Sicherheitsdatenblatt
gemäß 1907/2006/EG, Artikel 31

Druckdatum: 18.10.2016 *Versionsnummer 1* *überarbeitet am: 18.10.2016*

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ABSCHNITT 1: Bezeichnung des Stoffs bzw. des Gemischs und des Unternehmens

· **Produktidentifikator**

· **Handelsname: Eukalyptusöl spanisch 80/85%**

· **CAS-Nummer:**
8000-48-4
· **EG-Nummer:**
283-406-2
· **Registrierungsnummer** 01-2119978250-37-0002
· **EINECS CAS Nummer** 84625-32-1
· **1.2 Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird**
Derzeit liegen uns noch keine Informationen zu den identifizierten Verwendungen vor.
· **Verwendung des Stoffes / des Gemisches** Ätherisches Öl

· **1.3 Einzelheiten zum Lieferanten, der das Sicherheitsdatenblatt bereitstellt**
· Hersteller/Lieferant:
Südapharm GmbH
Bruck 13
78355 Hohenfels
Tel. 07557-92010

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ABSCHNITT 2: Mögliche Gefahren

· **2.1 Einstufung des Stoffs oder Gemischs**
· **Einstufung gemäß Verordnung (EG) Nr. 1272/2008**

Flam. Liq. 3	H226 Flüssigkeit und Dampf entzündbar.
Skin Irrit. 2	H315 Verursacht Hautreizungen.
Skin Sens. 1	H317 Kann allergische Hautreaktionen verursachen.
Asp. Tox. 1	H304 Kann bei Verschlucken und Eindringen in die Atemwege tödlich sein.
Aquatic Chronic 2	H411 Giftig für Wasserorganismen, mit langfristiger Wirkung.

· **2.2 Kennzeichnungselemente**
· **Kennzeichnung gemäß Verordnung (EG) Nr. 1272/2008**
Der Stoff ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.
· **Gefahrenpiktogramme**

GHS02 GHS07 GHS08 GHS09

· **Signalwort** Gefahr

· **Gefahrbestimmende Komponenten zur Etikettierung:**
Eukalyptusöl
· **Gefahrenhinweise**
H226 Flüssigkeit und Dampf entzündbar.
H315 Verursacht Hautreizungen.
H317 Kann allergische Hautreaktionen verursachen.
H304 Kann bei Verschlucken und Eindringen in die Atemwege tödlich sein.
H411 Giftig für Wasserorganismen, mit langfristiger Wirkung.
· **Sicherheitshinweise**

P210	Von Hitze, heißen Oberflächen, Funken, offenen Flammen und anderen Zündquellen fernhalten. Nicht rauchen.
P241	Explosionsgeschützte elektrische Geräte/Lüftungsanlagen/Beleuchtungsanlagen verwenden.

(Fortsetzung auf Seite 2)

Sicherheitsdatenblatt
gemäß 1907/2006/EG, Artikel 31

Druckdatum: 18.10.2016 Versionsnummer 1 überarbeitet am: 18.10.2016

Handelsname: Eukalyptusöl spanisch 80/85%

(Fortsetzung von Seite 1)

P301+P310 BEI VERSCHLUCKEN: Sofort GIFTINFORMATIONSZENTRUM/Arzt anrufen.
P303+P361+P353 BEI BERÜHRUNG MIT DER HAUT (oder dem Haar): Alle kontaminierten Kleidungsstücke sofort ausziehen. Haut mit Wasser abwaschen/duschen.
P405 Unter Verschluss aufbewahren.
P501 Entsorgung des Inhalts / des Behälters gemäß den örtlichen / regionalen / nationalen/ internationalen Vorschriften.

· **2.3 Sonstige Gefahren**
· **Ergebnisse der PBT- und vPvB-Beurteilung**
· **PBT:** Nicht anwendbar.
· **vPvB:** Nicht anwendbar.

ABSCHNITT 3: Zusammensetzung/Angaben zu Bestandteilen

· **3.1 Stoffe**
· **CAS-Nr. Bezeichnung**
8000-48-4 Eukalyptusöl
· **Identifikationsnummer(n)**
· **EG-Nummer:** 283-406-2

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ABSCHNITT 4: Erste-Hilfe-Maßnahmen

· **4.1 Beschreibung der Erste-Hilfe-Maßnahmen**
· **Allgemeine Hinweise:** Mit Produkt verunreinigte Kleidungsstücke unverzüglich entfernen.
· **Nach Einatmen:**
Reichlich Frischluftzufuhr und sicherheitshalber Arzt aufsuchen.
Bei Bewußtlosigkeit Lagerung und Transport in stabiler Seitenlage.
· **Nach Hautkontakt:** Sofort mit Wasser und Seife abwaschen und gut nachspülen.
· **Nach Augenkontakt:** Augen bei geöffnetem Lidspalt mehrere Minuten mit fließendem Wasser spülen.
· **Nach Verschlucken:** Sofort ärztlichen Rat einholen.
· **4.2 Wichtigste akute und verzögert auftretende Symptome und Wirkungen**
Keine weiteren relevanten Informationen verfügbar.
· **4.3 Hinweise auf ärztliche Soforthilfe oder Spezialbehandlung**
Keine weiteren relevanten Informationen verfügbar.

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ABSCHNITT 5: Maßnahmen zur Brandbekämpfung

· **5.1 Löschmittel**
· **Geeignete Löschmittel:**
CO2, Löschpulver oder Wassersprühstrahl. Größeren Brand mit Wassersprühstrahl oder alkoholbeständigem Schaum bekämpfen.
· **Aus Sicherheitsgründen ungeeignete Löschmittel:** Wasser im Vollstrahl
· **5.2 Besondere vom Stoff oder Gemisch ausgehende Gefahren**
Keine weiteren relevanten Informationen verfügbar.
· **5.3 Hinweise für die Brandbekämpfung**
· **Besondere Schutzausrüstung:** Keine besonderen Maßnahmen erforderlich.

*
ABSCHNITT 6: Maßnahmen bei unbeabsichtigter Freisetzung

· **6.1 Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren**
Schutzausrüstung tragen. Ungeschützte Personen fernhalten.
· **6.2 Umweltschutzmaßnahmen:**
Nicht in die Kanalisation oder in Gewässer gelangen lassen.
Bei Eindringen in Gewässer oder Kanalisation zuständige Behörden benachrichtigen.
Nicht in die Kanalisation/Oberflächenwasser/Grundwasser gelangen lassen.

(Fortsetzung auf Seite 3)

Sicherheitsdatenblatt
gemäß 1907/2006/EG, Artikel 31

Druckdatum: 18.10.2016 Versionsnummer 1 überarbeitet am: 18.10.2016

Handelsname: Eukalyptusöl spanisch 80/85%

(Fortsetzung von Seite 2)

· **6.3 Methoden und Material für Rückhaltung und Reinigung:**
Mit flüssigkeitsbindendem Material (Sand, Kieselgur, Säurebinder, Universalbinder, Sägemehl) aufnehmen.
Kontaminiertes Material als Abfall nach Abschnitt 13 entsorgen.
Für ausreichende Lüftung sorgen.
· **6.4 Verweis auf andere Abschnitte**
Informationen zur sicheren Handhabung siehe Abschnitt 7.
Informationen zur persönlichen Schutzausrüstung siehe Abschnitt 8.
Informationen zur Entsorgung siehe Abschnitt 13.

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ABSCHNITT 7: Handhabung und Lagerung

· **7.1 Schutzmaßnahmen zur sicheren Handhabung**
Für gute Belüftung/Absaugung am Arbeitsplatz sorgen.
Aerosolbildung vermeiden.
· **Hinweise zum Brand- und Explosionsschutz:**
Zündquellen fernhalten - nicht rauchen.
Maßnahmen gegen elektrostatische Aufladung treffen.

· **7.2 Bedingungen zur sicheren Lagerung unter Berücksichtigung von Unverträglichkeiten**
· **Lagerung:**
· **Anforderung an Lagerräume und Behälter:** Unter Verschluss aufbewahren.
· **Zusammenlagerungshinweise:** Nicht erforderlich.
· **Weitere Angaben zu den Lagerbedingungen:** Behälter dicht geschlossen halten.
· **Lagerklasse:**
· **Klassifizierung nach Betriebssicherheitsverordnung (BetrSichV):** Entzündbare Flüssigkeiten
· **7.3 Spezifische Endanwendungen** Keine weiteren relevanten Informationen verfügbar.

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ABSCHNITT 8: Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen

· **Zusätzliche Hinweise zur Gestaltung technischer Anlagen:** Keine weiteren Angaben, siehe Abschnitt 7.

· **8.1 Zu überwachende Parameter**
· **Bestandteile mit arbeitsplatzbezogenen, zu überwachenden Grenzwerten:** Entfällt.
· **Zusätzliche Hinweise:** Als Grundlage dienten die bei der Erstellung gültigen Listen.

· **8.2 Begrenzung und Überwachung der Exposition**
· **Persönliche Schutzausrüstung:**
· **Allgemeine Schutz- und Hygienemaßnahmen:**
Von Nahrungsmitteln, Getränken und Futtermitteln fernhalten.
Beschmutzte, getränkte Kleidung sofort ausziehen.
Vor den Pausen und bei Arbeitsende Hände waschen.
Berührung mit der Haut vermeiden.
Berührung mit den Augen und der Haut vermeiden.
· **Atemschutz:**
Bei kurzzeitiger oder geringer Belastung Atemfiltergerät; bei intensiver bzw. längerer Exposition umluftunabhängiges Atemschutzgerät verwenden.
· **Handschutz:**

Schutzhandschuhe

Das Handschuhmaterial muss undurchlässig und beständig gegen das Produkt / den Stoff / die Zubereitung sein.
Aufgrund fehlender Tests kann keine Empfehlung zum Handschuhmaterial für das Produkt / die Zubereitung / das Chemikaliengemisch abgegeben werden.
Auswahl des Handschuhmaterials unter Beachtung der Durchbruchzeiten, Permeationsraten und der Degradation.

(Fortsetzung auf Seite 4)

Sicherheitsdatenblatt
gemäß 1907/2006/EG, Artikel 31

Druckdatum: 18.10.2016 Versionsnummer 1 überarbeitet am: 18.10.2016

Handelsname: Eukalyptusöl spanisch 80/85%

(Fortsetzung von Seite 3)

· **Handschuhmaterial**
Die Auswahl eines geeigneten Handschuhs ist nicht nur vom Material, sondern auch von weiteren Qualitätsmerkmalen abhängig und von Hersteller zu Hersteller unterschiedlich.
· **Durchdringungszeit des Handschuhmaterials**
Die genaue Durchbruchzeit ist beim Schutzhandschuhhersteller zu erfahren und einzuhalten.
· **Augenschutz:**

Dichtschließende Schutzbrille

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ABSCHNITT 9: Physikalische und chemische Eigenschaften

· **9.1 Angaben zu den grundlegenden physikalischen und chemischen Eigenschaften**	
· **Allgemeine Angaben**	
· **Aussehen:**	
Form:	Klar, flüssig
Farbe:	Farblos bis gelb
· **Geruch:**	Aromatisch
· **Geruchsschwelle:**	Nicht bestimmt.
· **pH-Wert:**	Nicht bestimmt.
· **Zustandsänderung**	
Schmelzpunkt/Schmelzbereich:	Nicht bestimmt.
Siedepunkt/Siedebereich:	153-184 °C
· **Flammpunkt:**	45 °C
· **Entzündlichkeit (fest, gasförmig):**	Nicht anwendbar.
· **Zersetzungstemperatur:**	Nicht bestimmt.
· **Selbstentzündlichkeit:**	Nicht bestimmt.
· **Explosionsgefahr:**	Das Produkt ist nicht explosionsgefährlich, jedoch ist die Bildung explosionsgefährlicher Dampf-/Luftgemische möglich.
· **Explosionsgrenzen:**	
Untere:	Nicht bestimmt.
Obere:	Nicht bestimmt.
· **Mittlere Dichte bei 20 °C:**	0,915 g/cm³
· **Relative Dichte**	Nicht bestimmt.
· **Dampfdichte**	Nicht bestimmt.
· **Verdampfungsgeschwindigkeit**	Nicht bestimmt.
· **Löslichkeit in / Mischbarkeit mit**	
Wasser:	Nicht bzw. wenig mischbar.
· **Verteilungskoeffizient (n-Octanol/Wasser):**	Nicht bestimmt.
· **Viskosität:**	
Dynamisch:	Nicht bestimmt.
Kinematisch bei 40 °C:	1,8 mm²/s
· **9.2 Sonstige Angaben**	Keine weiteren relevanten Informationen verfügbar.

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ABSCHNITT 10: Stabilität und Reaktivität

· **10.1 Reaktivität** Keine weiteren relevanten Informationen verfügbar.

(Fortsetzung auf Seite 5)

Sicherheitsdatenblatt
gemäß 1907/2006/EG, Artikel 31

Druckdatum: 18.10.2016 Versionsnummer 1 überarbeitet am: 18.10.2016

Handelsname: Eukalyptusöl spanisch 80/85%

(Fortsetzung von Seite 4)

· **10.2 Chemische Stabilität**
· **Thermische Zersetzung / zu vermeidende Bedingungen:**
Keine Zersetzung bei bestimmungsgemäßer Verwendung.
· **10.3 Möglichkeit gefährlicher Reaktionen** Keine gefährlichen Reaktionen bekannt.
· **10.4 Zu vermeidende Bedingungen** Keine weiteren relevanten Informationen verfügbar.
· **10.5 Unverträgliche Materialien:** Keine weiteren relevanten Informationen verfügbar.
· **10.6 Gefährliche Zersetzungsprodukte:** Keine gefährlichen Zersetzungsprodukte bekannt.

*
ABSCHNITT 11: Toxikologische Angaben

· **11.1 Angaben zu toxikologischen Wirkungen**
· **Akute Toxizität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

· **Einstufungsrelevante LD/LC50-Werte:**		
CAS: 8000-48-4 Eukalyptusöl		
Dermal	LD50	>5000 mg/kg (rabbit)

· **Primäre Reizwirkung:**
· **Ätz-/Reizwirkung auf die Haut**
Verursacht Hautreizungen.
· **Schwere Augenschädigung/-reizung**
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
· **Sensibilisierung der Atemwege/Haut**
Kann allergische Hautreaktionen verursachen.
· **CMR-Wirkungen (krebserzeugende, erbgutverändernde und fortpflanzungsgefährdende Wirkung)**
· **Keimzell-Mutagenität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
· **Karzinogenität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
· **Reproduktionstoxizität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
· **Spezifische Zielorgan-Toxizität bei einmaliger Exposition**
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
· **Spezifische Zielorgan-Toxizität bei wiederholter Exposition**
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
· **Aspirationsgefahr**
Kann bei Verschlucken und Eindringen in die Atemwege tödlich sein.

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ABSCHNITT 12: Umweltbezogene Angaben

· **12.1 Toxizität**

· **Aquatische Toxizität:**	
CAS: 8000-48-4 Eukalyptusöl	
EC50	1,64 mg/kg (algae) 1,02 mg/kg (daphnia)

· **12.2 Persistenz und Abbaubarkeit** Keine weiteren relevanten Informationen verfügbar.
· **12.3 Bioakkumulationspotenzial** Keine weiteren relevanten Informationen verfügbar.
· **12.4 Mobilität im Boden** Keine weiteren relevanten Informationen verfügbar.
· **Ökotoxische Wirkungen:**
· **Bemerkung:** Giftig für Fische.
· **Weitere ökologische Hinweise:**
· **Allgemeine Hinweise:**
Wassergefährdungsklasse 2 (Selbsteinstufung): wassergefährdend
Nicht in das Grundwasser, in Gewässer oder in die Kanalisation gelangen lassen.
Trinkwassergefährdung bereits beim Auslaufen geringer Mengen in den Untergrund.
In Gewässern auch giftig für Fische und Plankton.
giftig für Wasserorganismen
· **12.5 Ergebnisse der PBT- und vPvB-Beurteilung**
· **PBT:** Nicht anwendbar.
· **vPvB:** Nicht anwendbar.

(Fortsetzung auf Seite 6)

Sicherheitsdatenblatt
gemäß 1907/2006/EG, Artikel 31

Druckdatum: 18.10.2016 Versionsnummer 1 überarbeitet am: 18.10.2016

Handelsname: Eukalyptusöl spanisch 80/85%

(Fortsetzung von Seite 5)

· **12.6 Andere schädliche Wirkungen** Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 13: Hinweise zur Entsorgung

· **13.1 Verfahren der Abfallbehandlung**
· **Empfehlung:** Darf nicht zusammen mit Hausmüll entsorgt werden. Nicht in die Kanalisation gelangen lassen.

· **Ungereinigte Verpackungen:**
· **Empfehlung:** Entsorgung gemäß den behördlichen Vorschriften.

*

ABSCHNITT 14: Angaben zum Transport

· **14.1 UN-Nummer**	
· **ADR, IMDG, IATA**	UN1169
· **14.2 Ordnungsgemäße UN-Versandbezeichnung**	
· **ADR**	1169 EXTRAKTE, AROMATISCH, FLÜSSIG, UMWELTGEFÄHRDEND
· **IMDG**	EXTRACTS, AROMATIC, LIQUID, MARINE POLLUTANT
· **IATA**	EXTRACTS, AROMATIC, LIQUID
· **14.3 Transportgefahrenklassen**	
· **ADR, IMDG**	

· **Klasse**	3 Entzündbare flüssige Stoffe
· **Gefahrzettel**	3
· **IATA**	

· **Class**	3 Entzündbare flüssige Stoffe
· **Label**	3
· **14.4 Verpackungsgruppe**	
· **ADR, IMDG, IATA**	III
· **14.5 Umweltgefahren:**	
· **Marine pollutant:**	Nein Symbol (Fisch und Baum)
· **Besondere Kennzeichnung (ADR):**	Symbol (Fisch und Baum)
· **14.6 Besondere Vorsichtsmaßnahmen für den Verwender**	Achtung: Entzündbare flüssige Stoffe
· **Kemler-Zahl:**	30
· **EMS-Nummer:**	F-E,S-D
· **14.7 Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens und gemäß IBC-Code**	Nicht anwendbar.

(Fortsetzung auf Seite 7)

Sicherheitsdatenblatt
gemäß 1907/2006/EG, Artikel 31

Druckdatum: 18.10.2016 Versionsnummer 1 überarbeitet am: 18.10.2016

Handelsname: Eukalyptusöl spanisch 80/85%

(Fortsetzung von Seite 6)

· **Transport/weitere Angaben:**

· **ADR**	
· **Begrenzte Menge (LQ)**	5L
· **Freigestellte Mengen (EQ)**	Code: E1 Höchste Nettomenge je Innenverpackung: 30 ml Höchste Nettomenge je Außenverpackung: 1000 ml
· **Beförderungskategorie**	3
· **Tunnelbeschränkungscode**	D/E
· **IMDG**	
· **Limited quantities (LQ)**	5L
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· **UN "Model Regulation":**	UN 1169 EXTRAKTE, AROMATISCH, FLÜSSIG, 3, III, UMWELTGEFÄHRDEND

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ABSCHNITT 15: Rechtsvorschriften

· **15.1 Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Stoff oder das Gemisch**

· **Richtlinie 2012/18/EU**
· **Namentlich aufgeführte gefährliche Stoffe - ANHANG I** Der Stoff ist nicht enthalten.
· **Seveso-Kategorie**
E2 Gewässergefährdend
P5c ENTZÜNDBARE FLÜSSIGKEITEN
· **Mengenschwelle (in Tonnen) für die Anwendung in Betrieben der unteren Klasse** 200 t
· **Mengenschwelle (in Tonnen) für die Anwendung in Betrieben der oberen Klasse** 500 t
· **VERORDNUNG (EG) Nr. 1907/2006 ANHANG XVII** Beschränkungsbedingungen: 3

· **Nationale Vorschriften:**
· **Lagerklasse nach TRGS 510:** 3

· **Wassergefährdungsklasse (Einstufung gemäß VwVwS):** WGK 2 (Selbsteinstufung): wassergefährdend.
· **15.2 Stoffsicherheitsbeurteilung:** Eine Stoffsicherheitsbeurteilung wurde nicht durchgeführt.

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ABSCHNITT 16: Sonstige Angaben

Die Angaben stützen sich auf den heutigen Stand unserer Kenntnisse, sie stellen jedoch keine Zusicherung von Produkteigenschaften dar und begründen kein vertragliches Rechtsverhältnis.

· **Empfohlene Einschränkung der Anwendung** Nur für gewerbliche Anwendung.

