (PROC 10)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.079 mg/m³ (ART)	0.064
Dermal, systemic, long term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.784
Combined, systemic, long term		0.848

4.3.20. Worker exposure: Professional use of façade/surface cleaning products; CS47-u1; Façade/surface cleaner. Medium pressure process; AISE-P902 (PROC 10)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.039 mg/m³ (ART)	0.032
Dermal, systemic, long term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.784
Combined, systemic, long term		0.815

4.3.21. Worker exposure: Professional use of vehicle cleaning products; CS40-u; Car wash product. Spray and rinse process; AISE-P702; Professional use of laundry products; CS7-u2; Prespotter/Stain remover. Manual process; AISE-P113; Professional use of general surface cleaning products; CS13-u2; General purpose cleaner. Spray and wipe manual process; AISE-P302; CS15-u2; Kitchen cleaner. Spray and wipe manual process; AISE-P304; CS17-u2; Sanitary cleaner. Spray and wipe manual process; AISE-P306; CS24-u2; Glass cleaner. Spray and wipe manual process; AISE-P313; CS26-u2; Surface disinfactant. Spray and rinse manual process; AISE-P315; Professional use of floor care products; CS30-u2; Floor cleaner. Spray and wipe manual process; AISE-P402; CS36-u2; Carpet cleaner. Spray and brush manual process; AISE-P411; Professional use of medical devices; CS51-u2; Medical devices . Spray process; AISE-P1104 (PROC 11)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.049 mg/m³ (ART)	0.04
Dermal, systemic, long term	0.11 mg/kg bw/day (Riskofderm)	0.314
Combined, systemic, long term		0.354

4.3.22. Worker exposure: Professional use of general surface cleaning products; CS19-u2; Descaling agent. Spray and rinse manual process; AISE-P308; CS22-u2; Oven/Grill Cleaner. Spray and wipe manual process; AISE-P311 (PROC 11)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.049 mg/m³ (ART)	0.04
Dermal, systemic, long term	0.11 mg/kg bw/day (Riskofderm)	0.314
Combined, systemic, long term		0.354

4.3.23. Worker exposure: Professional use of vehicle cleaning products; CS41-u2; Car wash product. Spray and wipe manual process; AISE-P703; CS44-u2; Boat cleaner. Spray and wipe manual process; AISE-P706 (PROC 11)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.1 mg/m³ (ART)	0.081

Dermal, systemic, long term	0.05 mg/kg bw/day (Riskofderm)	0.143
Combined, systemic, long term		0.224

4.3.24. Worker exposure: Professional use of façade/surface cleaning products; CS47-u2; Façade/surface cleaner. Medium pressure process; AISE-P902 (PROC 11)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.019 mg/m³ (ART)	0.015
Dermal, systemic, long term	0.11 mg/kg bw/day (Riskofderm)	0.314
Combined, systemic, long term		0.33

4.3.25. Worker exposure: Professional use of façade/surface cleaning products; CS46-u; Façade/surface cleaner. High pressure process; AISE-P901 (PROC 11)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.15 mg/m³ (ART)	0.122
Dermal, systemic, long term	0.11 mg/kg bw/day (Riskofderm)	0.314
Combined, systemic, long term		0.436

4.3.26. Worker exposure: Professional use of maintenance products; CS37; Drain unblocker. Manual process; AISE-P606; CS38; Drain cleaner. Manual process; AISE-P607 (PROC 13)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	1.1E-4 mg/m³ (ART)	< 0.01
Dermal, systemic, long term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.392
Combined, systemic, long term		0.392

4.3.27. Worker exposure: Professional use of general surface cleaning products; CS20-u; Descaling agent. Dipping process; AISE-P309; Professional use of medical devices; CS49-u; Medical devices . Dipping process; AISE-P1102 (PROC 13)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	4.9E-3 mg/m³ (ART)	< 0.01
Dermal, systemic, long term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.392
Combined, systemic, long term		0.396

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

Guidance: The total tonnage of all end-uses is considered under ES6..; (; except; Annual site tonnage; Industrial end-use of washing and cleaning products; GES 3; ERC 4;); Since the products used by professionals will not differ much from those used by consumers and since the conditions of environmental release are very similar for professionals and consumers, potential environmental exposure to the substance due to professional and private use was combined under GES6.
Scaling instructions: As the environmental release factor depends on site specific operational conditions and risk management measures, Downstream Users (DU) are advised to demonstrate that a safe use is given for the amounts used at their site. Scaling may be a suitable option in this case, (ECHA Guidance for downstream users and Guidance on the compilation of safety data sheets). Scaling is a comparison of linear input parameters and determinants between data presented in the Exposure Scenario (ES) and the data available from the Downstream User to determine the risk characterisation ratios (RCR) under the operational conditions of the DU (eg. quantity of substance used per year and site, emission fraction to water, number of emission days).

5. ES 5: Widespread use by professional workers; Polishes and Wax Blends

5.1. Title section

ES name: GES 5; Professional end-use of polishes and wax blends
Product category: Polishes and Wax Blends (PC 31)

Environment	
1: Professional end-use of polishes and wax blends	ERC 8a
Worker	
2: Professional use of maintenance products; CS8-u; Leather care product. Automatic process; AISE-P605	PROC 2
3: Professional use of maintenance products; CS8-p; Leather care product. Automatic process; AISE-P605	PROC 8b
4: Professional use of maintenance products; CS4-u; Furniture care product. Manual process; AISE-P601;	PROC 10

Furniture care product. Spray and wipe manual process; AISE-P602; CS6-u; Leather care product. Manual process; AISE-P603; CS7-u1; Leather care product. Spray and wipe manual process; AISE-P604; CS10-u1; Stainless steel care. Spray and wipe manual process; AISE-P609	
5: Professional use of floor care products; CS1-u; Polish / impregnating agent. Manual process; AISE-P406; Polish / impregnating agent. Semi-Automatic process; AISE-P407; CS3-u1; Polish / impregnating agent. Spray and wipe manual process; AISE-P408; Professional use of maintenance products; CS9-u; Stainless steel care. Manual process; AISE-P608	PROC 10
6: Professional use of maintenance products; CS5-u2; Furniture care product. Spray and wipe manual process; AISE-P602; CS7-u2; Leather care product. Spray and wipe manual process; AISE-P604; CS10-u1; Stainless steel care. Spray and wipe manual process; AISE-P609	PROC 11
7: Professional use of maintenance products; CS3-u2; Polish / impregnating agent. Spray and wipe manual process; AISE-P408	PROC 11

5.2. Conditions of use affecting exposure

5.2.1. Control of environmental exposure: Professional end-use of polishes and wax blends (ERC 8a)

Amount used, frequency and duration of use (or from service life)
Daily local widespread use amount; <=; 0; tonnes/day

5.2.2. Control of worker exposure

Conditions of use applicable to all contributing scenarios

Product (article) characteristics
Liquid
Covers concentrations up to 1 %
Technical and organisational conditions and measures
Room ventilation; Basic; Up to 3 air change per hour
Occupational Health and Safety Management System; Basic
Local exhaust ventilation; No.
Conditions and measures related to personal protection, hygiene and health evaluation
Respiratory protection; No.
Face/eye protection; No.
Other conditions affecting workers exposure
Indoor use

Specific conditions of use per contributing scenario

Contributing scenario	Specific conditions of use
Professional use of maintenance products; CS8-u; Leather care product. Automatic process; AISE-P605 (PROC 2)	Covers use up to 8 h/day Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Assumes process temperature up to 40 °C
Professional use of maintenance products; CS8-p; Leather care product. Automatic process; AISE-P605 (PROC 8b)	Covers use up to 1 h/day Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Assumes process temperature up to 20 °C
Professional use of maintenance products; CS4-u; Furniture care product. Manual process; AISE-P601; Furniture care product. Spray and wipe manual process; AISE-P602; CS6-u; Leather care product. Manual process; AISE-P603; CS7-u1; Leather care	Covers use up to 4 h/day Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Assumes process temperature up to 20 °C

product. Spray and wipe manual process; AISE-P604; CS10-u1; Stainless steel care. Spray and wipe manual process; AISE-P609 (PROC 10)	
Professional use of floor care products; CS1-u; Polish / impregnating agent. Manual process; AISE-P406; Polish / impregnating agent. Semi-Automatic process; AISE-P407; CS3-u1; Polish / impregnating agent. Spray and wipe manual process; AISE-P408; Professional use of maintenance products; CS9-u; Stainless steel care. Manual process; AISE-P608 (PROC 10)	Covers use up to 8 h/day Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Assumes process temperature up to 20 °C
Professional use of maintenance products; CS5-u2; Furniture care product. Spray and wipe manual process; AISE-P602; CS7-u2; Leather care product. Spray and wipe manual process; AISE-P604; CS10-u1; Stainless steel care. Spray and wipe manual process; AISE-P609 (PROC 11)	Covers use up to 0.25 h/day Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Assumes process temperature up to 20 °C
Professional use of maintenance products; CS3-u2; Polish / impregnating agent. Spray and wipe manual process; AISE-P408 (PROC 11)	Covers use up to 1 h/day Wear suitable gloves tested to EN374.; If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.; For further specification, refer to section 8 of the SDS. Assumes process temperature up to 20 °C

5.3. Exposure estimation and reference to its source

5.3.1. Environmental release and exposure: Professional end-use of polishes and wax blends (ERC 8a)

Release route	Release rate	Release estimation method
Water	0 kg/day	ERC
Air	0 kg/day	ERC
Soil	0 kg/day	ERC

5.3.2. Worker exposure: Professional use of maintenance products; CS8-u; Leather care product. Automatic process; AISE-P605 (PROC 2)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.039 mg/m³ (ART)	0.032
Dermal, systemic, long term	0.027 mg/kg bw/day (TRA Workers 3.0)	0.078
Combined, systemic, long term		0.11

5.3.3. Worker exposure: Professional use of maintenance products; CS8-p; Leather care product. Automatic process; AISE-P605 (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	4.3E-3 mg/m³ (ART)	< 0.01
Dermal, systemic, long term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.392
Combined, systemic, long term		0.395

5.3.4. Worker exposure: Professional use of maintenance products; CS4-u; Furniture care product. Manual process; AISE-P601; Furniture care product. Spray and wipe manual process; AISE-P602; CS6-u; Leather care product. Manual process; AISE-P603; CS7-u1; Leather care

product. Spray and wipe manual process; AISE-P604; CS10-u1; Stainless steel care. Spray and wipe manual process; AISE-P609 (PROC 10)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.02 mg/m³ (ART)	0.016
Dermal, systemic, long term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.784
Combined, systemic, long term		0.8

5.3.5. Worker exposure: Professional use of floor care products; CS1-u; Polish / impregnating agent. Manual process; AISE-P406; Polish / impregnating agent. Semi-Automatic process; AISE-P407; CS3-u1; Polish / impregnating agent. Spray and wipe manual process; AISE-P408; Professional use of maintenance products; CS9-u; Stainless steel care. Manual process; AISE-P608 (PROC 10)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.039 mg/m³ (ART)	0.032
Dermal, systemic, long term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.784
Combined, systemic, long term		0.815

5.3.6. Worker exposure: Professional use of maintenance products; CS5-u2; Furniture care product. Spray and wipe manual process; AISE-P602; CS7-u2; Leather care product. Spray and wipe manual process; AISE-P604; CS10-u1; Stainless steel care. Spray and wipe manual process; AISE-P609 (PROC 11)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.11 mg/m³ (ART)	0.089
Dermal, systemic, long term	0.028 mg/kg bw/day (Riskofderm)	0.08
Combined, systemic, long term		0.169

5.3.7. Worker exposure: Professional use of maintenance products; CS3-u2; Polish / impregnating agent. Spray and wipe manual process; AISE-P408 (PROC 11)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.049 mg/m³ (ART)	0.04
Dermal, systemic, long term	0.11 mg/kg bw/day (Riskofderm)	0.314
Combined, systemic, long term		0.354

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

Guidance: The total tonnage of all end-uses is covered under GES6; (; except; Annual site tonnage; Industrial end-use of washing and cleaning products; GES 3; ERC 4;); Since the products used by professionals will not differ much from those used by consumers and since the conditions of environmental release are very similar for professionals and consumers, potential environmental exposure to the substance due to professional and private use was combined under GES6.
Scaling instructions: As the environmental release factor depends on site specific operational conditions and risk management measures, Downstream Users (DU) are advised to demonstrate that a safe use is given for the amounts used at their site. Scaling may be a suitable option in this case, (ECHA Guidance for downstream users and Guidance on the compilation of safety data sheets). Scaling is a comparison of linear input parameters and determinants between data presented in the Exposure Scenario (ES) and the data available from the Downstream User to determine the risk characterisation ratios (RCR) under the operational conditions of the DU (eg. quantity of substance used per year and site, emission fraction to water, number of emission days).

6. ES 6: Consumer use; Washing and Cleaning Products

6.1. Title section

ES name: GES 6; Consumer end-use of washing and cleaning products
Product category: Washing and Cleaning Products (PC 35)

Environment	
1: GES 6; Consumer end-use of washing and cleaning products	ERC 8d, ERC 8a
Consumer	