· **Datenblatt ausstellender Bereich:** Abteilung Produktsicherheit
· **Ansprechpartner:** Frau Regina Tretter
· **Abkürzungen und Akronyme:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic

(Fortsetzung auf Seite 8)

Sicherheitsdatenblatt
gemäß 1907/2006/EG, Artikel 31

Druckdatum: 18.10.2016 *Versionsnummer 1* *überarbeitet am: 18.10.2016*

Handelsname: Eukalyptusöl spanisch 80/85%

(Fortsetzung von Seite 7)

vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 3: Entzündbare Flüssigkeiten – Kategorie 3
Skin Irrit. 2: Hautreizende/-ätzende Wirkung – Kategorie 2
Skin Sens. 1: Sensibilisierung der Haut – Kategorie 1
Asp. Tox. 1: Aspirationsgefahr – Kategorie 1
Aquatic Chronic 2: Gewässergefährdend - langfristig gewässergefährdend – Kategorie 2
· **** Daten gegenüber der Vorversion geändert***

APPENDIX: EXPOSURE SCENARIOS

Table of contents

ES 1: Manufacture; Manufacture

1.1. Title section

Environment	
CS 1: Manufacture	ERC 1
Worker	
CS 2: General process - Use in continuous closed process	PROC 1
CS 3: General process - used in continuous closed process with occasional exposure - including sampling and waste management	PROC 2
CS 4: General process - use in closed batch process (including sampling and waste management)	PROC 3
CS 5: General process - batch process (including sampling and waste management)	PROC 4
CS 6: Transferts	PROC 8b
CS 7: Cleaning and maintenance	PROC 8b
CS 8: QC lab	PROC 15

1.2. Conditions of use affecting exposure

1.2.1. Control of environmental exposure: Manufacture (ERC 1)

Amount used, frequency and duration of use (or from service life)
Daily amount per site <= 0.1 tonnes/day
Annual amount per site <= 25.0 tonnes/year
Emission days : >= 250 (days/year)
Conditions and measures related to sewage treatment plant
Estimated substance removal from wastewater via domestic sewage treatment 88.4 %
Assumed domestic sewage treatment plant flow >= 10000 m3/d

No application of sewage sludge to soil
Conditions and measures related to treatment of waste (including article waste)
Dispose of waste or used sacks/containers according to local regulations.
Other conditions affecting environmental exposure
Receiving surface water flow >= 400000 m3/d

1.2.2. Control of worker exposure: General process - Use in continuous closed process (PROC 1)

Product (article) characteristics
Covers percentage substance in the product up to 100 %.
Amount used (or contained in articles), frequency and duration of use/exposure
Covers daily exposures up to 8 hours.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Use in closed process, no likelihood of exposure
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically safety goggles (tested to EN166) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 130.0 °C

1.2.3. Control of worker exposure: General process - used in continuous closed process with occasional exposure - including sampling and waste management (PROC 2)

Product (article) characteristics
Covers percentage substance in the product up to 100 %.

Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 15 minutes.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Use in closed, continuous process with occasional controlled exposure
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically safety goggles (tested to EN166) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 80.0 °C

1.2.4. Control of worker exposure: General process - use in closed batch process (including sampling and waste management) (PROC 3)

Product (article) characteristics
Covers percentage substance in the product up to 100 %.
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 15 minutes.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Use in closed batch process (synthesis or formulation)
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically safety goggles (tested to EN166) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 80.0 °C

1.2.5. Control of worker exposure: General process - batch process (including sampling and waste management) (PROC 4)

Product (article) characteristics
Covers percentage substance in the product up to 100 %.
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Use in semi-closed process with opportunity for exposure
Local exhaust ventilation - efficiency of at least 90.0 %
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically safety goggles (tested to EN166) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 80.0 °C

1.2.6. Control of worker exposure: Transferts (PROC 8b)

Product (article) characteristics
Covers percentage substance in the product up to 100 %.
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Use in semi-closed process with opportunity for exposure
Local exhaust ventilation - efficiency of at least 95.0 %
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically safety goggles (tested to EN166) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

1.2.7. Control of worker exposure: Cleaning and maintenance (PROC 8b)

Product (article) characteristics
Limit the substance content in the product to 5 %.
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .

Use in semi-closed process with opportunity for exposure
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically safety goggles (tested to EN166) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

1.2.8. Control of worker exposure: QC lab (PROC 15)

Product (article) characteristics
Covers percentage substance in the product up to 100 %.
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 15 minutes.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically safety goggles (tested to EN166) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use

Assumes process temperature up to 40.0 °C

1.3. Exposure estimation and reference to its source

1.3.1. Environmental release and exposure: Manufacture (ERC 1)

Release route	Release rate	Release estimation method
Water	6 kg/day	ERC based
Air	5 kg/day	ERC based
Soil	0.01 kg/day	ERC based

Protection target	Exposure estimate (based on: EUSES 2.1.2)	RCR
Freshwater	0.002 mg/L	0.887
Sediment (freshwater)	0.054 mg/kg dw	0.081
Marine water	7.071E-4 mg/L	Not applicable*
Sediment (marine water)	0.021 mg/kg dw	0.318
Predator (freshwater)	0.59 mg/kg ww	0.029
Predator (marine water)	0.212 mg/kg ww	0.011
Top predator (marine water)	0.049 mg/kg ww	< 0.01
Sewage treatment plant	0.07 mg/L	< 0.01
Agricultural soil	1.781E-4 mg/kg dw	< 0.01
Predator (terrestrial)	1.645E-4 mg/kg ww	< 0.01
Man via environment - Inhalation	9.594E-4 mg/m³	< 0.01
Man via environment - Oral	0.002 mg/kg bw/day	< 0.01

*The manufacturing site is not assumed to be located on costal area. Therefore the Marine water RCR can be disregarded.

1.3.2. Worker exposure: General process - Use in continuous closed process (PROC 1)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.045 mg/m³ (TRA Workers 3.0)	0.013
Dermal, systemic, long-term	0.034 mg/kg bw/day (TRA Workers 3.0)	0.034
Combined routes, systemic, long-term		0.047

1.3.3. Worker exposure: General process - used in continuous closed process with occasional exposure - including sampling and waste management (PROC 2)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.45 mg/m³ (TRA Workers 3.0)	0.128
Dermal, systemic, long-term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.137
Combined routes, systemic, long-term		0.265

1.3.4. Worker exposure: General process - use in closed batch process (including sampling and waste management) (PROC 3)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	1.35 mg/m³ (TRA Workers 3.0)	0.383
Dermal, systemic, long-term	0.069 mg/kg bw/day (TRA Workers 3.0)	0.069
Combined routes, systemic, long-term		0.452

1.3.5. Worker exposure: General process - batch process (including sampling and waste management) (PROC 4)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.45 mg/m³ (TRA Workers 3.0)	0.128
Dermal, systemic, long-term	0.686 mg/kg bw/day (TRA Workers 3.0)	0.686
Combined routes, systemic, long-term		0.814

1.3.6. Worker exposure: Transferts (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.225 mg/m³ (TRA Workers 3.0)	0.064

Route of exposure and type of effects	Exposure estimate	RCR
Dermal, systemic, long-term	0.686 mg/kg bw/day (TRA Workers 3.0)	0.686
Combined routes, systemic, long-term		0.749

1.3.7. Worker exposure: Cleaning and maintenance (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.9 mg/m³ (TRA Workers 3.0)	0.256
Dermal, systemic, long-term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.274
Combined routes, systemic, long-term		0.53

1.3.8. Worker exposure: QC lab (PROC 15)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	2.249 mg/m³ (TRA Workers 3.0)	0.639
Dermal, systemic, long-term	0.034 mg/kg bw/day (TRA Workers 3.0)	0.034
Combined routes, systemic, long-term		0.673

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

Scaling method
The workers exposure and environmental emissions have been evaluated using TRA Workers 3.0 and EUSES 2.1.2, respectively.
Health
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures / Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

2. ES 2: Formulation; GES1 - Formulation of fragrance compounds

2.1. Title section

Environment	
CS 1: Formulation of fragrance compounds (large/medium sites)	ERC 2
CS 2: Formulation of fragrance compounds (small sites)	ERC 2
Worker	
CS 3: CS2 - Storage (IFRA F-2)	PROC 1
CS 4: CS3 - Mixing operations (closed systems) in batch process including filling of equipment and sample collection (IFRA F-3)	PROC 3
CS 5: CS4 - Mixing operations (open systems) in batch process including filling of equipment and sample collection (IFRA F-4)	PROC 5
CS 6: CS7 - Equipment cleaning and maintenance (IFRA F-7)	PROC 8a
CS 7: CS1 - Material transfers from/to vessel/container at dedicated facility (IFRA F-1).	PROC 8b
CS 8: CS6 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (IFRA F-6)	PROC 9
CS 9: CS5 - QC laboratory (IFRA F-5)	PROC 15

2.2. Conditions of use affecting exposure

2.2.1. Control of environmental exposure: Formulation of fragrance compounds (large/medium sites) (ERC 2)

Amount used, frequency and duration of use (or from service life)
Daily amount per site <= 0.16 tonnes/day
Annual amount per site <= 39.0 tonnes/year
Emission days : >= 250 (days/year)
Conditions and measures related to sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment 88.4 %
Assumed domestic sewage treatment plant flow >= 2000 m3/d
Conditions and measures related to treatment of waste (including article waste)
Dispose of waste or used sacks/containers according to local regulations.
Other conditions affecting environmental exposure
Receiving surface water flow >= 18000 m3/d

2.2.2. Control of environmental exposure: Formulation of fragrance compounds (small sites) (ERC 2)

Amount used, frequency and duration of use (or from service life)
Daily amount per site <= 0.064 tonnes/day
Annual amount per site <= 16.0 tonnes/year
Emission days : >= 250 (days/year)
Conditions and measures related to sewage treatment plant
Estimated substance removal from wastewater via domestic sewage treatment 88.4 %
Assumed domestic sewage treatment plant flow >= 2000 m3/d
Conditions and measures related to treatment of waste (including article waste)
Dispose of waste or used sacks/containers according to local regulations.
Other conditions affecting environmental exposure
Receiving surface water flow >= 18000 m3/d

2.2.3. Control of worker exposure: CS2 - Storage (IFRA F-2) (PROC 1)

Product (article) characteristics
Covers percentage substance in the product up to 100 %.
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.

Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Use in closed process, no likelihood of exposure
Advanced (industrial) exposure controls assumed.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

2.2.4. Control of worker exposure: CS3 - Mixing operations (closed systems) in batch process including filling of equipment and sample collection (IFRA F-3) (PROC 3)

Product (article) characteristics
Covers percentage substance in the product up to 100 %.
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 15 minutes.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Use in closed batch process (synthesis or formulation)
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically safety goggles (tested to EN166) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

2.2.5. Control of worker exposure: CS4 - Mixing operations (open systems) in batch process including filling of equipment and sample collection (IFRA F-4) (PROC 5)

Product (article) characteristics
Limit the substance content in the product to 25 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Local exhaust ventilation - efficiency of at least 90.0 %
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically safety goggles (tested to EN166) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

2.2.6. Control of worker exposure: CS7 - Equipment cleaning and maintenance (IFRA F-7) (PROC 8a)

Product (article) characteristics
Limit the substance content in the product to 5 %.
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .

Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically safety goggles (tested to EN166) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

2.2.7. Control of worker exposure: CS1 - Material transfers from/to vessel/container at dedicated facility (IFRA F-1). (PROC 8b)

Product (article) characteristics
Limit the substance content in the product to 25 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Use in semi-closed process with opportunity for exposure
Local exhaust ventilation - efficiency of at least 95.0 %
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically safety goggles (tested to EN166) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

2.2.8. Control of worker exposure: CS6 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (IFRA F-6) (PROC 9)

Product (article) characteristics
Limit the substance content in the product to 25 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Use in semi-closed process with opportunity for exposure
Local exhaust ventilation - efficiency of at least 90.0 %
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically safety goggles (tested to EN166) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

2.2.9. Control of worker exposure: CS5 - QC laboratory (IFRA F-5) (PROC 15)

Product (article) characteristics
Covers percentage substance in the product up to 100 %.
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 15 minutes.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Local exhaust ventilation - efficiency of at least 90.0 %
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically safety goggles (tested to EN166) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

2.3. Exposure estimation and reference to its source

2.3.1. Environmental release and exposure: Formulation of fragrance compounds (large/medium sites) (ERC 2)

Release route	Release rate	Release estimation method
Water	0.312 kg/day	SpERC based IFRA 2.1a.v1 - IFRA 2.1a.v1 IFRA - Formulation of fragrance compounds at large/medium sites - IFRA - Formulation of fragrance compounds at large/medium sites
Air	3.9 kg/day	SpERC based

Release route	Release rate	Release estimation method
		same as above
Soil	0 kg/day	SpERC based same as above

Protection target	Exposure estimate (based on: EUSES 2.1.2)	RCR
Freshwater	0.002 mg/L	0.942
Sediment (freshwater)	0.057 mg/kg dw	0.086
Marine water	1.908E-4 mg/L	0.935
Sediment (marine water)	0.006 mg/kg dw	0.086
Predator (freshwater)	0.622 mg/kg ww	0.031
Predator (marine water)	0.061 mg/kg ww	< 0.01
Top predator (marine water)	0.019 mg/kg ww	< 0.01
Sewage treatment plant	0.018 mg/L	< 0.01
Agricultural soil	0.011 mg/kg dw	0.08
Predator (terrestrial)	0.003 mg/kg ww	< 0.01
Man via environment – Inhalation	7.5E-4 mg/m³	< 0.01
Man via environment – Oral	0.002 mg/kg bw/day	< 0.01

2.3.2. Environmental release and exposure: Formulation of fragrance compounds (small sites) (ERC 2)

Release route	Release rate	Release estimation method
Water	0.32 kg/day	SpERC based IFRA 2.1b.v1 - IFRA 2.1b.v1

Release route	Release rate	Release estimation method
		IFRA - Formulation of fragrance compounds at small sites - IFRA - Formulation of fragrance compounds at small sites
Air	1.6 kg/day	SpERC based same as above
Soil	0 kg/day	SpERC based same as above

Protection target	Exposure estimate (based on: EUSES 2.1.2)	RCR
Freshwater	0.002 mg/L	0.965
Sediment (freshwater)	0.058 mg/kg dw	0.088
Marine water	1.955E-4 mg/L	0.958
Sediment (marine water)	0.006 mg/kg dw	0.088
Predator (freshwater)	0.636 mg/kg ww	0.032
Predator (marine water)	0.062 mg/kg ww	< 0.01
Top predator (marine water)	0.019 mg/kg ww	< 0.01
Sewage treatment plant	0.019 mg/L	< 0.01
Agricultural soil	0.011 mg/kg dw	0.082
Predator (terrestrial)	0.003 mg/kg ww	< 0.01
Man via environment - Inhalation	3.12E-4 mg/m³	< 0.01
Man via environment - Oral	0.002 mg/kg bw/day	< 0.01

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

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.009 mg/m³ (TRA Workers 3.0)	< 0.01
Dermal, systemic, long-term	0.034 mg/kg bw/day (TRA Workers 3.0)	0.034
Combined routes, systemic, long-term		0.037

2.3.4. Worker exposure: CS3 - Mixing operations (closed systems) in batch process including filling of equipment and sample collection (IFRA F-3) (PROC 3)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	1.35 mg/m³ (TRA Workers 3.0)	0.383
Dermal, systemic, long-term	0.069 mg/kg bw/day (TRA Workers 3.0)	0.069
Combined routes, systemic, long-term		0.452

2.3.5. Worker exposure: CS4 - Mixing operations (open systems) in batch process including filling of equipment and sample collection (IFRA F-4) (PROC 5)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.27 mg/m³ (TRA Workers 3.0)	0.077
Dermal, systemic, long-term	0.411 mg/kg bw/day (TRA Workers 3.0)	0.411
Combined routes, systemic, long-term		0.488

2.3.6. 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	0.18 mg/m³ (TRA Workers 3.0)	0.051
Dermal, systemic, long-term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.137
Combined routes, systemic, long-term		0.188

2.3.7. Worker exposure: CS1 - Material transfers from/to vessel/container at dedicated facility (IFRA F-1). (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.135 mg/m³ (TRA Workers 3.0)	0.038

Route of exposure and type of effects	Exposure estimate	RCR
Dermal, systemic, long-term	0.411 mg/kg bw/day (TRA Workers 3.0)	0.411
Combined routes, systemic, long-term		0.45

2.3.8. Worker exposure: CS6 - Transfer of substance or preparation 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	0.27 mg/m³ (TRA Workers 3.0)	0.077
Dermal, systemic, long-term	0.206 mg/kg bw/day (TRA Workers 3.0)	0.206
Combined routes, systemic, long-term		0.283

2.3.9. Worker exposure: CS5 - QC laboratory (IFRA F-5) (PROC 15)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.225 mg/m³ (TRA Workers 3.0)	0.064
Dermal, systemic, long-term	0.034 mg/kg bw/day (TRA Workers 3.0)	0.034
Combined routes, systemic, long-term		0.098

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

Scaling method
The workers exposure and environmental emissions have been evaluated using TRA Workers 3.0 and EUSES 2.1.2, respectively.
Health
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures / Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Eucalyptus globulus, ext.,

3. ES 3: Formulation; GES2 - Formulation of fragrance end-products

3.1. Title section

Environment	
CS 1: Formulation of Household Care/Air Freshners products (medium scale)	ERC 2
CS 2: Formulation of Fine Fragrance products (small scale)	ERC 2
CS 3: Formulation of Fine Fragrance products (cleaning with organic solvents)	ERC 2
CS 4: Formulation of Body Care products (medium scale)	ERC 2
Worker	
CS 5: CS2 - Storage (IFRA F-2)	PROC 1
CS 6: CS3 - Mixing operations (closed systems) in batch process including filling of equipment and sample collection (IFRA F-3)	PROC 3
CS 7: CS4 - Mixing operations (open systems) in batch process including filling of equipment and sample collection (IFRA F-4)	PROC 5
CS 8: CS7 - Equipment cleaning and maintenance (IFRA F-7)	PROC 8a
CS 9: CS1 - Material transfers from/to vessel/container at dedicated facility (IFRA F-1).	PROC 8b
CS 10: CS6 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (IFRA F-6)	PROC 9
CS 11: CS8 - Production of preparations or articles by tabletting, compression, extrusion, pelletisation (AISE M-8)	PROC 14
CS 12: CS5 - QC laboratory (IFRA F-5)	PROC 15

3.2. Conditions of use affecting exposure

3.2.1. Control of environmental exposure: Formulation of Household Care/Air Freshners products (medium scale) (ERC 2)

Amount used, frequency and duration of use (or from service life)
Daily amount per site <= 0.08 tonnes/day

Annual amount per site <= 20.0 tonnes/year
Technical and organisational conditions and measures
Type of process: Substance applied in aqueous process solution with negligible volatilization
Indoor use
Equipment cleaning with reduced emissions to wastewater
Process efficiency: Process optimized for efficient use of raw materials.
Conditions and measures related to sewage treatment plant
Estimated substance removal from wastewater via domestic sewage treatment 88.4 %
Assumed domestic sewage treatment plant flow >= 2000 m3/d
Conditions and measures related to treatment of waste (including article waste)
Dispose of waste or used sacks/containers according to local regulations.
Other conditions affecting environmental exposure
Receiving surface water flow >= 18000 m3/d
General good practice: Trained staff, spill protection including waste reuse

3.2.2. Control of environmental exposure: Formulation of Fine Fragrance products (small scale) (ERC 2)

Amount used, frequency and duration of use (or from service life)
Daily amount per site <= 0.018 tonnes/day
Annual amount per site <= 4.5 tonnes/year
Emission days : >= 250 (days/year)
Technical and organisational conditions and measures
Type of Process: Substance applied in aqueous process solution with negligible volatilization
Equipment cleaning with reduced emissions to wastewater
Indoor use

Process optimized for efficient use of raw materials.
Conditions and measures related to sewage treatment plant
Estimated substance removal from wastewater via domestic sewage treatment 88.4%
Assumed domestic sewage treatment plant flow >= 2000 m3/d
Conditions and measures related to treatment of waste (including article waste)
Dispose of waste or used sacks/containers according to local regulations.
Other conditions affecting environmental exposure
Receiving surface water flow >= 18000 m3/d

3.2.3. Control of environmental exposure: Formulation of Fine Fragrance products (cleaning with organic solvents) (ERC 2)

Amount used, frequency and duration of use (or from service life)
Daily amount per site <= 0.046 tonnes/day
Annual amount per site <= 11.5 tonnes/year
Emission days : >= 250 (days/year)
Technical and organisational conditions and measures
Type of Process: Solvent based process
Indoor use
Equipment cleaning: Equipment cleaned with organic solvent, washings are collected and disposed of as solvent waste.
Process with efficient use of raw materials.
Conditions and measures related to sewage treatment plant
Estimated substance removal from wastewater via domestic sewage treatment 100.0 %
Assumed domestic sewage treatment plant flow >= 2000 m3/d
Conditions and measures related to treatment of waste (including article waste)