2: CS1; Consumer uses; Laundry and dish washing products; LAUNDRY REGULAR (powder, liquid) for consumer use; AISE-C1; LAUNDRY COMPACT (powder, liquid/gel, tablet) for consumer use; AISE-C2; FABRIC CONDITIONERS (liquid regular, liquid concentrate) for consumer use; AISE-C3; LAUNDRY ADDITIVES (powder bleach, liquid bleach, tablet) for consumer use; AISE-C4; LAUNDRY AIDS (ironing aids-starch spray, ironing aids-other) for consumer use; AISE-C12; Covers adult use.	PC 35
3: CS1; Consumer use; Laundry and dish washing products; LAUNDRY REGULAR (powder, liquid) for consumer use; AISE-C1; LAUNDRY COMPACT (powder, liquid/gel, tablet) for consumer use; AISE-C2; FABRIC CONDITIONERS (liquid regular, liquid concentrate) for consumer use; AISE-C3; LAUNDRY ADDITIVES (powder bleach, liquid bleach, tablet) for consumer use; AISE-C4; LAUNDRY AIDS (ironing aids-starch spray, ironing aids-other) for consumer use; AISE-C12; Covers child use.	PC 35
4: CS1; Consumer uses; HAND DISHWASHING (liquid regular, liquid concentrate) for consumer use; AISE-C5	PC 35
5: CS1; Consumer uses; MACHINE DISHWASHING (powder, liquid, tablet) for consumer use; AISE-C6	PC 35
6: CS2; Consumer uses; Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners); SURFACE CLEANERS (liquid, powder, gel neat, spray neat) for consumer use; AISE-C7; Covers adult use.	PC 35
7: CS2; Consumer uses; Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners); SURFACE CLEANERS (liquid, powder, gel neat, spray neat) for consumer use; AISE-C7; Covers child use.	PC 35
8: CS2; Consumer uses; Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners); TOILET CLEANERS (powder, liquid, gel, tablet) for consumer use; AISE-C8	PC 35
9: CS2; Consumer uses; Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners); CARPET CLEANERS (spray, liquid) for consumer use; AISE-C11; Covers adult use.	PC 35
10: CS2; Consumer uses; Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners); CARPET CLEANERS (spray, liquid) for consumer use; AISE-C11; Covers child use.	PC 35
11: CS2; Consumer uses; Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners); WIPES (bathroom, kitchen, floor) for consumer use; AISE-C15; Covers adult use.	PC 35
12: CS2; Consumer uses; Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners); WIPES (bathroom, kitchen, floor) for consumer use; AISE-C15; Covers child use.	PC 35
13: CS3; Consumer uses; Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners); SURFACE CLEANERS (liquid, powder, gel neat, spray neat) for consumer use; AISE-C7	PC 35
14: CS3; Consumer uses; Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners); CARPET CLEANERS (spray, liquid) for consumer use; AISE-C11	PC 35

6.2. Conditions of use affecting exposure

6.2.1. Control of environmental exposure: GES 6; Consumer end-use of washing and cleaning products (ERC 8d, ERC 8a)

Amount used, frequency and duration of use (or from service life)
Daily local widespread use amount; <=; 3.3E-4; tonnes/day
Other conditions affecting environmental exposure
Municipal sewage treatment plant is assumed.

6.2.2. Control of consumer exposure: CS1; Consumer uses; Laundry and dish washing products; LAUNDRY REGULAR (powder, liquid) for consumer use; AISE-C1; LAUNDRY COMPACT (powder, liquid/gel, tablet) for consumer use; AISE-C2; FABRIC CONDITIONERS (liquid regular, liquid concentrate) for consumer use; AISE-C3; LAUNDRY ADDITIVES (powder bleach, liquid bleach, tablet) for consumer use; AISE-C4; LAUNDRY AIDS (ironing aids-starch spray, ironing aids-other) for consumer use; AISE-C12; Covers adult use. (PC 35)

Product (article) characteristics
Covers concentrations up to 0.1 %
Physical form of product; Liquids
Exposure route; dermal; Yes
Exposure route; Inhalation; Yes
Oral exposure is considered to be not relevant.

No spraying
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 1 events per day
Frequency of use over a year; Frequent
Information and behavioral advice for consumers
Covers adult use.
Indoor use

6.2.3. Control of consumer exposure: CS1; Consumer use; Laundry and dish washing products; LAUNDRY REGULAR (powder, liquid) for consumer use; AISE-C1; LAUNDRY COMPACT (powder, liquid/gel, tablet) for consumer use; AISE-C2; FABRIC CONDITIONERS (liquid regular, liquid concentrate) for consumer use; AISE-C3; LAUNDRY ADDITIVES (powder bleach, liquid bleach, tablet) for consumer use; AISE-C4; LAUNDRY AIDS (ironing aids-starch spray, ironing aids-other) for consumer use; AISE-C12; Covers child use. (PC 35)

Product (article) characteristics
Covers concentrations up to 0.1 %
Physical form of product; Liquids
Inhalation exposure is considered to be not relevant.
Exposure route; dermal; Yes
Oral exposure is considered to be not relevant.
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 1 events per day
Frequency of use over a year; Frequent
Information and behavioral advice for consumers
Covers child use.

6.2.4. Control of consumer exposure: CS1; Consumer uses; HAND DISHWASHING (liquid regular, liquid concentrate) for consumer use; AISE-C5 (PC 35)

Product (article) characteristics
Covers concentrations up to 0.05 %
Physical form of product; Liquids
Exposure route; dermal; Yes
Exposure route; Inhalation; Yes
Exposure route; oral; Yes
No spraying
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 1.2 events per day
Frequency of use over a year; Frequent
Exposure duration = 0.75 h/event
Information and behavioral advice for consumers
Covers adult use.
Indoor use

6.2.5. Control of consumer exposure: CS1; Consumer uses; MACHINE DISHWASHING (powder, liquid, tablet) for consumer use; AISE-C6 (PC 35)

Product (article) characteristics
Covers concentrations up to 0.05 %
Physical form of product; Liquids
Exposure route; dermal; Yes

Exposure route; Inhalation; Yes
Exposure route; oral; Yes
No spraying
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 1 events per day
Frequency of use over a year; Frequent
Information and behavioral advice for consumers
Covers adult use.
Indoor use

6.2.6. Control of consumer exposure: CS2; Consumer uses; Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners); SURFACE CLEANERS (liquid, powder, gel neat, spray neat) for consumer use; AISE-C7; Covers adult use. (PC 35)

Product (article) characteristics
Covers concentrations up to 0.1 %
Physical form of product; Liquids
Exposure route; dermal; Yes
Exposure route; Inhalation; Yes
Oral exposure is considered to be not relevant.
No spraying
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 1 events per day
Frequency of use over a year; Frequent
Exposure duration = 4 h/event
For each use event, covers use amounts up to 500 g/event
Information and behavioral advice for consumers
Covers adult use.
Indoor use

6.2.7. Control of consumer exposure: CS2; Consumer uses; Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners); SURFACE CLEANERS (liquid, powder, gel neat, spray neat) for consumer use; AISE-C7; Covers child use. (PC 35)

Product (article) characteristics
Covers concentrations up to 0.1 %
Physical form of product; Liquids
Exposure route; dermal; Yes
Inhalation exposure is considered to be not relevant.
Exposure route; oral; Yes
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 1 events per day
Frequency of use over a year; Frequent
Information and behavioral advice for consumers
Covers child use.