Dispose of waste or used sacks/containers according to local regulations.
Other conditions affecting environmental exposure
Receiving surface water flow >= 18000 m3/d

3.2.4. Control of environmental exposure: Formulation of Body Care products (medium scale) (ERC 2)

Amount used, frequency and duration of use (or from service life)
Daily amount per site <= 0.076 tonnes/day
Annual amount per site <= 19.0 tonnes/year
Emission days : >= 250 (days/year)
Technical and organisational conditions and measures
Type of Process: Substance applied in aqueous process solution with negligible volatilization
Equipment cleaning with reduced emissions to wastewater
Indoor use
Process optimized for efficient use of raw materials.
Oil water separator
Conditions and measures related to sewage treatment plant
Estimated substance removal from wastewater via domestic sewage treatment 88.4 %
Assumed domestic sewage treatment plant flow >= 10000 m3/d
No application of sewage sludge to soil
Conditions and measures related to treatment of waste (including article waste)
Dispose of waste or used sacks/containers according to local regulations.
Other conditions affecting environmental exposure
Receiving surface water flow >= 400000 m3/d

3.2.5. Control of worker exposure: CS2 - Storage (IFRA F-2) (PROC 1)

Product (article) characteristics
Limit the substance content in the product to 25 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Use in closed process, no likelihood of exposure
Advanced (industrial) exposure controls assumed.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

3.2.6. Control of worker exposure: CS3 - Mixing operations (closed systems) in batch process including filling of equipment and sample collection (IFRA F-3) (PROC 3)

Product (article) characteristics
Limit the substance content in the product to 25 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 15 minutes.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Use in closed batch process (synthesis or formulation)
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically safety goggles (tested to EN166) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

3.2.7. Control of worker exposure: CS4 - Mixing operations (open systems) in batch process including filling of equipment and sample collection (IFRA F-4) (PROC 5)

Product (article) characteristics
Limit the substance content in the product to 25 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Local exhaust ventilation - efficiency of at least 90.0 %
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically safety goggles (tested to EN166) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

3.2.8. Control of worker exposure: CS7 - Equipment cleaning and maintenance (IFRA F-7) (PROC 8a)

Product (article) characteristics

Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically safety goggles (tested to EN166) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

3.2.9. Control of worker exposure: CS1 - Material transfers from/to vessel/container at dedicated facility (IFRA F-1). (PROC 8b)

Product (article) characteristics
Limit the substance content in the product to 25 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Use in semi-closed process with opportunity for exposure
Local exhaust ventilation - efficiency of at least 95.0 %
Advanced (industrial) exposure controls assumed.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically safety goggles (tested to EN166) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

3.2.10. Control of worker exposure: CS6 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (IFRA F-6) (PROC 9)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Use in semi-closed process with opportunity for exposure
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

3.2.11. Control of worker exposure: CS8 - Production of preparations or articles by tabletting, compression, extrusion, pelletisation (AISE M-8) (PROC 14)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 4 hours.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Local exhaust ventilation - efficiency of at least 80.0 %
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

3.2.12. Control of worker exposure: CS5 - QC laboratory (IFRA F-5) (PROC 15)

Product (article) characteristics
Limit the substance content in the product to 25 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 15 minutes.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically safety goggles (tested to EN166) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

3.3. Exposure estimation and reference to its source

3.3.1. Environmental release and exposure: Formulation of Household Care/Air Freshners products (medium scale) (ERC 2)

Release route	Release rate	Release estimation method
Water	0.16 kg/day	SpERC based AISE 2.1k.v2 - AISE 2.1k.v2 Industrial use in formulation of liquid cleaning and maintenance products: High Viscosity (medium scale) - Formulation of liquid Detergents/ Maintenance Products: High Viscosity (medium scale)
Air	0 kg/day	SpERC based same as above
Soil	0 kg/day	SpERC based same as above

Protection target	Exposure estimate (based on: EUSES 2.1.2)	RCR
Freshwater	0.001 mg/L	0.509
Sediment (freshwater)	0.031 mg/kg dw	0.046
Marine water	1.024E-4 mg/L	0.502
Sediment (marine water)	0.003 mg/kg dw	0.046

Protection target	Exposure estimate (based on: EUSES 2.1.2)	RCR
Predator (freshwater)	0.364 mg/kg ww	0.018
Predator (marine water)	0.035 mg/kg ww	< 0.01
Top predator (marine water)	0.013 mg/kg ww	< 0.01
Sewage treatment plant	0.009 mg/L	< 0.01
Agricultural soil	0.005 mg/kg dw	0.041
Predator (terrestrial)	0.001 mg/kg ww	< 0.01
Man via environment - Inhalation	8.093E-6 mg/m³	< 0.01
Man via environment - Oral	0.001 mg/kg bw/day	< 0.01

3.3.2. Environmental release and exposure: Formulation of Fine Fragrance products (small scale) (ERC 2)

Release route	Release rate	Release estimation method
Water	0.27 kg/day	SpERC based Cosmetics Europe 2.1d.v2 - Cosmetics Europe 2.1d.v2 Industrial use in formulation of liquid water-borne cosmetic products - fine fragrances - cleaning with water (medium scale) - Formulation of fine fragrances - cleaning with water (medium scale)
Air	0 kg/day	SpERC based same as above
Soil	0 kg/day	SpERC based same as above

Protection target	Exposure estimate (based on: EUSES 2.1.2)	RCR
Freshwater	0.002 mg/L	0.823
Sediment (freshwater)	0.05 mg/kg dw	0.075
Marine water	1.664E-4 mg/L	0.816
Sediment (marine water)	0.005 mg/kg dw	0.075
Predator (freshwater)	0.551 mg/kg ww	0.028
Predator (marine water)	0.054 mg/kg ww	< 0.01
Top predator (marine water)	0.017 mg/kg ww	< 0.01
Sewage treatment plant	0.016 mg/L	< 0.01
Agricultural soil	0.009 mg/kg dw	0.069
Predator (terrestrial)	0.002 mg/kg ww	< 0.01
Man via environment - Inhalation	8.6E-6 mg/m³	< 0.01
Man via environment - Oral	0.002 mg/kg bw/day	< 0.01

3.3.3. Environmental release and exposure: Formulation of Fine Fragrance products (cleaning with organic solvents) (ERC 2)

Release route	Release rate	Release estimation method
Water	0 kg/day	SpERC based Cosmetics Europe 2.2c.v2 - Cosmetics Europe 2.2c.v2 Industrial use in formulation of cosmetic products which involve cleaning of manufacturing equipment with organic solvents - (small scale) - Formulation of cosmetic products involving cleaning with organic solvents (small scale)
Air	0 kg/day	SpERC based same as above
Soil	0 kg/day	SpERC based

Release route	Release rate	Release estimation method
		same as above

Protection target	Exposure estimate (based on: EUSES 2.1.2)	RCR
Freshwater	1.084E-4 mg/L	0.053
Sediment (freshwater)	0.003 mg/kg dw	< 0.01
Marine water	9.43E-6 mg/L	0.046
Sediment (marine water)	2.795E-4 mg/kg dw	< 0.01
Predator (freshwater)	0.092 mg/kg ww	< 0.01
Predator (marine water)	0.008 mg/kg ww	< 0.01
Top predator (marine water)	0.008 mg/kg ww	< 0.01
Sewage treatment plant	0 mg/L	< 0.01
Agricultural soil	6.649E-6 mg/kg dw	< 0.01
Predator (terrestrial)	2.498E-5 mg/kg ww	< 0.01
Man via environment - Inhalation	7.356E-6 mg/m³	< 0.01
Man via environment - Oral	1.554E-4 mg/kg bw/day	< 0.01

3.3.4. Environmental release and exposure: Formulation of Body Care products (medium scale) (ERC 2)

Release route	Release rate	Release estimation method
Water	1.52 kg/day	SpERC based Cosmetics Europe 2.1i.v2 - Cosmetics Europe 2.1i.v2

Release route	Release rate	Release estimation method
		Industrial use in formulation of liquid water-borne cosmetic products - non-liquid creams (medium scale) - Formulation of non-liquid creams (medium scale)
Air	0 kg/day	SpERC based same as above
Soil	0 kg/day	SpERC based same as above

Protection target	Exposure estimate (based on: EUSES 2.1.2)	RCR
Freshwater	5.395E-4 mg/L	0.264
Sediment (freshwater)	0.016 mg/kg dw	0.024
Marine water	1.862E-4 mg/L	0.913
Sediment (marine water)	0.006 mg/kg dw	0.084
Predator (freshwater)	0.218 mg/kg ww	0.011
Predator (marine water)	0.06 mg/kg ww	< 0.01
Top predator (marine water)	0.018 mg/kg ww	< 0.01
Sewage treatment plant	0.018 mg/L	< 0.01
Agricultural soil	7.872E-6 mg/kg dw	< 0.01
Predator (terrestrial)	2.597E-5 mg/kg ww	< 0.01
Man via environment - Inhalation	1.434E-5 mg/m³	< 0.01
Man via environment - Oral	5.779E-4 mg/kg bw/day	< 0.01

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

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.005 mg/m³ (TRA Workers 3.0)	< 0.01
Dermal, systemic, long-term	0.02 mg/kg bw/day (TRA Workers 3.0)	0.02
Combined routes, systemic, long-term		0.022

3.3.6. Worker exposure: CS3 - Mixing operations (closed systems) in batch process including filling of equipment and sample collection (IFRA F-3) (PROC 3)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.81 mg/m³ (TRA Workers 3.0)	0.23
Dermal, systemic, long-term	0.041 mg/kg bw/day (TRA Workers 3.0)	0.041
Combined routes, systemic, long-term		0.272

3.3.7. Worker exposure: CS4 - Mixing operations (open systems) in batch process including filling of equipment and sample collection (IFRA F-4) (PROC 5)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.27 mg/m³ (TRA Workers 3.0)	0.077
Dermal, systemic, long-term	0.411 mg/kg bw/day (TRA Workers 3.0)	0.411
Combined routes, systemic, long-term		0.488

3.3.8. 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	0.9 mg/m³ (TRA Workers 3.0)	0.256
Dermal, systemic, long-term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.137
Combined routes, systemic, long-term		0.393

3.3.9. Worker exposure: CS1 - Material transfers from/to vessel/container at dedicated facility (IFRA F-1). (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.135 mg/m³ (TRA Workers 3.0)	0.038

Route of exposure and type of effects	Exposure estimate	RCR
Dermal, systemic, long-term	0.411 mg/kg bw/day (TRA Workers 3.0)	0.411
Combined routes, systemic, long-term		0.45

3.3.10. Worker exposure: CS6 - Transfer of substance or preparation 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	0.45 mg/m³ (TRA Workers 3.0)	0.128
Dermal, systemic, long-term	0.069 mg/kg bw/day (TRA Workers 3.0)	0.069
Combined routes, systemic, long-term		0.196

3.3.11. Worker exposure: CS8 - Production of preparations or articles by tabletting, compression, extrusion, pelletisation (AISE M-8) (PROC 14)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.54 mg/m³ (TRA Workers 3.0)	0.153
Dermal, systemic, long-term	0.034 mg/kg bw/day (TRA Workers 3.0)	0.034
Combined routes, systemic, long-term		0.188

3.3.12. Worker exposure: CS5 - QC laboratory (IFRA F-5) (PROC 15)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	1.35 mg/m³ (TRA Workers 3.0)	0.383
Dermal, systemic, long-term	0.02 mg/kg bw/day (TRA Workers 3.0)	0.02
Combined routes, systemic, long-term		0.404

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

Scaling method
The workers exposure and environmental emissions have been evaluated using TRA Workers 3.0 and EUSES 2.1.2, respectively.

Health
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures / Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

4. ES 4: Use at industrial site; GES3 - Industrial end-use of washing and cleaning products

4.1. Title section

Environment	
CS 1: GES3 - Industrial end-use of washing and cleaning products	ERC 4
Worker	
CS 2: Industrial use of Food beverage and pharmacos products; Process cleaner; Cleaning In place (CIP) process (AISE-P801); Use Phase - Industrial use of Food beverage and pharmacos products; Defoaming product; Automatic process (AISE-P805); Use Phase	PROC 1
CS 3: Industrial use of Laundry products; Laundry detergent; Automatic process (AISE-P101); Use Phase - Industrial use of Laundry products; Conditioner (softner/starch); Automatic process (AISE-P104); Use Phase - Industrial use of Laundry products; Laundry aid (gasing); Automatic process (AISE-P107); Use Phase - Industrial use of Laundry products; Laundry aid (non-gasing); Automatic process (AISE-P110); Use Phase	PROC 2
CS 4: Industrial use of pharmacos products; Disinfection product; Semi-automatic process (AISE-P810); Use Phase	PROC 4
CS 5: Industrial use of Vehicle cleaning Products; Train cleaner; Semi-Automatic process (AISE-P707); Use Phase - Industrial use of Vehicle cleaning Products; Aeroplane cleaner; Semi-Automatic process (AISE-P708); Use Phase -Industrial Use of Vehicle cleaning Products; Car wash product; Semi-Automatic process (AISE-P709); Use Phase - Industrial Use of Vehicle cleaning Products; Dewaxing product; Semi-Automatic process (AISE-P712); Use Phase Industrial use of Food beverage and pharmacos products; Process cleaner; Semi closed cleaning process (AISE-P802); Use Phase	PROC 4
CS 6: Industrial use of Water treatment Products; Preservation and sanitation agent ; Drink and pool water (AISE-P904); Use Phase - Industrial use of Water treatment Products; Sanitation agent; Waste water (AISE-P905); Use Phase	PROC 4
CS 7: Industrial Use of Vehicle cleaning Products; Car wash product; Spray and rinse process (AISE-P710); Use Phase	PROC 7
CS 8: Industrial Use of Vehicle cleaning Products; Car wash product; Spray and wipe process (AISE-P711); Use Phase - Industrial Use of Vehicle cleaning Products; Boat cleaner; Spray and wipe process (AISE-P714); Use Phase	PROC 7

CS 9: Industrial use of Food beverage and pharmacos products; Foam cleaner; Semi-Automatic with venting process (AISE-P806); Use Phase	PROC 7
CS 10: Industrial use of Food beverage and pharmacos products; Chain maintenance product; Automatic spray process (AISE-P803); Use Phase - Industrial use of Food beverage and pharmacos products; Foam cleaner; Semi-Automatic without venting process (AISE-P807); Use Phase - Industrial use of Food beverage and pharmacos products; Animal housing care; Semi-Automatic process (AISE-P809); Use Phase - Industrial use of Food beverage and pharmacos products; Disinfection product; Fogging and gassing Semi-automatic process (AISE-P811); Use Phase	PROC 7
CS 11: Industrial Use of Facade/surface Cleaning Products; Façade/surface cleaner; High pressure process (AISE-P906); Use Phase - Industrial Use of Façade/surface Cleaning Products; Facade/surface cleaner; Medium pressure process (AISE-P907); Use Phase	PROC 7
CS 12: Industrial use of Laundry products; Laundry detergent; Automatic process (AISE-P101); Preparatory Phase - Industrial use of Laundry products; Conditioner (softner/starch); Automatic process (AISE-P104); Preparatory Phase - Industrial use of Laundry products; Laundry aid (gasing); Automatic process (AISE-P107); Preparatory Phase - Industrial use of Laundry products; Laundry aid (non-gasing); Automatic process (AISE-P110); Preparatory Phase - Industrial use of Food beverage and pharmacos products; Process cleaner; Cleaning In place (CIP) process (AISE-P801); Preparatory Phase - Industrial use of Food beverage and pharmacos products; Process cleaner; Semi closed cleaning process (AISE-P802); Preparatory Phase - Industrial use of Food beverage and pharmacos products; Chain maintenance product; Automatic spray process (AISE-P803); Preparatory Phase - Industrial use of Food beverage and pharmacos products; Defoaming product; Automatic process (AISE-P805); Preparatory Phase	PROC 8b
CS 13: Industrial use of Water treatment Products; Preservation and sanitation agent ; Drink and pool water (AISE-P904); Preparatory Phase - Industrial use of Water treatment Products; Sanitation agent; Waste water (AISE-P905); Preparatory Phase - Industrial Use of Façade/surface Cleaning Products; Façade/surface cleaner; High pressure process (AISE-P906); Preparatory Phase - Industrial Use of Façade/surface Cleaning Products; Façade/surface cleaner; Medium pressure process (AISE-P907); Preparatory Phase	PROC 8b
CS 14: Industrial use of Vehicle cleaning Products; Train cleaner; Semi-Automatic process (AISE-P707); Preparatory Phase - Industrial use of Vehicle cleaning Products; Aeroplane cleaner; Semi-Automatic process (AISE-P708); Preparatory Phase - Industrial Use of Vehicle cleaning Products; Car wash product; Semi-Automatic process (AISE-P709); Preparatory Phase - Industrial	PROC 8b

Use of Vehicle cleaning Products; Car wash product; Spray and rinse process (AISE-P710); Preparatory Phase - Industrial Use of Vehicle cleaning Products; Dewaxing product; Semi-Automatic process (AISE-P712); Preparatory Phase - Industrial use of Food beverage and pharmacos products; Foam cleaner; Semi-Automatic without venting process (AISE-P807); Preparatory Phase - Industrial use of Food beverage and pharmacos products; Disinfection product; Fogging and gassing Semi-automatic process (AISE-P811); Preparatory Phase	
CS 15: Industrial Use of Vehicle cleaning Products; Car wash product; Spray and wipe process (AISE-P711); Preparatory Phase - Industrial Use of Vehicle cleaning Products; Boat cleaning; semi automatic (AISE-P713); Preparatory Phase - Industrial Use of Vehicle cleaning Products; Boat cleaner; Spray and wipe process (AISE-P714); Preparatory Phase	PROC 8b
CS 16: Industrial use of Food beverage and pharmacos products; Animal housing care; Semi-Automatic process (AISE-P809); Preparatory Phase - Industrial use of pharmacos products; Disinfection product; Semi-automatic process (AISE-P810); Preparatory Phase	PROC 8b
CS 17: Industrial use of Food beverage and pharmacos products; Foam cleaner; Semi-Automatic with venting process (AISE-P806); Preparatory Phase	PROC 8b
CS 18: Industrial Use of Vehicle cleaning Products; Car wash product; Spray and wipe process (AISE-P711); Use Phase - Industrial Use of Vehicle cleaning Products; Boat cleaning; semi automatic (AISE-P713); Use Phase - Industrial Use of Vehicle cleaning Products; Boat cleaner; Spray and wipe process (AISE-P714); Use Phase	PROC 10
CS 19: Industrial use of Food beverage and pharmacos products; Chain maintenance product; Automatic drip and brush process (AISE-P804); Use Phase	PROC 13

4.2. Conditions of use affecting exposure

4.2.1. Control of environmental exposure: GES3 - 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 <= 0.0014 tonnes/day
Annual amount per site <= 0.3 tonnes/year
Emission days : >= 250 (days/year)

Conditions and measures related to sewage treatment plant
Estimated substance removal from wastewater via domestic sewage treatment 88.4 %
Assumed domestic sewage treatment plant flow >= 10000 m3/d
Conditions and measures related to treatment of waste (including article waste)
Dispose of waste or used sacks/containers according to local regulations.
Other conditions affecting environmental exposure
Receiving surface water flow >= 400000 m3/d

4.2.2. Control of worker exposure: Industrial use of Food beverage and pharmacos products; Process cleaner; Cleaning In place (CIP) process (AISE-P801); Use Phase - Industrial use of Food beverage and pharmacos products; Defoaming product; Automatic process (AISE-P805); Use Phase (PROC 1)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Covers daily exposures up to 8 hours.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Use in closed process, no likelihood of exposure
Advanced (industrial) exposure controls assumed.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

4.2.3. Control of worker exposure: Industrial use of Laundry products; Laundry detergent; Automatic process (AISE-P101); Use Phase - Industrial use of Laundry products; Conditioner (softner/starch); Automatic process (AISE-P104); Use Phase - Industrial use of Laundry products; Laundry aid (gasing); Automatic process (AISE-P107); Use Phase - Industrial use of Laundry products; Laundry aid (non-gasing); Automatic process (AISE-P110); Use Phase (PROC 2)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Covers daily exposures up to 8 hours.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Use in closed, continuous process with occasional controlled exposure
Advanced (industrial) exposure controls assumed.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

4.2.4. Control of worker exposure: Industrial use of pharmacos products; Disinfection product; Semi-automatic process (AISE-P810); Use Phase (PROC 4)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 4 hours.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Use in semi-closed process with opportunity for exposure
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

4.2.5. Control of worker exposure: Industrial use of Vehicle cleaning Products; Train cleaner; Semi-Automatic process (AISE-P707); Use Phase - Industrial use of Vehicle cleaning Products; Aeroplane cleaner; Semi-Automatic process (AISE-P708); Use Phase -Industrial Use of Vehicle cleaning Products; Car wash product; Semi-Automatic process (AISE-P709); Use Phase - Industrial Use of Vehicle cleaning Products; Dewaxing product; Semi-Automatic process (AISE-P712); Use Phase Industrial use of Food beverage and pharmacos products; Process cleaner; Semi closed cleaning process (AISE-P802); Use Phase (PROC 4)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Covers daily exposures up to 8 hours.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Use in semi-closed process with opportunity for exposure
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

4.2.6. Control of worker exposure: Industrial use of Water treatment Products; Preservation and sanitation agent ; Drink and pool water (AISE-P904); Use Phase -

Industrial use of Water treatment Products; Sanitation agent; Waste water (AISE-P905); Use Phase (PROC 4)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 4 hours.
Technical and organisational conditions and measures
Use in semi-closed process with opportunity for exposure
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Ensure operation is undertaken outdoors.
Assumes process temperature up to 40.0 °C

4.2.7. Control of worker exposure: Industrial Use of Vehicle cleaning Products; Car wash product; Spray and rinse process (AISE-P710); Use Phase (PROC 7)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

4.2.8. Control of worker exposure: Industrial Use of Vehicle cleaning Products; Car wash product; Spray and wipe process (AISE-P711); Use Phase - Industrial Use of Vehicle cleaning Products; Boat cleaner; Spray and wipe process (AISE-P714); Use Phase (PROC 7)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Ensure operation is undertaken outdoors.
Assumes process temperature up to 40.0 °C

4.2.9. Control of worker exposure: Industrial use of Food beverage and pharmacos products; Foam cleaner; Semi-Automatic with venting process (AISE-P806); Use Phase (PROC 7)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 4 hours.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Local exhaust ventilation - efficiency of at least 95.0 %
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

4.2.10. Control of worker exposure: Industrial use of Food beverage and pharmacos products; Chain maintenance product; Automatic spray process (AISE-P803); Use Phase - Industrial use of Food beverage and pharmacos products; Foam cleaner; Semi-Automatic without venting process (AISE-P807); Use Phase - Industrial use of Food beverage and pharmacos products; Animal housing care; Semi-Automatic process (AISE-P809); Use Phase - Industrial use of Food beverage and pharmacos products; Disinfection product; Fogging and gassing Semi-automatic process (AISE-P811); Use Phase (PROC 7)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.

Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 95.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

4.2.11. Control of worker exposure: Industrial Use of Facade/surface Cleaning Products; Façade/surface cleaner; High pressure process (AISE-P906); Use Phase - Industrial Use of Façade/surface Cleaning Products; Facade/surface cleaner; Medium pressure process (AISE-P907); Use Phase (PROC 7)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 95.0 %; For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

4.2.12. Control of worker exposure: Industrial use of Laundry products; Laundry detergent; Automatic process (AISE-P101); Preparatory Phase - Industrial use of Laundry products; Conditioner (softner/starch); Automatic process (AISE-P104); Preparatory Phase - Industrial use of Laundry products; Laundry aid (gasing); Automatic process (AISE-P107); Preparatory Phase - Industrial use of Laundry products; Laundry aid (non-gasing); Automatic process (AISE-P110); Preparatory Phase - Industrial use of Food beverage and pharmacos products; Process cleaner; Cleaning In place (CIP) process (AISE-P801); Preparatory Phase - Industrial use of Food beverage and pharmacos products; Process cleaner; Semi closed cleaning process (AISE-P802); Preparatory Phase - Industrial use of Food beverage and pharmacos products; Chain maintenance product; Automatic spray process (AISE-P803); Preparatory Phase - Industrial use of Food beverage and pharmacos products; Defoaming product; Automatic process (AISE-P805); Preparatory Phase (PROC 8b)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 15 minutes.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Use in semi-closed process with opportunity for exposure
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

4.2.13. Control of worker exposure: Industrial use of Water treatment Products;

Preservation and sanitation agent ; Drink and pool water (AISE-P904); Preparatory Phase - Industrial use of Water treatment Products; Sanitation agent; Waste water (AISE-P905); Preparatory Phase - Industrial Use of Façade/surface Cleaning Products; Façade/surface cleaner; High pressure process (AISE-P906); Preparatory Phase - Industrial Use of Façade/surface Cleaning Products; Façade/surface cleaner; Medium pressure process (AISE-P907); Preparatory Phase (PROC 8b)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 15 minutes.
Technical and organisational conditions and measures
Use in semi-closed process with opportunity for exposure
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.
Other conditions affecting workers exposure
Ensure operation is undertaken outdoors.
Assumes process temperature up to 40.0 °C

4.2.14. Control of worker exposure: Industrial use of Vehicle cleaning Products; Train cleaner; Semi-Automatic process (AISE-P707); Preparatory Phase - Industrial use of Vehicle cleaning Products; Aeroplane cleaner; Semi-Automatic process (AISE-P708); Preparatory Phase - Industrial Use of Vehicle cleaning Products; Car wash product; Semi-Automatic process (AISE-P709); Preparatory Phase - Industrial Use of Vehicle cleaning Products; Car wash product; Spray and rinse process (AISE-P710); Preparatory Phase - Industrial Use of Vehicle cleaning Products; Dewaxing product; Semi-Automatic process (AISE-P712); Preparatory Phase - Industrial use of Food beverage and pharmacos products; Foam cleaner; Semi-Automatic without venting process (AISE-P807); Preparatory Phase - Industrial use of Food beverage and pharmacos products; Disinfection product; Fogging and gassing Semi-automatic process (AISE-P811); Preparatory Phase (PROC 8b)

Product (article) characteristics
Limit the substance content in the product to 1 % .

Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Use in semi-closed process with opportunity for exposure
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

4.2.15. Control of worker exposure: Industrial Use of Vehicle cleaning Products; Car wash product; Spray and wipe process (AISE-P711); Preparatory Phase - Industrial Use of Vehicle cleaning Products; Boat cleaning; semi automatic (AISE-P713); Preparatory Phase - Industrial Use of Vehicle cleaning Products; Boat cleaner; Spray and wipe process (AISE-P714); Preparatory Phase (PROC 8b)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Use in semi-closed process with opportunity for exposure
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.

Other conditions affecting workers exposure
Ensure operation is undertaken outdoors.
Assumes process temperature up to 40.0 °C

4.2.16. Control of worker exposure: Industrial use of Food beverage and pharmacos products; Animal housing care; Semi-Automatic process (AISE-P809); Preparatory Phase - Industrial use of pharmacos products; Disinfection product; Semi-automatic process (AISE-P810); Preparatory Phase (PROC 8b)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Use in semi-closed process with opportunity for exposure
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

4.2.17. Control of worker exposure: Industrial use of Food beverage and pharmacos products; Foam cleaner; Semi-Automatic with venting process (AISE-P806); Preparatory Phase (PROC 8b)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure

Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Use in semi-closed process with opportunity for exposure
Local exhaust ventilation - efficiency of at least 95.0 %
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

4.2.18. Control of worker exposure: Industrial Use of Vehicle cleaning Products; Car wash product; Spray and wipe process (AISE-P711); Use Phase - Industrial Use of Vehicle cleaning Products; Boat cleaning; semi automatic (AISE-P713); Use Phase - Industrial Use of Vehicle cleaning Products; Boat cleaner; Spray and wipe process (AISE-P714); Use Phase (PROC 10)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Covers daily exposures up to 8 hours.
Technical and organisational conditions and measures
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.; For further specification, refer to section 8 of the SDS.

Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Ensure operation is undertaken outdoors.
Assumes process temperature up to 40.0 °C

4.2.19. Control of worker exposure: Industrial use of Food beverage and pharmacos products; Chain maintenance product; Automatic drip and brush process (AISE-P804); Use Phase (PROC 13)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Covers daily exposures up to 8 hours.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Local exhaust ventilation - efficiency of at least 90.0 %
Advanced (industrial) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

4.3. Exposure estimation and reference to its source

4.3.1. Environmental release and exposure: GES3 - Industrial end-use of washing and cleaning products (ERC 4)

Release route	Release rate	Release estimation method
Water	1.36 kg/day	SpERC based

Release route	Release rate	Release estimation method
		AISE spERC 4.1.v1 - AISE spERC 4.1.v1 AISE - Industrial use of Water-borne Processing Aids - AISE - Industrial use of Water-borne Processing Aids
Air	0 kg/day	SpERC based same as above
Soil	0 kg/day	SpERC based same as above

Protection target	Exposure estimate (based on: EUSES 2.1.2)	RCR
Freshwater	4.942E-4 mg/L	0.242
Sediment (freshwater)	0.015 mg/kg dw	0.022
Marine water	1.676E-4 mg/L	0.822
Sediment (marine water)	0.005 mg/kg dw	0.075
Predator (freshwater)	0.192 mg/kg ww	< 0.01
Predator (marine water)	0.049 mg/kg ww	< 0.01
Top predator (marine water)	0.016 mg/kg ww	< 0.01
Sewage treatment plant	0.016 mg/L	< 0.01
Agricultural soil	0.009 mg/kg dw	0.069
Predator (terrestrial)	0.002 mg/kg ww	< 0.01
Man via environment - Inhalation	1.287E-5 mg/m³	< 0.01
Man via environment - Oral	5.166E-4 mg/kg bw/day	< 0.01

4.3.2. Worker exposure: Industrial use of Food beverage and pharmacos products; Process cleaner; Cleaning In place (CIP) process (AISE-P801); Use Phase - Industrial use of Food beverage and pharmacos products; Defoaming product; Automatic process (AISE-P805); Use Phase (PROC 1)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.004 mg/m³ (TRA Workers 3.0)	< 0.01
Dermal, systemic, long-term	0.003 mg/kg bw/day (TRA Workers 3.0)	< 0.01
Combined routes, systemic, long-term		< 0.01

4.3.3. Worker exposure: Industrial use of Laundry products; Laundry detergent; Automatic process (AISE-P101); Use Phase - Industrial use of Laundry products; Conditioner (softner/starch); Automatic process (AISE-P104); Use Phase - Industrial use of Laundry products; Laundry aid (gasing); Automatic process (AISE-P107); Use Phase - Industrial use of Laundry products; Laundry aid (non-gasing); Automatic process (AISE-P110); Use Phase (PROC 2)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.45 mg/m³ (TRA Workers 3.0)	0.128
Dermal, systemic, long-term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.137
Combined routes, systemic, long-term		0.265

4.3.4. Worker exposure: Industrial use of pharmacos products; Disinfection product; Semi-automatic process (AISE-P810); Use Phase (PROC 4)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	1.35 mg/m³ (TRA Workers 3.0)	0.383
Dermal, systemic, long-term	0.069 mg/kg bw/day (TRA Workers 3.0)	0.069
Combined routes, systemic, long-term		0.452

4.3.5. Worker exposure: Industrial use of Vehicle cleaning Products; Train cleaner; Semi-Automatic process (AISE-P707); Use Phase - Industrial use of Vehicle cleaning Products; Aeroplane cleaner; Semi-Automatic process (AISE-P708); Use Phase - Industrial Use of Vehicle cleaning Products; Car wash product; Semi-Automatic process (AISE-P709); Use Phase - Industrial Use of Vehicle cleaning Products; Dewaxing product; Semi-Automatic process (AISE-P712); Use Phase Industrial use of Food beverage and pharmacos products; Process cleaner; Semi closed cleaning process (AISE-P802); Use Phase (PROC 4)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.225 mg/m³ (TRA Workers 3.0)	0.064

Route of exposure and type of effects	Exposure estimate	RCR
Dermal, systemic, long-term	0.069 mg/kg bw/day (TRA Workers 3.0)	0.069
Combined routes, systemic, long-term		0.132

4.3.6. Worker exposure: Industrial use of Water treatment Products; Preservation and sanitation agent ; Drink and pool water (AISE-P904); Use Phase - Industrial use of Water treatment Products; Sanitation agent; Waste water (AISE-P905); Use Phase (PROC 4)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	1.35 mg/m³ (TRA Workers 3.0)	0.383
Dermal, systemic, long-term	0.069 mg/kg bw/day (TRA Workers 3.0)	0.069
Combined routes, systemic, long-term		0.452

4.3.7. Worker exposure: Industrial Use of Vehicle cleaning Products; Car wash product; Spray and rinse process (AISE-P710); Use Phase (PROC 7)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.9 mg/m³ (TRA Workers 3.0)	0.256
Dermal, systemic, long-term	0.214 mg/kg bw/day (TRA Workers 3.0)	0.214
Combined routes, systemic, long-term		0.47

4.3.8. Worker exposure: Industrial Use of Vehicle cleaning Products; Car wash product; Spray and wipe process (AISE-P711); Use Phase - Industrial Use of Vehicle cleaning Products; Boat cleaner; Spray and wipe process (AISE-P714); Use Phase (PROC 7)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.9 mg/m³ (TRA Workers 3.0)	0.256
Dermal, systemic, long-term	0.214 mg/kg bw/day (TRA Workers 3.0)	0.214
Combined routes, systemic, long-term		0.47

4.3.9. Worker exposure: Industrial use of Food beverage and pharmacos products; Foam cleaner; Semi-Automatic with venting process (AISE-P806); Use Phase (PROC 7)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.135 mg/m³ (TRA Workers 3.0)	0.038
Dermal, systemic, long-term	0.214 mg/kg bw/day (TRA Workers 3.0)	0.214
Combined routes, systemic, long-term		0.253

4.3.10. Worker exposure: Industrial use of Food beverage and pharmacos products; Chain maintenance product; Automatic spray process (AISE-P803); Use Phase - Industrial use of Food beverage and pharmacos products; Foam cleaner; Semi-Automatic without venting process (AISE-P807); Use Phase - Industrial use of Food beverage and pharmacos products; Animal housing care; Semi-Automatic process (AISE-P809); Use Phase - Industrial use of Food beverage and pharmacos products; Disinfection product; Fogging and gassing Semi-automatic process (AISE-P811); Use Phase (PROC 7)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.45 mg/m³ (TRA Workers 3.0)	0.128
Dermal, systemic, long-term	0.214 mg/kg bw/day (TRA Workers 3.0)	0.214
Combined routes, systemic, long-term		0.342

4.3.11. Worker exposure: Industrial Use of Facade/surface Cleaning Products; Façade/surface cleaner; High pressure process (AISE-P906); Use Phase - Industrial Use of Façade/surface Cleaning Products; Facade/surface cleaner; Medium pressure process (AISE-P907); Use Phase (PROC 7)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.45 mg/m³ (TRA Workers 3.0)	0.128
Dermal, systemic, long-term	0.214 mg/kg bw/day (TRA Workers 3.0)	0.214
Combined routes, systemic, long-term		0.342

4.3.12. Worker exposure: Industrial use of Laundry products; Laundry detergent; Automatic process (AISE-P101); Preparatory Phase - Industrial use of Laundry products; Conditioner (softner/starch); Automatic process (AISE-P104); Preparatory Phase - Industrial use of Laundry products; Laundry aid (gasing); Automatic process (AISE-P107); Preparatory Phase - Industrial use of Laundry products; Laundry aid (non-gasing); Automatic process (AISE-P110); Preparatory Phase - Industrial use of Food beverage and pharmacos products; Process cleaner; Cleaning In place (CIP) process (AISE-P801); Preparatory Phase - Industrial use of Food beverage and pharmacos products; Process cleaner; Semi closed cleaning process (AISE-P802); Preparatory Phase - Industrial use of Food beverage and pharmacos products; Chain

maintenance product; Automatic spray process (AISE-P803); Preparatory Phase - Industrial use of Food beverage and pharmacos products; Defoaming product; Automatic process (AISE-P805); Preparatory Phase (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.225 mg/m³ (TRA Workers 3.0)	0.064
Dermal, systemic, long-term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.274
Combined routes, systemic, long-term		0.338

4.3.13. Worker exposure: Industrial use of Water treatment Products; Preservation and sanitation agent ; Drink and pool water (AISE-P904); Preparatory Phase - Industrial use of Water treatment Products; Sanitation agent; Waste water (AISE-P905); Preparatory Phase - Industrial Use of Façade/surface Cleaning Products; Façade/surface cleaner; High pressure process (AISE-P906); Preparatory Phase - Industrial Use of Façade/surface Cleaning Products; Façade/surface cleaner; Medium pressure process (AISE-P907); Preparatory Phase (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.225 mg/m³ (TRA Workers 3.0)	0.064
Dermal, systemic, long-term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.274
Combined routes, systemic, long-term		0.338

4.3.14. Worker exposure: Industrial use of Vehicle cleaning Products; Train cleaner; Semi-Automatic process (AISE-P707); Preparatory Phase - Industrial use of Vehicle cleaning Products; Aeroplane cleaner; Semi-Automatic process (AISE-P708); Preparatory Phase - Industrial Use of Vehicle cleaning Products; Car wash product; Semi-Automatic process (AISE-P709); Preparatory Phase - Industrial Use of Vehicle cleaning Products; Car wash product; Spray and rinse process (AISE-P710); Preparatory Phase - Industrial Use of Vehicle cleaning Products; Dewaxing product; Semi-Automatic process (AISE-P712); Preparatory Phase - Industrial use of Food beverage and pharmacos products; Foam cleaner; Semi-Automatic without venting process (AISE-P807); Preparatory Phase - Industrial use of Food beverage and pharmacos products; Disinfection product; Fogging and gassing Semi-automatic process (AISE-P811); Preparatory Phase (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.45 mg/m³ (TRA Workers 3.0)	0.128
Dermal, systemic, long-term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.274
Combined routes, systemic, long-term		0.402

4.3.15. Worker exposure: Industrial Use of Vehicle cleaning Products; Car wash product; Spray and wipe process (AISE-P711); Preparatory Phase - Industrial Use of Vehicle cleaning Products; Boat cleaning; semi automatic (AISE-P713); Preparatory Phase - Industrial Use of Vehicle cleaning Products; Boat cleaner; Spray and wipe process (AISE-P714); Preparatory Phase (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.45 mg/m³ (TRA Workers 3.0)	0.128
Dermal, systemic, long-term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.274
Combined routes, systemic, long-term		0.402

4.3.16. Worker exposure: Industrial use of Food beverage and pharmacos products; Animal housing care; Semi-Automatic process (AISE-P809); Preparatory Phase - Industrial use of pharmacos products; Disinfection product; Semi-automatic process (AISE-P810); Preparatory Phase (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.45 mg/m³ (TRA Workers 3.0)	0.128
Dermal, systemic, long-term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.137
Combined routes, systemic, long-term		0.265

4.3.17. Worker exposure: Industrial use of Food beverage and pharmacos products; Foam cleaner; Semi-Automatic with venting process (AISE-P806); Preparatory Phase (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.022 mg/m³ (TRA Workers 3.0)	< 0.01
Dermal, systemic, long-term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.274
Combined routes, systemic, long-term		0.281

4.3.18. Worker exposure: Industrial Use of Vehicle cleaning Products; Car wash product; Spray and wipe process (AISE-P711); Use Phase - Industrial Use of Vehicle cleaning Products; Boat cleaning; semi automatic (AISE-P713); Use Phase - Industrial Use of Vehicle cleaning Products; Boat cleaner; Spray and wipe process (AISE-P714); Use Phase (PROC 10)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.45 mg/m³ (TRA Workers 3.0)	0.128

Route of exposure and type of effects	Exposure estimate	RCR
Dermal, systemic, long-term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.137
Combined routes, systemic, long-term		0.265

4.3.19. Worker exposure: Industrial use of Food beverage and pharmacos products; Chain maintenance product; Automatic drip and brush process (AISE-P804); Use Phase (PROC 13)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.45 mg/m³ (TRA Workers 3.0)	0.128
Dermal, systemic, long-term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.274
Combined routes, systemic, long-term		0.402

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

Scaling method
The workers exposure and environmental emissions have been evaluated using TRA Workers 3.0 and EUSES 2.1.2, respectively.
Health
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures / Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