6.2.8. Control of consumer exposure: CS2; Consumer uses; Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners); TOILET CLEANERS (powder, liquid, gel, tablet) for consumer use; AISE-C8 (PC 35)

Product (article) characteristics
Covers concentrations up to 0.3 %
Physical form of product; Liquids
Exposure route; dermal; Yes
Exposure route; Inhalation; Yes
Oral exposure is considered to be not relevant.
No spraying
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 1 events per day
Frequency of use over a year; Frequent
For each use event, covers use amounts up to 80 g/event
Exposure duration = 0.12 h/event
Information and behavioral advice for consumers
Covers adult use.
Indoor use

6.2.9. Control of consumer exposure: CS2; Consumer uses; Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners); CARPET CLEANERS (spray, liquid) for consumer use; AISE-C11; Covers adult use. (PC 35)

Product (article) characteristics
Covers concentrations up to 0.1 %
Physical form of product; Liquids
Exposure route; dermal; Yes
Exposure route; Inhalation; Yes
Oral exposure is considered to be not relevant.
No spraying
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 1 events per day
Frequency of use over a year; Frequent
For each use event, covers use amounts up to 500 g/event
Exposure duration = 4 h/event
Information and behavioral advice for consumers
Covers adult use.
Indoor use

6.2.10. Control of consumer exposure: CS2; Consumer uses; Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners); CARPET CLEANERS (spray, liquid) for consumer use; AISE-C11; Covers child use. (PC 35)

Product (article) characteristics
Covers concentrations up to 0.1 %
Physical form of product; Liquids
Exposure route; dermal; Yes
Inhalation exposure is considered to be not relevant.
Exposure route; oral; Yes
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 1 events per day
Frequency of use over a year; Frequent
Information and behavioral advice for consumers
Covers child use.

6.2.11. Control of consumer exposure: CS2; Consumer uses; Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners); WIPES (bathroom, kitchen, floor) for consumer use; AISE-C15; Covers adult use. (PC 35)

Product (article) characteristics
Covers concentrations up to 0.1 %
Physical form of product; Liquids
Exposure route; dermal; Yes
Exposure route; Inhalation; Yes
Oral exposure is considered to be not relevant.
No spraying
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 1 events per day
Frequency of use over a year; Frequent
Exposure duration = 4 h/event
For each use event, covers use amounts up to 20 g/event
Information and behavioral advice for consumers
Covers adult use.
Indoor use

6.2.12. Control of consumer exposure: CS2; Consumer uses; Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners); WIPES (bathroom, kitchen, floor) for consumer use; AISE-C15; Covers child use. (PC 35)

Product (article) characteristics
Covers concentrations up to 0.1 %
Physical form of product; Liquids
Inhalation exposure is considered to be not relevant.
Exposure route; dermal; Yes
Exposure route; oral; Yes
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 1 events per day
Frequency of use over a year; Frequent
Information and behavioral advice for consumers
Covers child use.

6.2.13. Control of consumer exposure: CS3; Consumer uses; Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners); SURFACE CLEANERS (liquid, powder, gel neat, spray neat) for consumer use; AISE-C7 (PC 35)

Product (article) characteristics
Covers concentrations up to 0.1 %
Physical form of product; Liquid for spraying (spraying can)
Exposure route; dermal; Yes
Exposure route; Inhalation; Yes
Oral exposure is considered to be not relevant.
Spraying; Yes
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 1 events per day
Exposure duration = 1 h/event
Frequency of use over a year; Frequent
Sprayed amount per time; <=; 1.6; g/sec

Application duration; <=; 0.23; min
Information and behavioral advice for consumers
Covers adult use.
Indoor use

6.2.14. Control of consumer exposure: CS3; Consumer uses; Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners); CARPET CLEANERS (spray, liquid) for consumer use; AISE-C11 (PC 35)

Product (article) characteristics
Covers concentrations up to 0.1 %
Physical form of product; Liquid for spraying (spraying can)
Exposure route; dermal; Yes
Exposure route; Inhalation; Yes
Oral exposure is considered to be not relevant.
Spraying; Yes
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 1 events per day
Frequency of use over a year; Frequent
For each use event, covers use amounts up to 8 g/event
Exposure duration = 0.25 h/event
Application duration; <=; 5; min
Information and behavioral advice for consumers
Covers adult use.
Indoor use

6.3. Exposure estimation and reference to its source

6.3.1. Environmental release and exposure: GES 6; Consumer end-use of washing and cleaning products (ERC 8d)

Release route	Release rate	Release estimation method
Water	0.33 kg/day	ERC
Air	0.33 kg/day	ERC
Soil	0.066 kg/day	ERC

Protection target	Exposure estimate	RCR
Fresh water	2.09E-3 mg/L (EUSES 2.1.2)	0.238
Sediment (freshwater)	0.242 mg/kg dw (EUSES 2.1.2)	0.238
Marine water	2.08E-4 mg/L (EUSES 2.1.2)	0.237
Sediment (marine water)	0.024 mg/kg dw (EUSES 2.1.2)	0.236
Sewage Treatment Plant	0.019 mg/L (EUSES 2.1.2)	0.019
Agricultural soil	0.046 mg/kg dw (EUSES 2.1.2)	0.231
Predator's prey (freshwater)	0.116 mg/kg ww (EUSES 2.1.2)	0.058
Predator's prey (marine water)	0.012 mg/kg ww (EUSES 2.1.2)	< 0.01
Top predator's prey (marine water)	3.76E-3 mg/kg ww (EUSES 2.1.2)	< 0.01
Predator's prey (terrestrial)	9.85E-3 mg/kg ww (EUSES 2.1.2)	< 0.01
Man via environment - Inhalation (systemic effects)	4.71E-6 mg/m³ (EUSES 2.1.2)	< 0.01
Man via environment - Oral	5.11E-4 mg/kg bw/day (EUSES 2.1.2)	< 0.01
Man via environment - combined routes		< 0.01

6.3.2. Consumer exposure: CS1; Consumer uses; Laundry and dish washing products; LAUNDRY REGULAR (powder, liquid) for consumer use; AISE-C1; LAUNDRY COMPACT (powder, liquid/gel, tablet) for consumer use; AISE-C2; FABRIC CONDITIONERS (liquid regular,

liquid concentrate) for consumer use; AISE-C3; LAUNDRY ADDITIVES (powder bleach, liquid bleach, tablet) for consumer use; AISE-C4; LAUNDRY AIDS (ironing aids-starch spray, ironing aids-other) for consumer use; AISE-C12; Covers adult use. (PC 35)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	2.3E-6 mg/m³ (ConsExpo)	< 0.01
Dermal, systemic, long term	0.028 mg/kg bw/day (ConsExpo)	0.215
Oral, systemic, long term	0 mg/kg bw/day (ConsExpo)	< 0.01
Combined, systemic, long term		0.215

6.3.3. Consumer exposure: CS1; Consumer use; Laundry and dish washing products; LAUNDRY REGULAR (powder, liquid) for consumer use; AISE-C1; LAUNDRY COMPACT (powder, liquid/gel, tablet) for consumer use; AISE-C2; FABRIC CONDITIONERS (liquid regular, liquid concentrate) for consumer use; AISE-C3; LAUNDRY ADDITIVES (powder bleach, liquid bleach, tablet) for consumer use; AISE-C4; LAUNDRY AIDS (ironing aids-starch spray, ironing aids-other) for consumer use; AISE-C12; Covers child use. (PC 35)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0 mg/m³ (ConsExpo)	< 0.01
Dermal, systemic, long term	0.014 mg/kg bw/day (ConsExpo)	0.108
Oral, systemic, long term	0 mg/kg bw/day (ConsExpo)	< 0.01
Combined, systemic, long term		0.108

6.3.4. Consumer exposure: CS1; Consumer uses; HAND DISHWASHING (liquid regular, liquid concentrate) for consumer use; AISE-C5 (PC 35)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	5.8E-10 mg/m³ (ConsExpo)	< 0.01
Dermal, systemic, long term	3E-4 mg/kg bw/day (ConsExpo)	< 0.01
Oral, systemic, long term	3.1E-6 mg/kg bw/day (ConsExpo)	< 0.01
Combined, systemic, long term		< 0.01

6.3.5. Consumer exposure: CS1; Consumer uses; MACHINE DISHWASHING (powder, liquid, tablet) for consumer use; AISE-C6 (PC 35)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	3.8E-10 mg/m³ (ConsExpo)	< 0.01
Dermal, systemic, long term	8.5E-5 mg/kg bw/day (ConsExpo)	< 0.01
Oral, systemic, long term	1.5E-6 mg/kg bw/day (ConsExpo)	< 0.01
Combined, systemic, long term		< 0.01

6.3.6. Consumer exposure: CS2; Consumer uses; Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners); SURFACE CLEANERS (liquid, powder, gel neat, spray neat) for consumer use; AISE-C7; Covers adult use. (PC 35)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	2.2E-6 mg/m³ (ConsExpo)	< 0.01
Dermal, systemic, long term	2.3E-3 mg/kg bw/day (ConsExpo)	0.018
Oral, systemic, long term	0 mg/kg bw/day (ConsExpo)	< 0.01
Combined, systemic, long term		0.018

6.3.7. Consumer exposure: CS2; Consumer uses; Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners); SURFACE CLEANERS (liquid, powder, gel neat, spray neat) for consumer use; AISE-C7; Covers child use. (PC 35)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0 mg/m³ (ConsExpo)	< 0.01
Dermal, systemic, long term	0.065 mg/kg bw/day (ConsExpo)	0.5

Oral, systemic, long term	0.016 mg/kg bw/day (ConsExpo)	0.123
Combined, systemic, long term		0.623

6.3.8. Consumer exposure: CS2; Consumer uses; Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners); TOILET CLEANERS (powder, liquid, gel, tablet) for consumer use; AISE-C8 (PC 35)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.019 mg/m³ (ConsExpo)	0.086
Dermal, systemic, long term	0.015 mg/kg bw/day (ConsExpo)	0.115
Oral, systemic, long term	0 mg/kg bw/day (ConsExpo)	< 0.01
Combined, systemic, long term		0.202

6.3.9. Consumer exposure: CS2; Consumer uses; Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners); CARPET CLEANERS (spray, liquid) for consumer use; AISE-C11; Covers adult use. (PC 35)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	5E-6 mg/m³ (ConsExpo)	< 0.01
Dermal, systemic, long term	6.3E-3 mg/kg bw/day (ConsExpo)	0.048
Oral, systemic, long term	0 mg/kg bw/day (ConsExpo)	< 0.01
Combined, systemic, long term		0.048

6.3.10. Consumer exposure: CS2; Consumer uses; Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners); CARPET CLEANERS (spray, liquid) for consumer use; AISE-C11; Covers child use. (PC 35)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0 mg/m³ (ConsExpo)	< 0.01
Dermal, systemic, long term	0.029 mg/kg bw/day (ConsExpo)	0.223
Oral, systemic, long term	3.3E-3 mg/kg bw/day (ConsExpo)	0.025
Combined, systemic, long term		0.248

6.3.11. Consumer exposure: CS2; Consumer uses; Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners); WIPES (bathroom, kitchen, floor) for consumer use; AISE-C15; Covers adult use. (PC 35)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	1.7E-4 mg/m³ (ConsExpo)	< 0.01
Dermal, systemic, long term	3.1E-4 mg/kg bw/day (ConsExpo)	< 0.01
Oral, systemic, long term	0 mg/kg bw/day (ConsExpo)	< 0.01
Combined, systemic, long term		< 0.01

6.3.12. Consumer exposure: CS2; Consumer uses; Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners); WIPES (bathroom, kitchen, floor) for consumer use; AISE-C15; Covers child use. (PC 35)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0 mg/m³ (ConsExpo)	< 0.01
Dermal, systemic, long term	1.1E-3 mg/kg bw/day (ConsExpo)	< 0.01
Oral, systemic, long term	1.2E-4 mg/kg bw/day (ConsExpo)	< 0.01
Combined, systemic, long term		< 0.01

6.3.13. Consumer exposure: CS3; Consumer uses; Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners); SURFACE CLEANERS (liquid, powder, gel neat, spray neat) for consumer use; AISE-C7 (PC 35)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0.023 mg/m³ (ConsExpo)	0.105
Dermal, systemic, long term	4.8E-3 mg/kg bw/day (ConsExpo)	0.037
Oral, systemic, long term	0 mg/kg bw/day (ConsExpo)	< 0.01
Combined, systemic, long term		0.141

6.3.14. Consumer exposure: CS3; Consumer uses; Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners); CARPET CLEANERS (spray, liquid) for consumer use; AISE-C11 (PC 35)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	4.6E-9 mg/m³ (ConsExpo)	< 0.01
Dermal, systemic, long term	2.4E-4 mg/kg bw/day (ConsExpo)	< 0.01
Oral, systemic, long term	0 mg/kg bw/day (ConsExpo)	< 0.01
Combined, systemic, long term		< 0.01

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

Guidance: The environmental exposure to all end-use products (professional and consumer) has been combined. Some products will be completely discharged down the drain (rinse-off cosmetics, laundry detergents) whereas others will not be discharged to the sewer (shoe polish, dry cleaning). By nature air fresheners will end up in the air. By using 100% release to water and 100% to air, all consumer end-use products can be covered in one scenario. The main use of products containing fragrance substances is ERC8a (wide dispersive indoor use). The IFRA guideline (2012) also identifies ERC8d (wide dispersive outdoor use) as being relevant for the consumer end-use of washing and cleaning products (GES6) and consumer end-use of biocides (GES 8). Release rates are more conservative for ERC8d. The release factors to water and air are the same as ERC8a but an additional release of 20% to soil is assumed in the ERC for outdoor use. Therefore the assessment on the basis of ERC8d covers also ERC8a
Scaling instructions: As the environmental release factor depends on site specific operational conditions and risk management measures, Downstream Users (DU) are advised to demonstrate that a safe use is given for the amounts used at their site. Scaling may be a suitable option in this case, (ECHA Guidance for downstream users and Guidance on the compilation of safety data sheets). Scaling is a comparison of linear input parameters and determinants between data presented in the Exposure Scenario (ES) and the data available from the Downstream User to determine the risk characterisation ratios (RCR) under the operational conditions of the DU (eg. quantity of substance used per year and site, emission fraction to water, number of emission days).