5. ES 5: Use by professional worker; GES4 - Professional end-use of washing and cleaning products

5.1. Title section

Environment	
CS 1: GES4 - Professional end-use of washing and cleaning products (indoor use)	ERC 8d, ERC 8a
Worker	
CS 2: Professional Use of Laundry products ; Laundry detergent; Semi automatic process (AISE-P102); Use Phase - Professional Use of Laundry products ; Conditioner (softener/starch); Semi automatic process (AISE-P105); Use Phase - Professional Use of Laundry products ; Laundry aid (gasing); Semi automatic process (AISE-P108); Use Phase - Professional Use of Laundry products ; Laundry aid (non-gasing); Semi automatic process (AISE-P111); Use Phase - Professional Use of Dishwash products; Dishwash product; Semi-Automatic process (AISE-P203); Use Phase - Professional Use of Dishwash products; Rinse aid; Semi-Automatic process (AISE-P204); Use Phase - Professional Use of Medical Devices; Medical devices ; Semi-automatic process (AISE-P1101); Use Phase	PROC 1
CS 3: Professional Use of Dishwash products; Dishwash and rinse aid product; Automatic process (AISE-P202); Use Phase	PROC 2
CS 4: Professional Use of Laundry products ; Laundry aid (non-gasing); Manual process (AISE-P112); Use Phase	PROC 4
CS 5: Professional Use of Vehicle cleaning Products; Car wash product; Semi-Automatic process (AISE-P701); Use Phase - Professional Use of Vehicle cleaning Products; Dewaxing product; Semi-Automatic process (AISE-P704); Use Phase	PROC 4
CS 6: Professional Use of Laundry products ; Laundry detergent; Semi automatic process (AISE-P102); Preparatory Phase - Professional Use of Laundry products ; Conditioner (softener/starch); Semi automatic process (AISE-P105); Preparatory Phase - Professional Use of Laundry products ; Laundry aid (gasing); Semi automatic process (AISE-P108); Preparatory Phase - Professional Use of Laundry products ; Laundry aid (non-gasing); Semi automatic process (AISE-P111); Preparatory Phase - Professional Use of Laundry products ; Laundry aid (non-gasing); Manual process (AISE-P112); Preparatory Phase - Professional Use of Dishwash products; Dishwash product; Semi-Automatic process (AISE-P203); Preparatory Phase - Professional Use of Dishwash products; Rinse aid; Semi-Automatic process (AISE-P204); Preparatory Phase - Professional Use of	PROC 8a

General surface cleaning products; Periodic cleaning by dipping (AISE-P309); Preparatory Phase - Professional Use of Medical Devices; Medical devices ; Semi-automatic process (AISE-P1101); Preparatory Phase - Professional Use of Medical Devices; Medical devices ; Dipping process (AISE-P1102); Preparatory Phase	
CS 7: Professional Use of Façade/surface Cleaning Products; Façade/surface cleaner; High pressure process (AISE-P901); Preparatory Phase - Professional Use of Façade/surface Cleaning Products; Façade/surface cleaner; Medium pressure process (AISE-P902); Preparatory Phase	PROC 8a
CS 8: Professional Use of Dishwash products; Dishwash product; Manual process (AISE-P201); Preparatory Phase	PROC 8a
CS 9: Professional Use of Floor care products; Floor cleaner; Manual process (AISE-P403); Preparatory Phase - Professional Use of General surface cleaning products; General purpose cleaner; Manual process (AISE-P301); Preparatory Phase - Professional Use of General surface cleaning products; General purpose cleaner; Spray and wipe; manual process (AISE-P302); Preparatory Phase - Professional Use of General surface cleaning products; Kitchen cleaner; Manual process (AISE-P303); Preparatory Phase - Professional Use of General surface cleaning products; Kitchen cleaner; Spray and wipe manual process (AISE-P304); Preparatory Phase - Professional Use of General surface cleaning products; Sanitary cleaner; Manual process (AISE-P305); Preparatory Phase - Professional Use of General surface cleaning products; Sanitary cleaner; Spray and wipe manual process (AISE-P306); Preparatory Phase - Professional Use of General surface cleaning products; Glass cleaner; Manual process (AISE-P312); Preparatory Phase - Professional Use of Floor care products; Floor cleaner; Semi-Automatic process (AISE-P401); Preparatory Phase - Professional Use of Floor care products; Floor cleaner; Spray and wipe manual process (AISE-P402); Preparatory Phase - Professional Use of Floor care products; Carpet cleaner; Manual process (AISE-P409); Preparatory Phase - Professional Use of Floor care products; Carpet cleaner; Semi-Automatic process (AISE-P410); Preparatory Phase - Professional Use of pharmacos products; Animal care; Manual process (AISE-P808); Preparatory Phase - Professional Use of Medical Devices; Medical devices ; Spray and wipe process (AISE-P1104); Preparatory Phase	PROC 8a
CS 10: Professional Use of Vehicle cleaning Products; Car wash product; Semi-Automatic process (AISE-P701); Preparatory Phase - Professional Use of Vehicle cleaning Products; Car wash product; Spray - Manual process (AISE-P702); Preparatory Phase - Professional Use of Vehicle cleaning Products; Dewaxing product; Semi-Automatic process (AISE-P704); Preparatory Phase - Professional Use of Laundry products ; Laundry detergent; Manual process (AISE-P103); Preparatory Phase - Professional Use of General surface cleaning products; Descaling agent; Spray and rinse manual process (AISE-P308); Preparatory	PROC 8a

Phase - Professional Use of General surface cleaning products; Surface disinfectant; Manual process (AISE-P314); Preparatory Phase - Professional Use of General surface cleaning products; Surface disinfectant; Spray and rinse manual process (AISE-P315); Preparatory Phase - Professional Use of Floor care products; Floor stripper; Manual process (AISE-P404); Preparatory Phase - Professional Use of Floor care products; Floor stripper; Semi-Automatic process (AISE-P405); Preparatory Phase - Professional Use of Medical Devices; Medical devices ; Manual process (AISE-P1103); Preparatory Phase	
CS 11: Professional Use of Vehicle cleaning Products; Car wash product; Spray and Wipe manual process (AISE-P703); Preparatory Phase - Professional Use of Vehicle cleaning Products; Boat cleaner; Manual process (AISE-P705); Preparatory Phase - Professional Use of Vehicle cleaning Products; Boat cleaner; Spray and wipe manual process (AISE-P706); Preparatory Phase	PROC 8a
CS 12: Professional Use of Dishwash products; Dishwash and rinse aid product; Automatic process (AISE-P202); Preparatory Phase	PROC 8b
CS 13: Professional Use of General surface cleaning products; Oven/Grill Cleaner; Manual process (AISE-P310); Use Phase	PROC 10
CS 14: Professional Use of Laundry products ; Laundry detergent; Manual process (AISE-P103); Use Phase - Professional Use of Dishwash products; Dishwash product; Manual process (AISE-P201); Use Phase - Professional Use of General surface cleaning products; Wet wipes; Manual process (AISE-P317); Use Phase - Professional Use of Floor care products; Carpet pre-spotters; Brush manual process (AISE-P411); Use Phase	PROC 10
CS 15: Professional Use of General surface cleaning products; Descaling agent; Manual process (AISE-P307); Use Phase	PROC 10
CS 16: Professional Use of Floor care products; Floor cleaner; Manual process (AISE-P403); Use Phase - Professional Use of Laundry products ; Prespotter/Stain remover; Manual process (AISE-P113); Use Phase - Professional Use of General surface cleaning products; General purpose cleaner; Manual process (AISE-P301); Use Phase - Professional Use of General surface cleaning products; General purpose cleaner; Wipe; manual process (AISE-P302); Use Phase - Professional Use of General surface cleaning products; Kitchen cleaner; Manual process (AISE-P303); Use Phase - Professional Use of General surface cleaning products; Kitchen cleaner; Wipe manual process (AISE-P304); Use Phase - Professional Use of General surface cleaning products; Sanitary cleaner; Manual process (AISE-P305); Use Phase	PROC 10
CS 17: Professional Use of General surface cleaning products; Sanitary cleaner; Wipe manual process (AISE-P306); Use Phase - Professional Use of General	PROC 10

surface cleaning products; Glass cleaner; Manual process (AISE-P312); Use Phase - Professional Use of General surface cleaning products; Glass cleaner ; Wipe manual process (AISE-P313); Use Phase - Professional Use of General surface cleaning products; Surface disinfectant; Manual process (AISE-P314); Use Phase - Professional Use of General surface cleaning products; Surface disinfectant; Rinse manual process (AISE-P315); Use Phase - Professional Use of General surface cleaning products; Metal cleaning agent (including silver and copper polishes); Manual process (AISE-P316); Use Phase - Professional Use of Floor care products; Floor cleaner; Semi-Automatic process (AISE-P401); Use Phase - Professional Use of Floor care products; Floor cleaner; Wipe manual process (AISE-P402); Use Phase - Professional Use of Floor care products; Floor stripper; Semi-Automatic process (AISE-P405); Use Phase - Professional Use of Floor care products; Carpet cleaner; Manual process (AISE-P409); Use Phase - Professional Use of Floor care products; Carpet cleaner; Semi-Automatic process (AISE-P410); Use Phase - Professional Use of pharmacos products; Animal care; Manual process (AISE-P808); Use Phase - Professional Use of Medical Devices; Medical devices ; Manual process (AISE-P1103); Use Phase - Professional Use of Medical Devices; Medical devices ; Wipe process (AISE-P1104); Use Phase	
CS 18: Professional Use of General surface cleaning products; Descaling agent; Rinse manual process (AISE-P308); Use Phase - Professional Use of General surface cleaning products; Oven/Grill Cleaner; Wipe manual process (AISE-P311); Use Phase - Professional Use of Floor care products; Floor stripper; Manual process (AISE-P404); Use Phase	PROC 10
CS 19: Professional Use of Vehicle cleaning Products; Car wash product; Wipe manual process (AISE-P703); Use Phase - Professional Use of Vehicle cleaning Products; Boat cleaner; Manual process (AISE-P705); Use Phase - Professional Use of Vehicle cleaning Products; Boat cleaner; Wipe manual process (AISE-P706); Use Phase	PROC 10
CS 20: Professional Use of Façade/surface Cleaning Products; Façade/surface cleaner; Medium pressure process (AISE-P902); Use Phase	PROC 10
CS 21: Professional Use of Vehicle cleaning Products; Car wash product; Spray - Manual process (AISE-P702); Use Phase - Professional Use of Laundry products ; Prespotter/Stain remover; Manual process (AISE-P113); Use Phase - Professional Use of General surface cleaning products; General purpose cleaner; Spray manual process (AISE-P302); Use Phase - Professional Use of General surface cleaning products; Kitchen cleaner; Spray manual process (AISE-P304); Use Phase - Professional Use of General surface cleaning products; Sanitary cleaner; Spray manual process (AISE-P306); Use Phase - Professional Use of General surface cleaning products; Glass cleaner; Spray manual process (AISE-P313); Use Phase - Professional Use of General surface cleaning products;	PROC 11

Surface disinfectant; Spray manual process (AISE-P315); Use Phase - Professional Use of Floor care products; Floor cleaner; Spray manual process (AISE-P402); Use Phase - Professional Use of Floor care products; Carpet pre-spotters; Spray manual process (AISE-P411); Use Phase - Professional Use of Medical Devices; Medical devices ; Spray process (AISE-P1104); Use Phase	
CS 22: Professional Use of General surface cleaning products; Descaling agent; Spray manual process (AISE-P308); Use Phase - Professional Use of General surface cleaning products; Oven/Grill Cleaner; Spray manual process (AISE-P311); Use Phase	PROC 11
CS 23: Professional Use of Vehicle cleaning Products; Car wash product; Spray manual process (AISE-P703); Use Phase - Professional Use of Vehicle cleaning Products; Boat cleaner; Spray manual process (AISE-P706); Use Phase	PROC 11
CS 24: Professional Use of Façade/surface Cleaning Products; Façade/surface cleaner; Medium pressure process (AISE-P902); Use Phase	PROC 11
CS 25: Professional Use of Façade/surface Cleaning Products; Façade/surface cleaner; High pressure process (AISE-P901); Use Phase	PROC 11
CS 26: Professional Use of Maintenance Products; Drain unblocker; Manual process (AISE-P606); Use Phase - Professional Use of Maintenance Products; Drain cleaner; Manual process (AISE-P607); Use Phase	PROC 13
CS 27: Professional Use of General surface cleaning products; Periodic cleaning by dipping (AISE-P309); Use Phase - Professional Use of Medical Devices; Medical devices ; Dipping process (AISE-P1102); Use Phase	PROC 13

5.2. Conditions of use affecting exposure

5.2.1. Control of environmental exposure: GES4 - Professional end-use of washing and cleaning products (indoor use) (ERC 8d)

Conditions and measures related to treatment of waste (including article waste)
Dispose of waste or used sacks/containers according to local regulations.

5.2.2. Control of worker exposure: Professional Use of Laundry products ; Laundry detergent; Semi automatic process (AISE-P102); Use Phase - Professional Use of Laundry products ; Conditioner (softener/starch); Semi automatic process (AISE-P105); Use Phase - Professional Use of Laundry products ; Laundry aid (gasing); Semi automatic process (AISE-P108); Use Phase - Professional Use of Laundry products ; Laundry aid (non-gasing); Semi automatic process (AISE-P111); Use Phase - Professional Use of Dishwash products; Dishwash product; Semi-Automatic process (AISE-P203); Use Phase - Professional Use of Dishwash products; Rinse aid; Semi-

Automatic process (AISE-P204); Use Phase - Professional Use of Medical Devices; Medical devices ; Semi-automatic process (AISE-P1101); Use Phase (PROC 1)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Covers daily exposures up to 8 hours.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Use in closed process, no likelihood of exposure
Basic (professional) exposure controls assumed.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.2.3. Control of worker exposure: Professional Use of Dishwash products; Dishwash and rinse aid product; Automatic process (AISE-P202); Use Phase (PROC 2)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 15 minutes.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Use in closed, continuous process with occasional controlled exposure
Basic (professional) exposure controls assumed.
Other conditions affecting workers exposure
Indoor use

Assumes process temperature up to 40.0 °C

5.2.4. Control of worker exposure: Professional Use of Laundry products ; Laundry aid (non-gasing); Manual process (AISE-P112); Use Phase (PROC 4)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 15 minutes.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Use in semi-closed process with opportunity for exposure
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.2.5. Control of worker exposure: Professional Use of Vehicle cleaning Products; Car wash product; Semi-Automatic process (AISE-P701); Use Phase - Professional Use of Vehicle cleaning Products; Dewaxing product; Semi-Automatic process (AISE-P704); Use Phase (PROC 4)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Covers daily exposures up to 8 hours.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .

Use in semi-closed process with opportunity for exposure
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.2.6. Control of worker exposure: Professional Use of Laundry products ; Laundry detergent; Semi automatic process (AISE-P102); Preparatory Phase - Professional Use of Laundry products ; Conditioner (softener/starch); Semi automatic process (AISE-P105); Preparatory Phase - Professional Use of Laundry products ; Laundry aid (gasing); Semi automatic process (AISE-P108); Preparatory Phase - Professional Use of Laundry products ; Laundry aid (non-gasing); Semi automatic process (AISE-P111); Preparatory Phase - Professional Use of Laundry products ; Laundry aid (non-gasing); Manual process (AISE-P112); Preparatory Phase - Professional Use of Dishwash products; Dishwash product; Semi-Automatic process (AISE-P203); Preparatory Phase - Professional Use of Dishwash products; Rinse aid; Semi-Automatic process (AISE-P204); Preparatory Phase - Professional Use of General surface cleaning products; Periodic cleaning by dipping (AISE-P309); Preparatory Phase - Professional Use of Medical Devices; Medical devices ; Semi-automatic process (AISE-P1101); Preparatory Phase - Professional Use of Medical Devices; Medical devices ; Dipping process (AISE-P1102); Preparatory Phase (PROC 8a)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 15 minutes.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Basic (professional) exposure controls assumed.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.2.7. Control of worker exposure: Professional Use of Façade/surface Cleaning Products; Façade/surface cleaner; High pressure process (AISE-P901); Preparatory Phase - Professional Use of Façade/surface Cleaning Products; Façade/surface cleaner; Medium pressure process (AISE-P902); Preparatory Phase (PROC 8a)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 15 minutes.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.2.8. Control of worker exposure: Professional Use of Dishwash products; Dishwash product; Manual process (AISE-P201); Preparatory Phase (PROC 8a)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 15 minutes.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.2.9. Control of worker exposure: Professional Use of Floor care products; Floor cleaner; Manual process (AISE-P403); Preparatory Phase - Professional Use of General surface cleaning products; General purpose cleaner; Manual process (AISE-P301); Preparatory Phase - Professional Use of General surface cleaning products; General purpose cleaner; Spray and wipe; manual process (AISE-P302); Preparatory Phase - Professional Use of General surface cleaning products; Kitchen cleaner; Manual process (AISE-P303); Preparatory Phase - Professional Use of General surface cleaning products; Kitchen cleaner; Spray and wipe manual process (AISE-P304); Preparatory Phase - Professional Use of General surface cleaning products; Sanitary cleaner; Manual process (AISE-P305); Preparatory Phase - Professional Use of General surface cleaning products; Sanitary cleaner; Spray and wipe manual process (AISE-P306); Preparatory Phase - Professional Use of General surface cleaning products; Glass cleaner; Manual process (AISE-P312); Preparatory Phase - Professional Use of Floor care products; Floor cleaner; Semi-Automatic process (AISE-P401); Preparatory Phase - Professional Use of Floor care products; Floor cleaner; Spray and wipe manual process (AISE-P402); Preparatory Phase - Professional Use of Floor care products; Carpet cleaner; Manual process (AISE-P409); Preparatory Phase - Professional Use of

Floor care products; Carpet cleaner; Semi-Automatic process (AISE-P410); Preparatory Phase - Professional Use of pharmacos products; Animal care; Manual process (AISE-P808); Preparatory Phase - Professional Use of Medical Devices; Medical devices ; Spray and wipe process (AISE-P1104); Preparatory Phase (PROC 8a)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.2.10. Control of worker exposure: Professional Use of Vehicle cleaning Products; Car wash product; Semi-Automatic process (AISE-P701); Preparatory Phase - Professional Use of Vehicle cleaning Products; Car wash product; Spray - Manual process (AISE-P702); Preparatory Phase - Professional Use of Vehicle cleaning Products; Dewaxing product; Semi-Automatic process (AISE-P704); Preparatory Phase - Professional Use of Laundry products ; Laundry detergent; Manual process (AISE-P103); Preparatory Phase - Professional Use of General surface cleaning products; Descaling agent; Spray and rinse manual process (AISE-P308); Preparatory Phase - Professional Use of General surface cleaning products; Surface disinfectant; Manual process (AISE-P314); Preparatory Phase - Professional Use of General surface cleaning products; Surface disinfectant; Spray and rinse manual process (AISE-P315); Preparatory Phase - Professional Use of Floor care products; Floor stripper; Manual process (AISE-P404); Preparatory Phase - Professional Use of Floor care products; Floor stripper; Semi-Automatic process (AISE-P405); Preparatory Phase - Professional Use of Medical Devices; Medical devices ; Manual process (AISE-P1103); Preparatory Phase (PROC

8a)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.2.11. Control of worker exposure: Professional Use of Vehicle cleaning Products; Car wash product; Spray and Wipe manual process (AISE-P703); Preparatory Phase - Professional Use of Vehicle cleaning Products; Boat cleaner; Manual process (AISE-P705); Preparatory Phase - Professional Use of Vehicle cleaning Products; Boat cleaner; Spray and wipe manual process (AISE-P706); Preparatory Phase (PROC 8a)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Basic (professional) exposure controls assumed.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Ensure operation is undertaken outdoors.
Assumes process temperature up to 40.0 °C

5.2.12. Control of worker exposure: Professional Use of Dishwash products; Dishwash and rinse aid product; Automatic process (AISE-P202); Preparatory Phase (PROC 8b)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 15 minutes.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Use in semi-closed process with opportunity for exposure
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.2.13. Control of worker exposure: Professional Use of General surface cleaning products; Oven/Grill Cleaner; Manual process (AISE-P310); Use Phase (PROC 10)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.2.14. Control of worker exposure: Professional Use of Laundry products ; Laundry detergent; Manual process (AISE-P103); Use Phase - Professional Use of Dishwash products; Dishwash product; Manual process (AISE-P201); Use Phase - Professional Use of General surface cleaning products; Wet wipes; Manual process (AISE-P317); Use Phase - Professional Use of Floor care products; Carpet pre-spotters; Brush manual process (AISE-P411); Use Phase (PROC 10)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .

Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.2.15. Control of worker exposure: Professional Use of General surface cleaning products; Descaling agent; Manual process (AISE-P307); Use Phase (PROC 10)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.2.16. Control of worker exposure: Professional Use of Floor care products; Floor cleaner; Manual process (AISE-P403); Use Phase - Professional Use of Laundry products ; Prespotter/Stain remover; Manual process (AISE-P113); Use Phase - Professional Use of General surface cleaning products; General purpose cleaner; Manual process (AISE-P301); Use Phase - Professional Use of General surface cleaning products; General purpose cleaner; Wipe; manual process (AISE-P302); Use Phase - Professional Use of General surface cleaning products; Kitchen cleaner; Manual process (AISE-P303); Use Phase - Professional Use of General surface cleaning products; Kitchen cleaner; Wipe manual process (AISE-P304); Use Phase - Professional Use of General surface cleaning products; Sanitary cleaner; Manual process (AISE-P305); Use Phase (PROC 10)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 4 hours.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.2.17. Control of worker exposure: Professional Use of General surface cleaning products; Sanitary cleaner; Wipe manual process (AISE-P306); Use Phase - Professional Use of General surface cleaning products; Glass cleaner; Manual process (AISE-P312); Use Phase - Professional Use of General surface cleaning products; Glass cleaner ; Wipe manual process (AISE-P313); Use Phase - Professional Use of General surface cleaning products; Surface disinfectant; Manual process (AISE-P314); Use Phase - Professional Use of General surface cleaning products; Surface disinfectant; Rinse manual process (AISE-P315); Use Phase - Professional Use of General surface cleaning products; Metal

cleaning agent (including silver and copper polishes); Manual process (AISE-P316); Use Phase - Professional Use of Floor care products; Floor cleaner; Semi-Automatic process (AISE-P401); Use Phase - Professional Use of Floor care products; Floor cleaner; Wipe manual process (AISE-P402); Use Phase - Professional Use of Floor care products; Floor stripper; Semi-Automatic process (AISE-P405); Use Phase - Professional Use of Floor care products; Carpet cleaner; Manual process (AISE-P409); Use Phase - Professional Use of Floor care products; Carpet cleaner; Semi-Automatic process (AISE-P410); Use Phase - Professional Use of pharmacos products; Animal care; Manual process (AISE-P808); Use Phase - Professional Use of Medical Devices; Medical devices ; Manual process (AISE-P1103); Use Phase - Professional Use of Medical Devices; Medical devices ; Wipe process (AISE-P1104); Use Phase (PROC 10)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 4 hours.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.2.18. Control of worker exposure: Professional Use of General surface cleaning products; Descaling agent; Rinse manual process (AISE-P308); Use Phase - Professional Use of General surface cleaning products; Oven/Grill Cleaner; Wipe manual process (AISE-P311); Use Phase - Professional Use of Floor care products; Floor stripper; Manual process (AISE-P404); Use Phase (PROC 10)

Product (article) characteristics

Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 4 hours.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.2.19. Control of worker exposure: Professional Use of Vehicle cleaning Products; Car wash product; Wipe manual process (AISE-P703); Use Phase - Professional Use of Vehicle cleaning Products; Boat cleaner; Manual process (AISE-P705); Use Phase - Professional Use of Vehicle cleaning Products; Boat cleaner; Wipe manual process (AISE-P706); Use Phase (PROC 10)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 4 hours.
Technical and organisational conditions and measures
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Ensure operation is undertaken outdoors.
Assumes process temperature up to 40.0 °C

5.2.20. Control of worker exposure: Professional Use of Façade/surface Cleaning Products; Façade/surface cleaner; Medium pressure process (AISE-P902); Use Phase (PROC 10)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 4 hours.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.2.21. Control of worker exposure: Professional Use of Vehicle cleaning Products; Car wash product; Spray - Manual process (AISE-P702); Use Phase - Professional Use of

Laundry products ; Prespotter/Stain remover; Manual process (AISE-P113); Use Phase - Professional Use of General surface cleaning products; General purpose cleaner; Spray manual process (AISE-P302); Use Phase - Professional Use of General surface cleaning products; Kitchen cleaner; Spray manual process (AISE-P304); Use Phase - Professional Use of General surface cleaning products; Sanitary cleaner; Spray manual process (AISE-P306); Use Phase - Professional Use of General surface cleaning products; Glass cleaner; Spray manual process (AISE-P313); Use Phase - Professional Use of General surface cleaning products; Surface disinfectant; Spray manual process (AISE-P315); Use Phase - Professional Use of Floor care products; Floor cleaner; Spray manual process (AISE-P402); Use Phase - Professional Use of Floor care products; Carpet pre-spotters; Spray manual process (AISE-P411); Use Phase - Professional Use of Medical Devices; Medical devices ; Spray process (AISE-P1104); Use Phase (PROC 11)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Local exhaust ventilation - efficiency of at least 80.0 %
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.2.22. Control of worker exposure: Professional Use of General surface cleaning products; Descaling agent; Spray manual process (AISE-P308); Use Phase - Professional Use of General surface cleaning products; Oven/Grill Cleaner; Spray manual process (AISE-P311); Use Phase (PROC 11)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Local exhaust ventilation - efficiency of at least 80.0 %
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.2.23. Control of worker exposure: Professional Use of Vehicle cleaning Products; Car wash product; Spray manual process (AISE-P703); Use Phase - Professional Use of Vehicle cleaning Products; Boat cleaner; Spray manual process (AISE-P706); Use Phase (PROC 11)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .

Local exhaust ventilation - efficiency of at least 80.0 %
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.2.24. Control of worker exposure: Professional Use of Façade/surface Cleaning Products; Façade/surface cleaner; Medium pressure process (AISE-P902); Use Phase (PROC 11)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Local exhaust ventilation - efficiency of at least 80.0 %
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.

Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.2.25. Control of worker exposure: Professional Use of Façade/surface Cleaning Products; Façade/surface cleaner; High pressure process (AISE-P901); Use Phase (PROC 11)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 4 hours.
Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) .
Local exhaust ventilation - efficiency of at least 80.0 %
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.2.26. Control of worker exposure: Professional Use of Maintenance Products; Drain unblocker; Manual process (AISE-P606); Use Phase - Professional Use of Maintenance Products; Drain cleaner; Manual process (AISE-P607); Use Phase (PROC 13)

Product (article) characteristics

Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 15 minutes.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.2.27. Control of worker exposure: Professional Use of General surface cleaning products; Periodic cleaning by dipping (AISE-P309); Use Phase - Professional Use of Medical Devices; Medical devices ; Dipping process (AISE-P1102); Use Phase (PROC 13)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Local exhaust ventilation - efficiency of at least 80.0 %
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.

Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

5.3. Exposure estimation and reference to its source

5.3.1. Environmental release and exposure: GES4 - Professional end-use of washing and cleaning products (indoor use) (ERC 8d)

Release route	Release rate	Release estimation method
Water	0.02 kg/day	ERC based
Air	0.02 kg/day	ERC based
Soil	0.004 kg/day	ERC based

Protection target	Exposure estimate (based on: EUSES 2.1.2)	RCR
Freshwater	2.247E-4 mg/L	0.11
Sediment (freshwater)	0.007 mg/kg dw	0.01
Marine water	2.106E-5 mg/L	0.103
Sediment (marine water)	6.241E-4 mg/kg dw	< 0.01
Predator (freshwater)	0.142 mg/kg ww	< 0.01
Predator (marine water)	0.013 mg/kg ww	< 0.01
Top predator (marine water)	0.009 mg/kg ww	< 0.01
Sewage treatment plant	0.001 mg/L	< 0.01
Agricultural soil	6.878E-4 mg/kg dw	< 0.01
Predator (terrestrial)	1.886E-4 mg/kg ww	< 0.01
Man via environment - Inhalation	7.491E-6 mg/m³	< 0.01
Man via environment - Oral	3.233E-4 mg/kg bw/day	< 0.01

5.3.2. Worker exposure: Professional Use of Laundry products ; Laundry detergent; Semi automatic process (AISE-P102); Use Phase - Professional Use of Laundry products ; Conditioner (softener/starch); Semi automatic process (AISE-P105); Use Phase - Professional Use of Laundry products ; Laundry aid (gasing); Semi automatic process (AISE-P108); Use Phase - Professional Use of Laundry products ; Laundry aid (non-gasing); Semi automatic process (AISE-P111); Use Phase - Professional Use of Dishwash products; Dishwash product; Semi-Automatic process (AISE-P203); Use Phase - Professional Use of Dishwash products; Rinse aid; Semi-Automatic process (AISE-P204); Use Phase - Professional Use of Medical Devices; Medical devices ; Semi-automatic process (AISE-P1101); Use Phase (PROC 1)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.006 mg/m³ (TRA Workers 3.0)	< 0.01
Dermal, systemic, long-term	0.003 mg/kg bw/day (TRA Workers 3.0)	< 0.01
Combined routes, systemic, long-term		< 0.01

5.3.3. Worker exposure: Professional Use of Dishwash products; Dishwash and rinse aid product; Automatic process (AISE-P202); Use Phase (PROC 2)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.321 mg/m³ (TRA Workers 3.0)	0.091
Dermal, systemic, long-term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.137
Combined routes, systemic, long-term		0.228

5.3.4. Worker exposure: Professional Use of Laundry products ; Laundry aid (non-gasing); Manual process (AISE-P112); Use Phase (PROC 4)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.643 mg/m³ (TRA Workers 3.0)	0.183
Dermal, systemic, long-term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.137
Combined routes, systemic, long-term		0.32

5.3.5. Worker exposure: Professional Use of Vehicle cleaning Products; Car wash product; Semi-Automatic process (AISE-P701); Use Phase - Professional Use of Vehicle cleaning Products; Dewaxing product; Semi-Automatic process (AISE-P704); Use Phase (PROC 4)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.45 mg/m³ (TRA Workers 3.0)	0.128
Dermal, systemic, long-term	0.069 mg/kg bw/day (TRA Workers 3.0)	0.069
Combined routes, systemic, long-term		0.196

5.3.6. Worker exposure: Professional Use of Laundry products ; Laundry detergent; Semi automatic process (AISE-P102); Preparatory Phase - Professional Use of Laundry products ; Conditioner (softener/starch); Semi automatic process (AISE-P105); Preparatory Phase - Professional Use of Laundry products ; Laundry aid (gasing); Semi automatic process (AISE-P108); Preparatory Phase - Professional Use of Laundry products ; Laundry aid (non-gasing); Semi automatic process (AISE-P111); Preparatory Phase - Professional Use of Laundry products ; Laundry aid (non-gasing); Manual process (AISE-P112); Preparatory Phase - Professional Use of Dishwash products; Dishwash product; Semi-Automatic process (AISE-P203); Preparatory Phase - Professional Use of Dishwash products; Rinse aid; Semi-Automatic process (AISE-P204); Preparatory Phase - Professional Use of General surface cleaning products; Periodic cleaning by dipping (AISE-P309); Preparatory Phase - Professional Use of Medical Devices; Medical devices ; Semi-automatic process (AISE-P1101); Preparatory Phase - Professional Use of Medical Devices; Medical devices ; Dipping process (AISE-P1102); Preparatory Phase (PROC 8a)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.161 mg/m³ (TRA Workers 3.0)	0.046
Dermal, systemic, long-term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.137
Combined routes, systemic, long-term		0.183

5.3.7. Worker exposure: Professional Use of Façade/surface Cleaning Products; Façade/surface cleaner; High pressure process (AISE-P901); Preparatory Phase - Professional Use of Façade/surface Cleaning Products; Façade/surface cleaner; Medium pressure process (AISE-P902); Preparatory Phase (PROC 8a)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.161 mg/m³ (TRA Workers 3.0)	0.046
Dermal, systemic, long-term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.274
Combined routes, systemic, long-term		0.32

5.3.8. Worker exposure: Professional Use of Dishwash products; Dishwash product; Manual process (AISE-P201); Preparatory Phase (PROC 8a)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.161 mg/m³ (TRA Workers 3.0)	0.046
Dermal, systemic, long-term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.137
Combined routes, systemic, long-term		0.183

5.3.9. Worker exposure: Professional Use of Floor care products; Floor cleaner; Manual process (AISE-P403); Preparatory Phase - Professional Use of General surface cleaning products; General purpose cleaner; Manual process (AISE-P301); Preparatory Phase - Professional Use of General surface cleaning products; General purpose cleaner; Spray and wipe; manual process (AISE-P302); Preparatory Phase - Professional Use of General surface cleaning products; Kitchen cleaner; Manual process (AISE-P303); Preparatory Phase - Professional Use of General surface cleaning products; Kitchen cleaner; Spray and wipe manual process (AISE-P304); Preparatory Phase - Professional Use of General surface cleaning products; Sanitary cleaner; Manual process (AISE-P305); Preparatory Phase - Professional Use of General surface cleaning products; Sanitary cleaner; Spray and wipe manual process (AISE-P306); Preparatory Phase - Professional Use of General surface cleaning products; Glass cleaner; Manual process (AISE-P312); Preparatory Phase - Professional Use of Floor care products; Floor cleaner; Semi-Automatic process (AISE-P401); Preparatory Phase - Professional Use of Floor care products; Floor cleaner; Spray and wipe manual process (AISE-P402); Preparatory Phase - Professional Use of Floor care products; Carpet cleaner; Manual process (AISE-P409); Preparatory Phase - Professional Use of Floor care products; Carpet cleaner; Semi-Automatic process (AISE-P410); Preparatory Phase - Professional Use of pharmacos products; Animal care; Manual process (AISE-P808); Preparatory Phase - Professional Use of Medical Devices; Medical devices ; Spray and wipe process (AISE-P1104); Preparatory Phase (PROC 8a)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.321 mg/m³ (TRA Workers 3.0)	0.091
Dermal, systemic, long-term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.137
Combined routes, systemic, long-term		0.228

5.3.10. Worker exposure: Professional Use of Vehicle cleaning Products; Car wash product; Semi-Automatic process (AISE-P701); Preparatory Phase - Professional Use of Vehicle cleaning Products; Car wash product; Spray - Manual process (AISE-P702); Preparatory Phase - Professional Use of Vehicle cleaning Products; Dewaxing product; Semi-Automatic process (AISE-P704); Preparatory Phase - Professional Use of Laundry products ; Laundry detergent; Manual process (AISE-P103); Preparatory Phase - Professional Use of General surface cleaning products; Descaling agent; Spray and rinse manual process (AISE-P308); Preparatory Phase - Professional Use of General surface cleaning products; Surface disinfectant; Manual process (AISE-P314); Preparatory Phase - Professional Use of General surface cleaning products; Surface disinfectant;

Spray and rinse manual process (AISE-P315); Preparatory Phase - Professional Use of Floor care products; Floor stripper; Manual process (AISE-P404); Preparatory Phase - Professional Use of Floor care products; Floor stripper; Semi-Automatic process (AISE-P405); Preparatory Phase - Professional Use of Medical Devices; Medical devices ; Manual process (AISE-P1103); Preparatory Phase (PROC 8a)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.321 mg/m³ (TRA Workers 3.0)	0.091
Dermal, systemic, long-term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.137
Combined routes, systemic, long-term		0.228

5.3.11. Worker exposure: Professional Use of Vehicle cleaning Products; Car wash product; Spray and Wipe manual process (AISE-P703); Preparatory Phase - Professional Use of Vehicle cleaning Products; Boat cleaner; Manual process (AISE-P705); Preparatory Phase - Professional Use of Vehicle cleaning Products; Boat cleaner; Spray and wipe manual process (AISE-P706); Preparatory Phase (PROC 8a)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.225 mg/m³ (TRA Workers 3.0)	0.064
Dermal, systemic, long-term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.137
Combined routes, systemic, long-term		0.201

5.3.12. Worker exposure: Professional Use of Dishwash products; Dishwash and rinse aid product; Automatic process (AISE-P202); Preparatory Phase (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.643 mg/m³ (TRA Workers 3.0)	0.183
Dermal, systemic, long-term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.274
Combined routes, systemic, long-term		0.457

5.3.13. Worker exposure: Professional Use of General surface cleaning products; Oven/Grill Cleaner; Manual process (AISE-P310); Use Phase (PROC 10)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.225 mg/m³ (TRA Workers 3.0)	0.064
Dermal, systemic, long-term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.274

Route of exposure and type of effects	Exposure estimate	RCR
Combined routes, systemic, long-term		0.338

5.3.14. Worker exposure: Professional Use of Laundry products ; Laundry detergent; Manual process (AISE-P103); Use Phase - Professional Use of Dishwash products; Dishwash product; Manual process (AISE-P201); Use Phase - Professional Use of General surface cleaning products; Wet wipes; Manual process (AISE-P317); Use Phase - Professional Use of Floor care products; Carpet pre-spotters; Brush manual process (AISE-P411); Use Phase (PROC 10)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.321 mg/m³ (TRA Workers 3.0)	0.091
Dermal, systemic, long-term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.274
Combined routes, systemic, long-term		0.366

5.3.15. Worker exposure: Professional Use of General surface cleaning products; Descaling agent; Manual process (AISE-P307); Use Phase (PROC 10)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.321 mg/m³ (TRA Workers 3.0)	0.091
Dermal, systemic, long-term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.274
Combined routes, systemic, long-term		0.366

5.3.16. Worker exposure: Professional Use of Floor care products; Floor cleaner; Manual process (AISE-P403); Use Phase - Professional Use of Laundry products ; Prespotter/Stain remover; Manual process (AISE-P113); Use Phase - Professional Use of General surface cleaning products; General purpose cleaner; Manual process (AISE-P301); Use Phase - Professional Use of General surface cleaning products; General purpose cleaner; Wipe; manual process (AISE-P302); Use Phase - Professional Use of General surface cleaning products; Kitchen cleaner; Manual process (AISE-P303); Use Phase - Professional Use of General surface cleaning products; Kitchen cleaner; Wipe manual process (AISE-P304); Use Phase - Professional Use of General surface cleaning products; Sanitary cleaner; Manual process (AISE-P305); Use Phase (PROC 10)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.675 mg/m³ (TRA Workers 3.0)	0.192
Dermal, systemic, long-term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.274
Combined routes, systemic, long-term		0.466

5.3.17. Worker exposure: Professional Use of General surface cleaning products; Sanitary cleaner; Wipe manual process (AISE-P306); Use Phase - Professional Use of General surface cleaning products; Glass cleaner; Manual process (AISE-P312); Use Phase - Professional Use of General surface cleaning products; Glass cleaner ; Wipe manual process (AISE-P313); Use Phase - Professional Use of General surface cleaning products; Surface disinfectant; Manual process (AISE-P314); Use Phase - Professional Use of General surface cleaning products; Surface disinfectant; Rinse manual process (AISE-P315); Use Phase - Professional Use of General surface cleaning products; Metal cleaning agent (including silver and copper polishes); Manual process (AISE-P316); Use Phase - Professional Use of Floor care products; Floor cleaner; Semi-Automatic process (AISE-P401); Use Phase - Professional Use of Floor care products; Floor cleaner; Wipe manual process (AISE-P402); Use Phase - Professional Use of Floor care products; Floor stripper; Semi-Automatic process (AISE-P405); Use Phase - Professional Use of Floor care products; Carpet cleaner; Manual process (AISE-P409); Use Phase - Professional Use of Floor care products; Carpet cleaner; Semi-Automatic process (AISE-P410); Use Phase - Professional Use of pharmacos products; Animal care; Manual process (AISE-P808); Use Phase - Professional Use of Medical Devices; Medical devices ; Manual process (AISE-P1103); Use Phase - Professional Use of Medical Devices; Medical devices ; Wipe process (AISE-P1104); Use Phase (PROC 10)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.675 mg/m³ (TRA Workers 3.0)	0.192
Dermal, systemic, long-term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.274
Combined routes, systemic, long-term		0.466

5.3.18. Worker exposure: Professional Use of General surface cleaning products; Descaling agent; Rinse manual process (AISE-P308); Use Phase - Professional Use of General surface cleaning products; Oven/Grill Cleaner; Wipe manual process (AISE-P311); Use Phase - Professional Use of Floor care products; Floor stripper; Manual process (AISE-P404); Use Phase (PROC 10)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.675 mg/m³ (TRA Workers 3.0)	0.192
Dermal, systemic, long-term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.274
Combined routes, systemic, long-term		0.466

5.3.19. Worker exposure: Professional Use of Vehicle cleaning Products; Car wash product; Wipe manual process (AISE-P703); Use Phase - Professional Use of Vehicle cleaning Products; Boat cleaner; Manual process (AISE-P705); Use Phase - Professional Use of Vehicle cleaning Products; Boat cleaner; Wipe manual process (AISE-P706); Use Phase (PROC 10)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.675 mg/m³ (TRA Workers 3.0)	0.192
Dermal, systemic, long-term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.274
Combined routes, systemic, long-term		0.466

5.3.20. Worker exposure: Professional Use of Façade/surface Cleaning Products; Façade/surface cleaner; Medium pressure process (AISE-P902); Use Phase (PROC 10)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.675 mg/m³ (TRA Workers 3.0)	0.192
Dermal, systemic, long-term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.274
Combined routes, systemic, long-term		0.466