7. ES 7: Consumer use; Air care products

7.1. Title section

ES name: GES 7; Consumer end-use of air care products
Product category: Air care products (PC 3)

Environment	
1: GES 7; Consumer end-use of air care products	ERC 8a
Consumer	
2: CS1; Consumer uses; AIR FRESHENERS AEROSOL (aqueous, non aqueous, concentrated (mini-aerosol, Timed-release aerosols) for consumer use; AISE-C17; Covers adult use.	PC 3
3: CS1; Consumer uses; AIR FRESHENERS AEROSOL (aqueous, non aqueous, concentrated (mini-aerosol, Timed-release aerosols) for consumer use; AISE-C17; Covers child use.	PC 3
4: CS2; Consumer uses; AIR FRESHENERS NON AEROSOL (perfume in/on solid substarte (gel), candles, diffusers (heated) for consumer use; AISE-C18	PC 3

7.2. Conditions of use affecting exposure

7.2.1. Control of environmental exposure: GES 7; Consumer end-use of air care products (ERC 8a)

Amount used, frequency and duration of use (or from service life)
Daily local widespread use amount; <=; 0; tonnes/day

7.2.2. Control of consumer exposure: CS1; Consumer uses; AIR FRESHENERS AEROSOL (aqueous, non aqueous, concentrated (mini-aerosol, Timed-release aerosols) for consumer use; AISE-C17; Covers adult use. (PC 3)

Product (article) characteristics
Covers concentrations up to 0.25 %
Physical form of product; Liquid for spraying (spraying can)

Exposure route; Yes
Exposure route; Inhalation; Yes
Oral exposure is considered to be not relevant.
Spraying; Yes
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 1 events per day
Frequency of use over a year; Frequent
For each use event, covers use amounts up to 14.9 g/event
Exposure duration = 4 h/event
Application duration; <=; 0.33; min
Sprayed amount per time; <=; 0.75; g/sec
Information and behavioral advice for consumers
Covers adult use.
Indoor use

7.2.3. Control of consumer exposure: CS1; Consumer uses; AIR FRESHENERS AEROSOL (aqueous, non aqueous, concentrated (mini-aerosol, Timed-release aerosols) for consumer use; AISE-C17; Covers child use. (PC 3)

Product (article) characteristics
Covers concentrations up to 0.25 %
Physical form of product; Liquid for spraying (spraying can)
Exposure route; oral; Yes
Exposure route; dermal; Yes
Inhalation exposure is considered to be not relevant.
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 1 events per day
Frequency of use over a year; Frequent
Application duration; <=; 60; min
Information and behavioral advice for consumers
Covers child use.

7.2.4. Control of consumer exposure: CS2; Consumer uses; AIR FRESHENERS NON AEROSOL (perfume in/on solid substarte (gel), candles, diffusers (heated) for consumer use; AISE-C18 (PC 3)

Product (article) characteristics
Covers concentrations up to 5 %
Physical form of product; Liquids
Exposure route; dermal; No.
Exposure route; Inhalation; Yes
Oral exposure is considered to be not relevant.
No spraying
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 1 events per day
Frequency of use over a year; Frequent
For each use event, covers use amounts up to 0.63 g/event
Exposure duration = 8 h/event
Application duration; <=; 480; min
Sprayed amount per time; <=; 2.2E-5; g/sec
Information and behavioral advice for consumers
Covers adult use.
Indoor use

7.3. Exposure estimation and reference to its source

7.3.1. Environmental release and exposure: GES 7; Consumer end-use of air care products (ERC 8a)

Release route	Release rate	Release estimation method
Water	0 kg/day	ERC
Air	0 kg/day	ERC
Soil	0 kg/day	ERC

7.3.2. Consumer exposure: CS1; Consumer uses; AIR FRESHENERS AEROSOL (aqueous, non aqueous, concentrated (mini-aerosol, Timed-release aerosols) for consumer use; AISE-C17; Covers adult use. (PC 3)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	2.6E-4 mg/m³ (ConsExpo)	< 0.01
Dermal, systemic, long term	7.9E-4 mg/kg bw/day (ConsExpo)	< 0.01
Oral, systemic, long term	0 mg/kg bw/day (ConsExpo)	< 0.01
Combined, systemic, long term		< 0.01

7.3.3. Consumer exposure: CS1; Consumer uses; AIR FRESHENERS AEROSOL (aqueous, non aqueous, concentrated (mini-aerosol, Timed-release aerosols) for consumer use; AISE-C17; Covers child use. (PC 3)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0 mg/m³ (ConsExpo)	< 0.01
Dermal, systemic, long term	0.031 mg/kg bw/day (ConsExpo)	0.238
Oral, systemic, long term	1.4E-4 mg/kg bw/day (ConsExpo)	< 0.01
Combined, systemic, long term		0.24

7.3.4. Consumer exposure: CS2; Consumer uses; AIR FRESHENERS NON AEROSOL (perfume in/on solid substarte (gel), candles, diffusers (heated) for consumer use; AISE-C18 (PC 3)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	7.3E-3 mg/m³ (ConsExpo)	0.033
Dermal, systemic, long term	0 mg/kg bw/day (ConsExpo)	< 0.01
Oral, systemic, long term	0 mg/kg bw/day (ConsExpo)	< 0.01
Combined, systemic, long term		0.033

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

Guidance: The total tonnage of all end-uses is covered under GES6; (; except; Annual site tonnage; Industrial end-use of washing and cleaning products; GES 3; ERC 4;); Since the products used by professionals will not differ much from those used by consumers and since the conditions of environmental release are very similar for professionals and consumers, potential environmental exposure to the substance due to professional and private use was combined under GES6.
Scaling instructions: As the environmental release factor depends on site specific operational conditions and risk management measures, Downstream Users (DU) are advised to demonstrate that a safe use is given for the amounts used at their site. Scaling may be a suitable option in this case, (ECHA Guidance for downstream users and Guidance on the compilation of safety data sheets). Scaling is a comparison of linear input parameters and determinants between data presented in the Exposure Scenario (ES) and the data available from the Downstream User to determine the risk characterisation ratios (RCR) under the operational conditions of the DU (eg. quantity of substance used per year and site, emission fraction to water, number of emission days).

8. ES 8: Consumer use; Biocidal Products

8.1. Title section

ES name: GES 8; Consumer end-use of biocides
Product category: Biocidal Products (PC 8)

Environment	
1: GES 8; Consumer end-use of biocides	ERC 8d
Consumer	
2: CS1; Consumer uses; INSECTICIDES (liquid electric, spray neat); AISE-C19; Covers adult use.	PC 8
3: CS1; Consumer uses; INSECTICIDES (liquid electric, spray neat); AISE-C19; Covers child use.	PC 8
4: CS1; Consumer uses; INSECTICIDES (liquid electric, spray neat); AISE-C19	PC 8
5: CS2; Consumer uses; REPELLENTS for consumer use; AISE-C19; Covers adult use.	PC 8
6: CS2; Consumer uses; REPELLENTS for consumer use; AISE-C19; Covers child use.	PC 8

8.2. Conditions of use affecting exposure

8.2.1. Control of environmental exposure: GES 8; Consumer end-use of biocides (ERC 8d)

Amount used, frequency and duration of use (or from service life)
Daily local widespread use amount; <=; 0; tonnes/day
Other conditions affecting environmental exposure
Municipal sewage treatment plant is assumed.