5.3.21. Worker exposure: Professional Use of Vehicle cleaning Products; Car wash product; Spray - Manual process (AISE-P702); Use Phase - Professional Use of Laundry products ; Prespotter/Stain remover; Manual process (AISE-P113); Use Phase - Professional Use of General surface cleaning products; General purpose cleaner; Spray manual process (AISE-P302); Use Phase - Professional Use of General surface cleaning products; Kitchen cleaner; Spray manual process (AISE-P304); Use Phase - Professional Use of General surface cleaning products; Sanitary cleaner; Spray manual process (AISE-P306); Use Phase - Professional Use of General surface cleaning products; Glass cleaner; Spray manual process (AISE-P313); Use Phase - Professional Use of General surface cleaning products; Surface disinfectant; Spray manual process (AISE-P315); Use Phase - Professional Use of Floor care products; Floor cleaner; Spray manual process (AISE-P402); Use Phase - Professional Use of Floor care products; Carpet pre-spotters; Spray manual process (AISE-P411); Use Phase - Professional Use of Medical Devices; Medical devices ; Spray process (AISE-P1104); Use Phase (PROC 11)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.257 mg/m³ (TRA Workers 3.0)	0.073
Dermal, systemic, long-term	0.214 mg/kg bw/day (TRA Workers 3.0)	0.214
Combined routes, systemic, long-term		0.287

5.3.22. Worker exposure: Professional Use of General surface cleaning products; Descaling agent; Spray manual process (AISE-P308); Use Phase - Professional Use of General surface cleaning products; Oven/Grill Cleaner; Spray manual process (AISE-P311); Use Phase (PROC 11)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.18 mg/m³ (TRA Workers 3.0)	0.051
Dermal, systemic, long-term	0.214 mg/kg bw/day (TRA Workers 3.0)	0.214
Combined routes, systemic, long-term		0.265

5.3.23. Worker exposure: Professional Use of Vehicle cleaning Products; Car wash product; Spray manual process (AISE-P703); Use Phase - Professional Use of Vehicle cleaning Products; Boat cleaner; Spray manual process (AISE-P706); Use Phase (PROC 11)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.257 mg/m³ (TRA Workers 3.0)	0.073
Dermal, systemic, long-term	0.214 mg/kg bw/day (TRA Workers 3.0)	0.214
Combined routes, systemic, long-term		0.287

5.3.24. Worker exposure: Professional Use of Façade/surface Cleaning Products; Façade/surface cleaner; Medium pressure process (AISE-P902); Use Phase (PROC 11)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.257 mg/m³ (TRA Workers 3.0)	0.073
Dermal, systemic, long-term	0.214 mg/kg bw/day (TRA Workers 3.0)	0.214
Combined routes, systemic, long-term		0.287

5.3.25. Worker exposure: Professional Use of Façade/surface Cleaning Products; Façade/surface cleaner; High pressure process (AISE-P901); Use Phase (PROC 11)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.54 mg/m³ (TRA Workers 3.0)	0.153
Dermal, systemic, long-term	0.214 mg/kg bw/day (TRA Workers 3.0)	0.214
Combined routes, systemic, long-term		0.368

5.3.26. Worker exposure: Professional Use of Maintenance Products; Drain unblocker; Manual process (AISE-P606); Use Phase - Professional Use of Maintenance Products; Drain cleaner; Manual process (AISE-P607); Use Phase (PROC 13)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.643 mg/m³ (TRA Workers 3.0)	0.183
Dermal, systemic, long-term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.274
Combined routes, systemic, long-term		0.457

5.3.27. Worker exposure: Professional Use of General surface cleaning products; Periodic cleaning by dipping (AISE-P309); Use Phase - Professional Use of Medical Devices; Medical devices ; Dipping process (AISE-P1102); Use Phase (PROC 13)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.257 mg/m³ (TRA Workers 3.0)	0.073
Dermal, systemic, long-term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.274
Combined routes, systemic, long-term		0.347

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

Scaling method
The workers exposure and environmental emissions have been evaluated using TRA Workers 3.0 and EUSES 2.1.2, respectively.
Health
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures / Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

6. ES 6: Use by professional worker; GES5 - Professional end-use of polishes and wax blends

6.1. Title section

Environment	
CS 1: GES5 - Professional end-use of polishes and wax blends	ERC 8a
Worker	
CS 2: Professional Use of Maintenance Products; Leather care product; Semi-Automatic process (AISE-P605); Use Phase	PROC 2
CS 3: Professional Use of Maintenance Products; Leather care product; Semi-Automatic process (AISE-P605); Preparatory Phase	PROC 8b
CS 4: Professional Use of Maintenance Products; Wooden Furniture care product; Manual process (AISE-P601); Use Phase - Professional Use of Maintenance Products; Wooden Furniture care product; Wipe manual process (AISE-P602); Use Phase - Professional Use of Maintenance Products; Leather care product; Manual process (AISE-P603); Use Phase - Professional Use of Maintenance Products; Leather care product; Wipe manual process (AISE-P604); Use Phase - Professional Use of Maintenance Products; Stainless steel care; Wipe manual process (AISE-P609); Use Phase	PROC 10
CS 5: Professional Use of Floor care products; Polish / impregnating agent; Manual process (AISE-P406); Use Phase - Professional Use of Floor care products; Polish / impregnating agent; Semi-Automatic process (AISE-P407); Use Phase - Professional Use of Floor care products; Polish / impregnating agent; Wipe manual process (AISE-P408); Use Phase - Professional Use of Maintenance Products; Stainless steel care ; Manual process (AISE-P608); Use Phase	PROC 10
CS 6: Professional Use of Maintenance Products; Wooden Furniture care product; Spray manual process (AISE-P602); Use Phase - Professional Use of Maintenance Products; Leather care product; Spray manual process (AISE-P604); Use Phase - Professional Use of Maintenance Products; Stainless steel care; Spray manual process (AISE-P609); Use Phase	PROC 11
CS 7: Professional Use of Floor care products; Polish / impregnating agent; Spray manual process (AISE-P408); Use Phase	PROC 11

6.2. Conditions of use affecting exposure

6.2.1. Control of environmental exposure: GES5 - Professional end-use of polishes and

wax blends (ERC 8a)

Conditions and measures related to treatment of waste (including article waste)
Dispose of waste or used sacks/containers according to local regulations.

6.2.2. Control of worker exposure: Professional Use of Maintenance Products; Leather care product; Semi-Automatic process (AISE-P605); Use Phase (PROC 2)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Use in closed, continuous process with occasional controlled exposure
Basic (professional) exposure controls assumed.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

6.2.3. Control of worker exposure: Professional Use of Maintenance Products; Leather care product; Semi-Automatic process (AISE-P605); Preparatory Phase (PROC 8b)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Use in semi-closed process with opportunity for exposure

Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

6.2.4. Control of worker exposure: Professional Use of Maintenance Products; Wooden Furniture care product; Manual process (AISE-P601); Use Phase - Professional Use of Maintenance Products; Wooden Furniture care product; Wipe manual process (AISE-P602); Use Phase - Professional Use of Maintenance Products; Leather care product; Manual process (AISE-P603); Use Phase - Professional Use of Maintenance Products; Leather care product; Wipe manual process (AISE-P604); Use Phase - Professional Use of Maintenance Products; Stainless steel care; Wipe manual process (AISE-P609); Use Phase (PROC 10)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure

Indoor use
Assumes process temperature up to 40.0 °C

6.2.5. Control of worker exposure: Professional Use of Floor care products; Polish / impregnating agent; Manual process (AISE-P406); Use Phase - Professional Use of Floor care products; Polish / impregnating agent; Semi-Automatic process (AISE-P407); Use Phase - Professional Use of Floor care products; Polish / impregnating agent; Wipe manual process (AISE-P408); Use Phase - Professional Use of Maintenance Products; Stainless steel care ; Manual process (AISE-P608); Use Phase (PROC 10)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 4 hours.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 95.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

6.2.6. Control of worker exposure: Professional Use of Maintenance Products; Wooden Furniture care product; Spray manual process (AISE-P602); Use Phase - Professional Use of Maintenance Products; Leather care product; Spray manual process (AISE-P604); Use Phase - Professional Use of Maintenance Products; Stainless steel care; Spray manual process (AISE-P609); Use Phase (PROC 11)

Product (article) characteristics

Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 15 minutes.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Local exhaust ventilation - efficiency of at least 80.0 %
Basic (professional) exposure controls assumed.
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

6.2.7. Control of worker exposure: Professional Use of Floor care products; Polish / impregnating agent; Spray manual process (AISE-P408); Use Phase (PROC 11)

Product (article) characteristics
Limit the substance content in the product to 1 % .
Amount used (or contained in articles), frequency and duration of use/exposure
Avoid carrying out activities involving exposure for more than 1 hour.
Technical and organisational conditions and measures
Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
Local exhaust ventilation - efficiency of at least 80.0 %
Basic (professional) exposure controls assumed.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.; For further specification, refer to section 8 of the SDS.
Wear a respirator providing a minimum efficiency of 90.0 %; For further specification, refer to section 8 of the SDS.
Other conditions affecting workers exposure
Indoor use
Assumes process temperature up to 40.0 °C

6.3. Exposure estimation and reference to its source

6.3.1. Environmental release and exposure: GES5 - Professional end-use of polishes and wax blends (ERC 8a)

Release route	Release rate	Release estimation method
Water	0.02 kg/day	ERC based
Air	0.02 kg/day	ERC based
Soil	0 kg/day	ERC based

Protection target	Exposure estimate (based on: EUSES 2.1.2)	RCR
Freshwater	2.247E-4 mg/L	0.11
Sediment (freshwater)	0.007 mg/kg dw	0.01
Marine water	2.106E-5 mg/L	0.103
Sediment (marine water)	6.241E-4 mg/kg dw	< 0.01
Predator (freshwater)	0.142 mg/kg ww	< 0.01
Predator (marine water)	0.013 mg/kg ww	< 0.01
Top predator (marine water)	0.009 mg/kg ww	< 0.01
Sewage treatment plant	0.001 mg/L	< 0.01

Protection target	Exposure estimate (based on: EUSES 2.1.2)	RCR
Agricultural soil	6.878E-4 mg/kg dw	< 0.01
Predator (terrestrial)	1.886E-4 mg/kg ww	< 0.01
Man via environment - Inhalation	7.491E-6 mg/m³	< 0.01
Man via environment - Oral	3.233E-4 mg/kg bw/day	< 0.01

6.3.2. Worker exposure: Professional Use of Maintenance Products; Leather care product; Semi-Automatic process (AISE-P605); Use Phase (PROC 2)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.643 mg/m³ (TRA Workers 3.0)	0.183
Dermal, systemic, long-term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.137
Combined routes, systemic, long-term		0.32

6.3.3. Worker exposure: Professional Use of Maintenance Products; Leather care product; Semi-Automatic process (AISE-P605); Preparatory Phase (PROC 8b)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	1.285 mg/m³ (TRA Workers 3.0)	0.365
Dermal, systemic, long-term	0.137 mg/kg bw/day (TRA Workers 3.0)	0.137
Combined routes, systemic, long-term		0.502

6.3.4. Worker exposure: Professional Use of Maintenance Products; Wooden Furniture care product; Manual process (AISE-P601); Use Phase - Professional Use of Maintenance Products; Wooden Furniture care product; Wipe manual process (AISE-P602); Use Phase - Professional Use of Maintenance Products; Leather care product; Manual process (AISE-P603); Use Phase - Professional Use of Maintenance Products; Leather care product; Wipe manual process (AISE-P604); Use Phase - Professional Use of Maintenance Products; Stainless steel care; Wipe manual process (AISE-P609); Use Phase (PROC 10)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.321 mg/m³ (TRA Workers 3.0)	0.091

Route of exposure and type of effects	Exposure estimate	RCR
Dermal, systemic, long-term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.274
Combined routes, systemic, long-term		0.366

6.3.5. Worker exposure: Professional Use of Floor care products; Polish / impregnating agent; Manual process (AISE-P406); Use Phase - Professional Use of Floor care products; Polish / impregnating agent; Semi-Automatic process (AISE-P407); Use Phase - Professional Use of Floor care products; Polish / impregnating agent; Wipe manual process (AISE-P408); Use Phase - Professional Use of Maintenance Products; Stainless steel care ; Manual process (AISE-P608); Use Phase (PROC 10)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.482 mg/m³ (TRA Workers 3.0)	0.137
Dermal, systemic, long-term	0.274 mg/kg bw/day (TRA Workers 3.0)	0.274
Combined routes, systemic, long-term		0.411

6.3.6. Worker exposure: Professional Use of Maintenance Products; Wooden Furniture care product; Spray manual process (AISE-P602); Use Phase - Professional Use of Maintenance Products; Leather care product; Spray manual process (AISE-P604); Use Phase - Professional Use of Maintenance Products; Stainless steel care; Spray manual process (AISE-P609); Use Phase (PROC 11)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.128 mg/m³ (TRA Workers 3.0)	0.037
Dermal, systemic, long-term	0.214 mg/kg bw/day (TRA Workers 3.0)	0.214
Combined routes, systemic, long-term		0.251

6.3.7. Worker exposure: Professional Use of Floor care products; Polish / impregnating agent; Spray manual process (AISE-P408); Use Phase (PROC 11)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.257 mg/m³ (TRA Workers 3.0)	0.073
Dermal, systemic, long-term	0.214 mg/kg bw/day (TRA Workers 3.0)	0.214
Combined routes, systemic, long-term		0.287

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

set by the ES

7. ES 7: Consumer Use; GES6 - Consumer end-use of washing and cleaning products

7.1. Title section

Environment	
CS 1: GES6 - Consumer end-use of washing and cleaning products (indoor and outdoor use)	ERC 8d, ERC 8a
Consumer	
CS 2: CS1a Laundry and dish washing products [a) laundry regular (powder, liquid) AISE C1; b) laundry compact (powder, liquid/gel, tablet) AISE C2; d) Laundry additives (powder bleach, liquid bleach, tablet) AISE C4; f) Machine dishwashing (powder, liquid, tablet) ; AISE C6	PC 35
CS 3: CS1b Laundry and dish washing products [c) fabric conditioners (liquid regular, liquid concentrate) AISE C3	PC 35
CS 4: CS1c Laundry and dish washing products [e) Hand dishwashing (liquid regular, liquid concentrate) ; AISE C5	PC 35
CS 5: CS1d Laundry and dish washing products [g) Laundry aids (ironing aids-starch spray, ironing aids-other) ; AISE C12	PC 35
CS 6: CS2a Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) [a) Surface cleaners (liquid, powder, gel neat) AISE C7; b) Toilet cleaners (powder, liquid, gel, tablet) AISE C8; c) Carpet cleaners (liquid) AISE C11;	PC 35
CS 7: CS2b Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) [d) Wipes (bathroom, kitchen, floor) AISE C15;	PC 35
CS 8: CS2c Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) [e) High pressure washers/cleaners (liquid) AISE C21; f) Automotive care (liquid) AISE C22]	PC 35
CS 9: CS3a Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) [a) Surface cleaners (spray neat) AISE C7; b) Oven cleaners (trigger spray) AISE C10; c) Carpet cleaners (spray) AISE C11;	PC 35
CS 10: CS3b Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) [d) Automotive care (spray) AISE C22]	PC 35

7.2. Conditions of use affecting exposure

7.2.1. Control of environmental exposure: GES6 - Consumer end-use of washing and cleaning products (indoor and outdoor use) (ERC 8d)

Conditions and measures related to treatment of waste (including article waste)
Dispose of waste or used sacks/containers according to local regulations.

7.2.2. Control of consumer exposure: CS1a Laundry and dish washing products [a) laundry regular (powder, liquid) AISE C1; b) laundry compact (powder, liquid/gel, tablet) AISE C2; d) Laundry additives (powder bleach, liquid bleach, tablet) AISE C4; f) Machine dishwashing (powder, liquid, tablet) ; AISE C6 (PC 35)

Product (article) characteristics
Covers concentrations up to 0.05 %
Oral exposure is considered to be not relevant.
Amount used, frequency and duration of use/exposure
Covers use up to 50.0 g/event
Covers use up to 1.0 events/day
Other conditions affecting consumers exposure
Assumes that potential dermal contact is limited to hands.

7.2.3. Control of consumer exposure: CS1b Laundry and dish washing products [c) fabric conditioners (liquid regular, liquid concentrate) AISE C3 (PC 35)

Product (article) characteristics
Covers concentrations up to 0.1 %
Oral exposure is considered to be not relevant.
Amount used, frequency and duration of use/exposure
Covers use up to 50.0 g/event
Covers use up to 0.6 events/day
Other conditions affecting consumers exposure
Assumes that potential dermal contact is limited to hands.

7.2.4. Control of consumer exposure: CS1c Laundry and dish washing products [e] Hand dishwashing (liquid regular, liquid concentrate) ; AISE C5 (PC 35)

Product (article) characteristics
Covers concentrations up to 0.1 %
Oral exposure is considered to be not relevant.
Amount used, frequency and duration of use/exposure
Covers use up to 10.0 g/event
Covers use up to 1.0 events/day
Other conditions affecting consumers exposure
Assumes that potential dermal contact is limited to hands.

7.2.5. Control of consumer exposure: CS1d Laundry and dish washing products [g] Laundry aids (ironing aids-starch spray, ironing aids-other) ; AISE C12 (PC 35)

Product (article) characteristics
Laundry and dish washing products
No spraying
Limit the substance content in the product to 0.00025 g/g
Oral exposure is considered to be not relevant.
Amount used, frequency and duration of use/exposure
Covers use up to 10.0 g/event
Covers use up to 1.0 events/day
Other conditions affecting consumers exposure
Assumes that potential dermal contact is limited to hands.

7.2.6. Control of consumer exposure: CS2a Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) [a) Surface cleaners (liquid, powder, gel neat) AISE C7; b) Toilet cleaners (powder, liquid, gel, tablet) AISE C8; c) Carpet cleaners (liquid) AISE C11; (PC 35)

Product (article) characteristics

Covers concentrations up to 0.1 %
Oral exposure is considered to be not relevant.
Amount used, frequency and duration of use/exposure
Covers use up to 30.0 g/event
Covers use up to 0.25 events/day
Other conditions affecting consumers exposure
Assumes that potential dermal contact is limited to hands.

7.2.7. Control of consumer exposure: CS2b Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) [d) Wipes (bathroom, kitchen, floor) AISE C15; (PC 35)

Product (article) characteristics
Covers concentrations up to 0.1 %
Oral exposure is considered to be not relevant.
Amount used, frequency and duration of use/exposure
Covers use up to 10.0 g/event
Covers use up to 1.0 events/day
Other conditions affecting consumers exposure
Assumes that potential dermal contact is limited to hands.

7.2.8. Control of consumer exposure: CS2c Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) [e) High pressure washers/cleaners (liquid) AISE C21; f) Automotive care (liquid) AISE C22] (PC 35)

Product (article) characteristics
Covers concentrations up to 0.1 %
Oral exposure is considered to be not relevant.
Amount used, frequency and duration of use/exposure

Covers use up to 150.0 g/event
Covers use up to 0.021 events/day
Other conditions affecting consumers exposure
Assumes that potential dermal contact is limited to hands.

7.2.9. Control of consumer exposure: CS3a Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) [a) Surface cleaners (spray neat) AISE C7; b) Oven cleaners (trigger spray) AISE C10; c) Carpet cleaners (spray) AISE C11; (PC 35)

Product (article) characteristics
Product is a spray
Covers concentrations up to 0.1 %
Oral exposure is considered to be not relevant.
Amount used, frequency and duration of use/exposure
Covers use up to 30.0 g/event
Covers use up to 0.25 events/day
Other conditions affecting consumers exposure
Assumes that potential dermal contact is limited to hands.

7.2.10. Control of consumer exposure: CS3b Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) [d) Automotive care (spray) AISE C22] (PC 35)

Product (article) characteristics
Product is a spray
Covers concentrations up to 0.1 %
Oral exposure is considered to be not relevant.
Amount used, frequency and duration of use/exposure
Covers use up to 150.0 g/event
Covers use up to 0.021 events/day

Other conditions affecting consumers exposure
Assumes that potential dermal contact is limited to hands.

7.3. Exposure estimation and reference to its source

7.3.1. Environmental release and exposure: GES6 - Consumer end-use of washing and cleaning products (indoor and outdoor use) (ERC 8d)

Release route	Release rate	Release estimation method
Water	0.02 kg/day	ERC based
Air	0.02 kg/day	ERC based
Soil	0.004 kg/day	ERC based

Protection target	Exposure estimate (based on: EUSES 2.1.2)	RCR
Freshwater	2.247E-4 mg/L	0.11
Sediment (freshwater)	0.007 mg/kg dw	0.01
Marine water	2.106E-5 mg/L	0.103
Sediment (marine water)	6.241E-4 mg/kg dw	< 0.01
Predator (freshwater)	0.142 mg/kg ww	< 0.01
Predator (marine water)	0.013 mg/kg ww	< 0.01
Top predator (marine water)	0.009 mg/kg ww	< 0.01
Sewage treatment plant	0.001 mg/L	< 0.01
Agricultural soil	6.878E-4 mg/kg dw	< 0.01
Predator (terrestrial)	1.886E-4 mg/kg ww	< 0.01
Man via environment - Inhalation	7.491E-6 mg/m³	< 0.01
Man via environment - Oral	3.233E-4 mg/kg bw/day	< 0.01

7.3.2. Consumer exposure: CS1a Laundry and dish washing products [a) laundry regular (powder, liquid) AISE C1; b) laundry compact (powder, liquid/gel, tablet) AISE C2; d) Laundry additives (powder bleach, liquid bleach, tablet) AISE C4; f) Machine dishwashing (powder, liquid, tablet) ; AISE C6 (PC 35)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.13 mg/m³ (External Tool: *TRA V3 - tier 1.5*)	0.149
Dermal, systemic, long-term	0.071 mg/kg bw/day (External Tool: *TRA V3 - tier 1.5*)	0.142
Oral, systemic, long-term	0 mg/kg bw/day (External Tool: *TRA V3 - tier 1.5*)	< 0.01
Combined routes, systemic, long-term		0.291

7.3.3. Consumer exposure: CS1b Laundry and dish washing products [c) fabric conditioners (liquid regular, liquid concentrate) AISE C3 (PC 35)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.158 mg/m³ (External Tool: *TRA V3 - tier 1.5*)	0.182
Dermal, systemic, long-term	0.09 mg/kg bw/day (External Tool: *TRA V3 - tier 1.5*)	0.18
Oral, systemic, long-term	0 mg/kg bw/day (External Tool: *TRA V3 - tier 1.5*)	< 0.01
Combined routes, systemic, long-term		0.362

7.3.4. Consumer exposure: CS1c Laundry and dish washing products [e) Hand dishwashing (liquid regular, liquid concentrate) ; AISE C5 (PC 35)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.156 mg/m³ (External Tool: *TRA V3 - tier 1.5*)	0.179
Dermal, systemic, long-term	0.143 mg/kg bw/day (External Tool: *TRA V3 - tier 1.5*)	0.286
Oral, systemic, long-term	0 mg/kg bw/day (External Tool: *TRA V3 - tier 1.5*)	< 0.01
Combined routes, systemic, long-term		0.465

7.3.5. Consumer exposure: CS1d Laundry and dish washing products [g) Laundry aids (ironing aids-starch spray, ironing aids-other) ; AISE C12 (PC 35)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.078 mg/m³ (TRA Consumers 3.0)	0.09
Dermal, systemic, long-term	0.036 mg/kg bw/day (TRA Consumers 3.0)	0.071
Oral, systemic, long-term	0 mg/kg bw/day (TRA Consumers 3.0)	< 0.01
Combined routes, systemic, long-term		0.161

7.3.6. Consumer exposure: CS2a Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) [a) Surface cleaners (liquid, powder, gel neat) AISE C7; b) Toilet cleaners (powder, liquid, gel, tablet) AISE C8; c) Carpet cleaners (liquid) AISE C11; (PC 35)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.156 mg/m³ (External Tool: *TRA V3 - tier 1.5*)	0.179
Dermal, systemic, long-term	0.036 mg/kg bw/day (External Tool: *TRA V3 - tier 1.5*)	0.072
Oral, systemic, long-term	0 mg/kg bw/day (External Tool: *TRA V3 - tier 1.5*)	< 0.01
Combined routes, systemic, long-term		0.251

7.3.7. Consumer exposure: CS2b Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) [d) Wipes (bathroom, kitchen, floor) AISE C15; (PC 35)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.104 mg/m³ (External Tool: *TRA V3 - tier 1.5*)	0.12
Dermal, systemic, long-term	0.143 mg/kg bw/day (External Tool: *TRA V3 - tier 1.5*)	0.286
Oral, systemic, long-term	0 mg/kg bw/day (External Tool: *TRA V3 - tier 1.5*)	< 0.01
Combined routes, systemic, long-term		0.406

7.3.8. Consumer exposure: CS2c Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) [e) High pressure washers/cleaners (liquid) AISE C21; f) Automotive care (liquid) AISE C22] (PC 35)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.131 mg/m³ (External Tool: *TRA V3 - tier 1.5*)	0.151
Dermal, systemic, long-term	0.003 mg/kg bw/day (External Tool: *TRA V3 - tier 1.5*)	< 0.01
Oral, systemic, long-term	0 mg/kg bw/day (External Tool: *TRA V3 - tier 1.5*)	< 0.01
Combined routes, systemic, long-term		0.157

7.3.9. Consumer exposure: CS3a Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) [a) Surface cleaners (spray neat) AISE C7; b) Oven cleaners (trigger spray) AISE C10; c) Carpet cleaners (spray) AISE C11; (PC 35)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.11 mg/m³ (External Tool: *TRA V3 - tier 1.5*)	0.126
Dermal, systemic, long-term	0.036 mg/kg bw/day (External Tool: *TRA V3 - tier 1.5*)	0.072
Oral, systemic, long-term	0 mg/kg bw/day (External Tool: *TRA V3 - tier 1.5*)	< 0.01
Combined routes, systemic, long-term		0.198

7.3.10. Consumer exposure: CS3b Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) [d) Automotive care (spray) AISE C22] (PC 35)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.103 mg/m³ (External Tool: *TRA V3 - tier 1.5*)	0.118
Dermal, systemic, long-term	0.003 mg/kg bw/day (External Tool: *TRA V3 - tier 1.5*)	< 0.01
Oral, systemic, long-term	0 mg/kg bw/day (External Tool: *TRA V3 - tier 1.5*)	< 0.01
Combined routes, systemic, long-term		0.124

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

Scaling method

The consumers exposure and environmental emissions have been evaluated using TRA V3 – tier 1.5 and EUSES 2.1.2, respectively.
Health
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures / Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

8. ES 8: Consumer Use; GES7 - Consumer end-use of air care products

8.1. Title section

Environment	
CS 1: GES7 - Consumer end-use of air care products	ERC 8a
Consumer	
CS 2: CS1 Air fresheners aerosol : aqueous, non-aqueous, concentrated (mini-aerosol, Timed release aerosol) ; AISE C17	PC 3
CS 3: CS2 Air fresheners non aerosol [a) perfume in/on solid substrate (gel), diffusers (heated) AISE C18; b) candles AISE C18]	PC 3

8.2. Conditions of use affecting exposure

8.2.1. Control of environmental exposure: GES7 - Consumer end-use of air care products (ERC 8a)

Conditions and measures related to treatment of waste (including article waste)
Dispose of waste or used sacks/containers according to local regulations.

8.2.2. Control of consumer exposure: CS1 Air fresheners aerosol : aqueous, non-aqueous, concentrated (mini-aerosol, Timed release aerosol) ; AISE C17 (PC 3)

Product (article) characteristics
Product is a spray
Covers concentrations up to 0.25 %
Oral exposure is considered to be not relevant.
Amount used, frequency and duration of use/exposure
Covers use up to 8.4 g/event
Covers use up to 1.0 events/day

8.2.3. Control of consumer exposure: CS2 Air fresheners non aerosol [a) perfume in/on solid substrate (gel), diffusers (heated) AISE C18; b) candles AISE C18] (PC 3)

Product (article) characteristics

Air care, continuous action (solid and liquid)
Limit the substance content in the product to 0.01 g/g
Oral exposure is considered to be not relevant.
Amount used, frequency and duration of use/exposure
Covers use up to 0.84 g/event
Covers use up to 1.0 events/day
Other conditions affecting consumers exposure
Assumes that potential dermal contact is limited to fingertips.

8.3. Exposure estimation and reference to its source

8.3.1. Environmental release and exposure: GES7 - Consumer end-use of air care products (ERC 8a)

Release route	Release rate	Release estimation method
Water	0.02 kg/day	ERC based
Air	0.02 kg/day	ERC based
Soil	0 kg/day	ERC based

Protection target	Exposure estimate (based on: EUSES 2.1.2)	RCR
Freshwater	2.247E-4 mg/L	0.11
Sediment (freshwater)	0.007 mg/kg dw	0.01
Marine water	2.106E-5 mg/L	0.103
Sediment (marine water)	6.241E-4 mg/kg dw	< 0.01
Predator (freshwater)	0.142 mg/kg ww	< 0.01
Predator (marine water)	0.013 mg/kg ww	< 0.01
Top predator (marine water)	0.009 mg/kg ww	< 0.01

Protection target	Exposure estimate (based on: EUSES 2.1.2)	RCR
Sewage treatment plant	0.001 mg/L	< 0.01
Agricultural soil	6.878E-4 mg/kg dw	< 0.01
Predator (terrestrial)	1.886E-4 mg/kg ww	< 0.01
Man via environment - Inhalation	7.491E-6 mg/m³	< 0.01
Man via environment - Oral	3.233E-4 mg/kg bw/day	< 0.01

8.3.2. Consumer exposure: CS1 Air fresheners aerosol : aqueous, non-aqueous, concentrated (mini-aerosol, Timed release aerosol) ; AISE C17 (PC 3)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.366 mg/m³ (External Tool: *TRA V3 - tier 1.5*)	0.421
Dermal, systemic, long-term	0 mg/kg bw/day (External Tool: *TRA V3 - tier 1.5*)	< 0.01
Oral, systemic, long-term	0 mg/kg bw/day (External Tool: *TRA V3 - tier 1.5*)	< 0.01
Combined routes, systemic, long-term		0.421

8.3.3. Consumer exposure: CS2 Air fresheners non aerosol [a) perfume in/on solid substrate (gel), diffusers (heated) AISE C18; b) candles AISE C18] (PC 3)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.072 mg/m³ (TRA Consumers 3.0)	0.083
Dermal, systemic, long-term	0.006 mg/kg bw/day (TRA Consumers 3.0)	0.012
Oral, systemic, long-term	0 mg/kg bw/day (TRA Consumers 3.0)	< 0.01
Combined routes, systemic, long-term		0.095

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

Scaling method

The consumers exposure emissions have been evaluated using TRA V3 - tier 1.5 and TRA Consumers 3.0 and environmental exposure using EUSES 2.1.2.
Health
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures / Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

9. ES 9: Consumer Use; GES8 - Consumer end-use of biocides

9.1. Title section

Environment	
CS 1: GES8 - Consumer end-use of biocides (indoor and outdoor use)	ERC 8d, ERC 8a
Consumer	
CS 2: CS1 Insecticides: liquid electric, spray neat ; AISE C19	PC 8
CS 3: CS2 Repellents ; AISE C19	PC 8

9.2. Conditions of use affecting exposure

9.2.1. Control of environmental exposure: GES8 - Consumer end-use of biocides (indoor and outdoor use) (ERC 8d)

Conditions and measures related to treatment of waste (including article waste)
Dispose of waste or used sacks/containers according to local regulations.

9.2.2. Control of consumer exposure: CS1 Insecticides: liquid electric, spray neat ; AISE C19 (PC 8)

Product (article) characteristics
Product is a spray
Covers concentrations up to 0.25 %
Oral exposure is considered to be not relevant.
Amount used, frequency and duration of use/exposure
Covers use up to 8.4 g/event
Covers use up to 1.0 events/day

9.2.3. Control of consumer exposure: CS2 Repellents ; AISE C19 (PC 8)

Product (article) characteristics
Product is a spray

Covers concentrations up to 1.0 %
Oral exposure is considered to be not relevant.
Air care, continuous action (solid and liquid)
Amount used, frequency and duration of use/exposure
Covers use up to 0.84 g/event
Covers use up to 1.0 events/day
Other conditions affecting consumers exposure
Assumes that potential dermal contact is limited to fingertips.

9.3. Exposure estimation and reference to its source

9.3.1. Environmental release and exposure: GES8 - Consumer end-use of biocides (indoor and outdoor use) (ERC 8d)

Release route	Release rate	Release estimation method
Water	0.02 kg/day	ERC based
Air	0.02 kg/day	ERC based
Soil	0.004 kg/day	ERC based

Protection target	Exposure estimate (based on: EUSES 2.1.2)	RCR
Freshwater	2.247E-4 mg/L	0.11
Sediment (freshwater)	0.007 mg/kg dw	0.01
Marine water	2.106E-5 mg/L	0.103
Sediment (marine water)	6.241E-4 mg/kg dw	< 0.01
Predator (freshwater)	0.142 mg/kg ww	< 0.01
Predator (marine water)	0.013 mg/kg ww	< 0.01
Top predator (marine water)	0.009 mg/kg ww	< 0.01

Protection target	Exposure estimate (based on: EUSES 2.1.2)	RCR
Sewage treatment plant	0.001 mg/L	< 0.01
Agricultural soil	6.878E-4 mg/kg dw	< 0.01
Predator (terrestrial)	1.886E-4 mg/kg ww	< 0.01
Man via environment - Inhalation	7.491E-6 mg/m³	< 0.01
Man via environment - Oral	3.233E-4 mg/kg bw/day	< 0.01

9.3.2. Consumer exposure: CS1 Insecticides: liquid electric, spray neat ; AISE C19 (PC 8)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.366 mg/m³ (External Tool: *TRA V3 - tier 1.5*)	0.407
Dermal, systemic, long-term	0 mg/kg bw/day (External Tool: *TRA V3 - tier 1.5*)	< 0.01
Oral, systemic, long-term	0 mg/kg bw/day (External Tool: *TRA V3 - tier 1.5*)	< 0.01
Combined routes, systemic, long-term		0.407

9.3.3. Consumer exposure: CS2 Repellents ; AISE C19 (PC 8)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.072 mg/m³ (External Tool: *TRA V3*)	0.08
Dermal, systemic, long-term	0.006 mg/kg bw/day (External Tool: *TRA V3*)	0.023
Oral, systemic, long-term	0 mg/kg bw/day (External Tool: *TRA V3*)	< 0.01
Combined routes, systemic, long-term		0.104

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

Scaling method
The consumers exposure emissions have been evaluated using TRA V3 - tier 1.5 and TRA V3 and environmental exposure using EUSES 2.1.2.

Health
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures / Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

10. ES 10: Consumer Use; GES9 - consumer end-use of polishes and wax blend

10.1. Title section

Environment	
CS 1: GES9 - consumer end-use of polishes and wax blend	ERC 8a
Consumer	
CS 2: CS1 Furniture, floor & leather care: wax/cream; (floor, furniture, shoes) ; AISE C20	PC 31
CS 3: CS2 Furniture, floor & leather care: spray; (furniture, shoes) ; AISE C20	PC 31

10.2. Conditions of use affecting exposure

10.2.1. Control of environmental exposure: GES9 - consumer end-use of polishes and wax blend (ERC 8a)

Conditions and measures related to treatment of waste (including article waste)
Dispose of waste or used sacks/containers according to local regulations.

10.2.2. Control of consumer exposure: CS1 Furniture, floor & leather care: wax/cream; (floor, furniture, shoes) ; AISE C20 (PC 31)

Product (article) characteristics
Polishes, wax / cream (floor, furniture, shoes)
Limit the substance content in the product to 0.001 g/g
Oral exposure is considered to be not relevant.
Polishes, wax / cream (floor, furniture, shoes)
Limit the substance content in the product to 0.001 g/g
Amount used, frequency and duration of use/exposure
For each use event, covers use amounts up to 550.0 g
Other conditions affecting consumers exposure
Assumes that potential dermal contact is limited to hands.

10.2.3. Control of consumer exposure: CS2 Furniture, floor & leather care: spray; (furniture, shoes) ; AISE C20 (PC 31)

Product (article) characteristics
Product is a spray
Covers concentrations up to 0.1 %
Polishes, spray (furniture, shoes)
Limit the substance content in the product to 0.001 g/g
Oral exposure is considered to be not relevant.
Amount used, frequency and duration of use/exposure
For each use event, covers use amounts up to 135.0 g
Other conditions affecting consumers exposure
Covers use in room size of = 20.0 m3
Assumes that potential dermal contact is limited to hands.

10.3. Exposure estimation and reference to its source

10.3.1. Environmental release and exposure: GES9 - consumer end-use of polishes and wax blend (ERC 8a)

Release route	**Release rate**	**Release estimation method**
Water	0.02 kg/day	ERC based
Air	0.02 kg/day	ERC based
Soil	0 kg/day	ERC based

Protection target	**Exposure estimate (based on: EUSES 2.1.2)**	**RCR**
Freshwater	2.247E-4 mg/L	0.11
Sediment (freshwater)	0.007 mg/kg dw	0.01
Marine water	2.106E-5 mg/L	0.103

Protection target	Exposure estimate (based on: EUSES 2.1.2)	RCR
Sediment (marine water)	6.241E-4 mg/kg dw	< 0.01
Predator (freshwater)	0.142 mg/kg ww	< 0.01
Predator (marine water)	0.013 mg/kg ww	< 0.01
Top predator (marine water)	0.009 mg/kg ww	< 0.01
Sewage treatment plant	0.001 mg/L	< 0.01
Agricultural soil	6.878E-4 mg/kg dw	< 0.01
Predator (terrestrial)	1.886E-4 mg/kg ww	< 0.01
Man via environment - Inhalation	7.491E-6 mg/m³	< 0.01
Man via environment - Oral	3.233E-4 mg/kg bw/day	< 0.01

10.3.2. Consumer exposure: CS1 Furniture, floor & leather care: wax/cream; (floor, furniture, shoes) ; AISE C20 (PC 31)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	1E-5 mg/m³ (External Tool: *ConsExpo 5*)	< 0.01
Dermal, systemic, long-term	0.143 mg/kg bw/day (TRA Consumers 3.0)	0.286
Oral, systemic, long-term	0 mg/kg bw/day (TRA Consumers 3.0)	< 0.01
Combined routes, systemic, long-term		0.286

10.3.3. Consumer exposure: CS2 Furniture, floor & leather care: spray; (furniture, shoes) ; AISE C20 (PC 31)

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	4.8E-7 mg/m³ (External Tool: *ConsExpo 5*)	< 0.01
Dermal, systemic, long-term	0.143 mg/kg bw/day (TRA Consumers 3.0)	0.286
Oral, systemic, long-term	0 mg/kg bw/day (TRA Consumers 3.0)	< 0.01
Combined routes, systemic, long-term		0.286

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

Scaling method
The consumers exposure emissions have been evaluated using TRA Consumers 3.0 and ConsExpo 5 and environmental exposure using EUSES 2.1.2.
Health
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures / Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

11. ES 11: Consumer Use; GES10 - Consumer end-use of cosmetics

11.1. Title section

Environment	
CS 1: GES10 - Consumer end-use of cosmetics	ERC 8a
Consumer	
CS 2: cosmetics, personal care products	PC 39
CS 3: perfumes, fragrances	PC 28

11.2. Conditions of use affecting exposure

11.2.1. Control of environmental exposure: GES10 - Consumer end-use of cosmetics (ERC 8a)

Conditions and measures related to treatment of waste (including article waste)
Dispose of waste or used sacks/containers according to local regulations.

11.2.2. Control of consumer exposure: cosmetics, personal care products (PC 39)

No human health assessment needed (assessed under cosmetic regulation)

11.2.3. Control of consumer exposure: perfumes, fragrances (PC 28)

No human health assessment needed (assessed under cosmetic regulation).

11.3. Exposure estimation and reference to its source

11.3.1. Environmental release and exposure: GES10 - Consumer end-use of cosmetics (ERC 8a)

Release route	Release rate	Release estimation method
Water	0.041 kg/day	ERC based
Air	0.041 kg/day	ERC based
Soil	0 kg/day	ERC based

Protection target	Exposure estimate (based on: EUSES 2.1.2)	RCR
Freshwater	3.468E-4 mg/L	0.17
Sediment (freshwater)	0.01 mg/kg dw	0.015
Marine water	3.326E-5 mg/L	0.163
Sediment (marine water)	9.86E-4 mg/kg dw	0.015
Predator (freshwater)	0.194 mg/kg ww	< 0.01
Predator (marine water)	0.018 mg/kg ww	< 0.01
Top predator (marine water)	0.01 mg/kg ww	< 0.01
Sewage treatment plant	0.002 mg/L	< 0.01
Agricultural soil	0.001 mg/kg dw	0.01
Predator (terrestrial)	3.604E-4 mg/kg ww	< 0.01
Man via environment - Inhalation	7.632E-6 mg/m³	< 0.01
Man via environment - Oral	4.996E-4 mg/kg bw/day	< 0.01

11.3.2. Consumer exposure: cosmetics, personal care products (PC 39)

The human health aspects of cosmetics have already been assessed under the Cosmetics Directive and as such are not covered by REACH as indicated below:

Article 14, paragraph 5b stipulates that: “The chemical safety report need not include consideration of the risks to human health from the following end uses; (b) in cosmetic products within the scope of Directive 76/768/EEC”.

11.3.3. Consumer exposure: perfumes, fragrances (PC 28)

The human health aspects of cosmetics have already been assessed under the Cosmetics Directive and as such are not covered by REACH as indicated below:

Article 14, paragraph 5b stipulates that: “The chemical safety report need not include consideration of the risks to human health from the following end uses; (b) in cosmetic products within the scope of Directive 76/768/EEC”.

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

Scaling method
The environmental exposure has been evaluated using EUSES 2.1.2.
Health
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures / Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.