8.2.2. Control of consumer exposure: CS1; Consumer uses; INSECTICIDES (liquid electric, spray neat); AISE-C19; Covers adult use. (PC 8)

Product (article) characteristics
Covers concentrations up to 0.04 %
Physical form of product; Liquid for spraying (spraying can)
Exposure route; dermal; Yes
Exposure route; Inhalation; Yes
Oral exposure is considered to be not relevant.
Spraying; Yes
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 1 events per day
Frequency of use over a year; Frequent
For each use event, covers use amounts up to 14.9 g/event
Exposure duration = 4 h/event
Application duration; <=; 0.33; min
Sprayed amount per time; <=; 0.75; g/sec
Information and behavioral advice for consumers
Covers adult use.
Indoor use

8.2.3. Control of consumer exposure: CS1; Consumer uses; INSECTICIDES (liquid electric, spray neat); AISE-C19; Covers child use. (PC 8)

Product (article) characteristics
Covers concentrations up to 0.04 %
Physical form of product; Liquid for spraying (spraying can)
Exposure route; dermal; Yes
Exposure route; oral; Yes
Inhalation exposure is considered to be not relevant.
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 1 events per day
Frequency of use over a year; Frequent
Application duration; <=; 60; min
Information and behavioral advice for consumers

Covers child use.

8.2.4. Control of consumer exposure: CS1; Consumer uses; INSECTICIDES (liquid electric, spray neat); AISE-C19 (PC 8)

Product (article) characteristics
Covers concentrations up to 0.04 %
Physical form of product; Liquids
Exposure route; dermal; No.
Exposure route; Inhalation; Yes
Oral exposure is considered to be not relevant.
No spraying
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 1 events per day
Frequency of use over a year; Frequent
For each use event, covers use amounts up to 0.63 g/event
Exposure duration = 8 h/event
Application duration; <=; 480; min
Sprayed amount per time; <=; 2.2E-5; g/sec
Information and behavioral advice for consumers
Covers adult use.
Indoor use

8.2.5. Control of consumer exposure: CS2; Consumer uses; REPELLENTS for consumer use; AISE-C19; Covers adult use. (PC 8)

Product (article) characteristics
Covers concentrations up to 0.04 %
Physical form of product; Liquids
Exposure route; dermal; Yes
Exposure route; oral; Yes
Inhalation exposure is considered to be not relevant.
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 1 events per day
Frequency of use over a year; Frequent
Assumes product amount in contact to skin; <=; 6; g/event
Exposure duration <= 180 min; oral
Information and behavioral advice for consumers
Covers adult use.
Other conditions affecting consumers exposure
Body parts potentially exposed; Whole body
Covers skin contact area up to 1.12E4 cm²

8.2.6. Control of consumer exposure: CS2; Consumer uses; REPELLENTS for consumer use; AISE-C19; Covers child use. (PC 8)

Product (article) characteristics
Covers concentrations up to 0.04 %
Physical form of product; Liquids
Exposure route; dermal; Yes
Exposure route; oral; Yes
Inhalation exposure is considered to be not relevant.
Amount used (or contained in articles), frequency and duration of use/exposure

Covers use up to 1 events per day
Frequency of use over a year; Frequent
Assumes product amount in contact to skin; <=; 1.5; g/event
Exposure duration <= 180 min; oral
Information and behavioral advice for consumers
Covers child use.
Other conditions affecting consumers exposure
Body parts potentially exposed; Whole body
Covers skin contact area up to 2.8E3 cm²

8.3. Exposure estimation and reference to its source

8.3.1. Environmental release and exposure: GES 8; Consumer end-use of biocides (ERC 8d)

Release route	Release rate	Release estimation method
Water	0 kg/day	ERC
Air	0 kg/day	ERC
Soil	0 kg/day	ERC

8.3.2. Consumer exposure: CS1; Consumer uses; INSECTICIDES (liquid electric, spray neat); AISE-C19; Covers adult use. (PC 8)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	4.2E-5 mg/m³ (ConsExpo)	< 0.01
Dermal, systemic, long term	1.3E-4 mg/kg bw/day (ConsExpo)	< 0.01
Oral, systemic, long term	0 mg/kg bw/day (ConsExpo)	< 0.01
Combined, systemic, long term		< 0.01

8.3.3. Consumer exposure: CS1; Consumer uses; INSECTICIDES (liquid electric, spray neat); AISE-C19; Covers child use. (PC 8)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0 mg/m³ (ConsExpo)	< 0.01
Dermal, systemic, long term	5.2E-3 mg/kg bw/day (ConsExpo)	0.04
Oral, systemic, long term	1.7E-5 mg/kg bw/day (ConsExpo)	< 0.01
Combined, systemic, long term		0.04

8.3.4. Consumer exposure: CS1; Consumer uses; INSECTICIDES (liquid electric, spray neat); AISE-C19 (PC 8)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	5.9E-5 mg/m³ (ConsExpo)	< 0.01
Dermal, systemic, long term	0 mg/kg bw/day (ConsExpo)	< 0.01
Oral, systemic, long term	0 mg/kg bw/day (ConsExpo)	< 0.01
Combined, systemic, long term		< 0.01

8.3.5. Consumer exposure: CS2; Consumer uses; REPELLENTS for consumer use; AISE-C19; Covers adult use. (PC 8)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	0 mg/m³ (ConsExpo)	< 0.01
Dermal, systemic, long term	5.2E-3 mg/kg bw/day (ConsExpo)	0.04
Oral, systemic, long term	2.1E-4 mg/kg bw/day (ConsExpo)	< 0.01
Combined, systemic, long term		0.042

8.3.6. Consumer exposure: CS2; Consumer uses; REPELLENTS for consumer use; AISE-C19; Covers child use. (PC 8)

Route of exposure and type of effects	Exposure estimate	RCR

Inhalation, systemic, long term	0 mg/m³ (ConsExpo)	< 0.01
Dermal, systemic, long term	9.2E-3 mg/kg bw/day (ConsExpo)	0.071
Oral, systemic, long term	1E-3 mg/kg bw/day (ConsExpo)	< 0.01
Combined, systemic, long term		0.078

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

Guidance: The total tonnage of all end-uses is covered under GES6; (; except; Industrial end-use of washing and cleaning products; GES 3; ERC 4;); Since the products used by professionals will not differ much from those used by consumers and since the conditions of environmental release are very similar for professionals and consumers, potential environmental exposure to the substance due to professional and private use was combined under GES6.
Scaling instructions: As the environmental release factor depends on site specific operational conditions and risk management measures, Downstream Users (DU) are advised to demonstrate that a safe use is given for the amounts used at their site. Scaling may be a suitable option in this case, (ECHA Guidance for downstream users and Guidance on the compilation of safety data sheets). Scaling is a comparison of linear input parameters and determinants between data presented in the Exposure Scenario (ES) and the data available from the Downstream User to determine the risk characterisation ratios (RCR) under the operational conditions of the DU (eg. quantity of substance used per year and site, emission fraction to water, number of emission days).

9. ES 9: Consumer use; Polishes and Wax Blends

9.1. Title section

ES name: GES 9; Consumer end-use of polishes and wax blends
Product category: Polishes and Wax Blends (PC 31)

Environment	
1: GES 9; Consumer end-use of polishes and wax blends	ERC 8a
Consumer	
2: CS1; Consumer uses; Polishes and wax blends; FURNITURE FLOOR and LEATHER CARE (spray, liquid) for consumer use; AISE-C20	PC 31
3: CS2; Consumer uses; Polishes and wax blends; FURNITURE FLOOR and LEATHER CARE (spray, liquid) for consumer use; AISE-C20	PC 31

9.2. Conditions of use affecting exposure

9.2.1. Control of environmental exposure: GES 9; Consumer end-use of polishes and wax blends (ERC 8a)

Amount used, frequency and duration of use (or from service life)
Daily local widespread use amount; <=; 0; tonnes/day
Other conditions affecting environmental exposure
Municipal sewage treatment plant is assumed.

9.2.2. Control of consumer exposure: CS1; Consumer uses; Polishes and wax blends; FURNITURE FLOOR and LEATHER CARE (spray, liquid) for consumer use; AISE-C20 (PC 31)

Product (article) characteristics
Covers concentrations up to 0.1 %
Physical form of product; Liquids
Exposure route; dermal; Yes
Exposure route; Inhalation; Yes
Oral exposure is considered to be not relevant.
No spraying
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 1 events per day
Frequency of use over a year; Frequent
Exposure duration = 4 h/event

For each use event, covers use amounts up to 550 g/event
Application duration; <=; 90; min
Information and behavioral advice for consumers
Indoor use
Covers adult use.
Other conditions affecting consumers exposure
Assumes that potential dermal contact is limited to hands.
Inhalation; transfer factor; =; 1
dermal; transfer factor; =; 1

9.2.3. Control of consumer exposure: CS2; Consumer uses; Polishes and wax blends; FURNITURE FLOOR and LEATHER CARE (spray, liquid) for consumer use; AISE-C20 (PC 31)

Product (article) characteristics
Covers concentrations up to 0.1 %
Physical form of product; Liquid for spraying (spraying can)
Exposure route; dermal; Yes
Exposure route; Inhalation; Yes
Oral exposure is considered to be not relevant.
Spraying; Yes
Amount used (or contained in articles), frequency and duration of use/exposure
Covers use up to 1 events per day
Frequency of use over a year; Frequent
Exposure duration = 4 h/event
Application duration; <=; 2; min
Sprayed amount per time; <=; 1.8; g/sec
Information and behavioral advice for consumers
Covers adult use.
Indoor use

9.3. Exposure estimation and reference to its source

9.3.1. Environmental release and exposure: GES 9; Consumer end-use of polishes and wax blends (ERC 8a)

Release route	Release rate	Release estimation method
Water	0 kg/day	ERC
Air	0 kg/day	ERC
Soil	0 kg/day	ERC

9.3.2. Consumer exposure: CS1; Consumer uses; Polishes and wax blends; FURNITURE FLOOR and LEATHER CARE (spray, liquid) for consumer use; AISE-C20 (PC 31)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	2.1E-5 mg/m³ (ConsExpo)	< 0.01
Dermal, systemic, long term	1.2E-3 mg/kg bw/day (ConsExpo)	< 0.01
Oral, systemic, long term	0 mg/kg bw/day (ConsExpo)	< 0.01
Combined, systemic, long term		< 0.01

9.3.3. Consumer exposure: CS2; Consumer uses; Polishes and wax blends; FURNITURE FLOOR and LEATHER CARE (spray, liquid) for consumer use; AISE-C20 (PC 31)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long term	1.7E-3 mg/m³ (ConsExpo)	< 0.01

Dermal, systemic, long term	2.9E-5 mg/kg bw/day (ConsExpo)	< 0.01
Oral, systemic, long term	0 mg/kg bw/day (ConsExpo)	< 0.01
Combined, systemic, long term		< 0.01

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

Guidance: The total tonnage of all end-uses is covered under GES6; (; except; Annual site tonnage; Industrial end-use of washing and cleaning products; GES 3; ERC 4;); Since the products used by professionals will not differ much from those used by consumers and since the conditions of environmental release are very similar for professionals and consumers, potential environmental exposure to the substance due to professional and private use was combined under GES6.
Scaling instructions: As the environmental release factor depends on site specific operational conditions and risk management measures, Downstream Users (DU) are advised to demonstrate that a safe use is given for the amounts used at their site. Scaling may be a suitable option in this case, (ECHA Guidance for downstream users and Guidance on the compilation of safety data sheets). Scaling is a comparison of linear input parameters and determinants between data presented in the Exposure Scenario (ES) and the data available from the Downstream User to determine the risk characterisation ratios (RCR) under the operational conditions of the DU (eg. quantity of substance used per year and site, emission fraction to water, number of emission days).

10. ES 10: Consumer use; Various products; Consumer (and Professional) end-use of cosmetics

10.1. Title section

ES name: GES 10; Consumer (and Professional) end-use of cosmetics; Only includes environmental exposure, assessment of human exposure is exempt from REACH as it is already covered by the European Cosmetic Regulation No 1223/2009
Product category: Perfumes, Fragrances (PC 28), Cosmetics, personal care products (PC 39)

Environment	
1: GES 10; Consumer (and Professional) end-use of cosmetics	ERC 8a
Consumer	
2: Perfumes, fragrances	PC 28
3: Cosmetics, personal care products	PC 39

10.2. Conditions of use affecting exposure

10.2.1. Control of environmental exposure: GES 10; Consumer (and Professional) end-use of cosmetics (ERC 8a)

Amount used, frequency and duration of use (or from service life)
Daily local widespread use amount; <=; 0; tonnes/day
Other conditions affecting environmental exposure
Municipal sewage treatment plant is assumed.

10.2.2. Control of consumer exposure: Perfumes, fragrances (PC 28)

Product (article) characteristics
Covers concentrations up to 100 %
Physical form of product; Liquids

10.2.3. Control of consumer exposure: Cosmetics, personal care products (PC 39)

Product (article) characteristics
Covers concentrations up to 100 %
Physical form of product; Liquids

10.3. Exposure estimation and reference to its source

10.3.1. Environmental release and exposure: GES 10; Consumer (and Professional) end-use of cosmetics (ERC 8a)

Release route	Release rate	Release estimation method
Water	0 kg/day	ERC
Air	0 kg/day	ERC
Soil	0 kg/day	ERC

10.3.2. Consumer exposure: Perfumes, fragrances (PC 28)

10.3.3. Consumer exposure: Cosmetics, personal care products (PC 39)

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

Guidance: The total tonnage of all end-uses is covered under GES6; (; except; Annual site tonnage; Industrial end-use of washing and cleaning products; GES 3; ERC 4;); Since the products used by professionals will not differ much from those used by consumers and since the conditions of environmental release are very similar for professionals and consumers, potential environmental exposure to the substance due to professional and private use was combined under GES6.
Scaling instructions: As the environmental release factor depends on site specific operational conditions and risk management measures, Downstream Users (DU) are advised to demonstrate that a safe use is given for the amounts used at their site. Scaling may be a suitable option in this case, (ECHA Guidance for downstream users and Guidance on the compilation of safety data sheets). Scaling is a comparison of linear input parameters and determinants between data presented in the Exposure Scenario (ES) and the data available from the Downstream User to determine the risk characterisation ratios (RCR) under the operational conditions of the DU (eg. quantity of substance used per year and site, emission fraction to water, number of emission days).