DECKBLATT ZUM SICHERHEITSDATENBLATT

gemäss Anhang 2 Ziffer 3.2 ChemV / Deckblatt erstellt am 19.03.2025

Produkt: Calciumchlorid Schuppen

Nationale Anforderungen in Abschnitt 1C

1.2 Relevante identifizierte Verwendung des Stoffs oder Gemischs

Landwirtschaft
Lebensmittelzusatzstoffe zur Verwendung in Lebensmitteln für den menschlichen Verzehr

1.3 Einzelheiten zum Lieferanten, der das Sicherheitsdatenblatt bereitstellt

Lieferant
Brau- und Rauchshop GmbH
Hauptstrasse 1
CH-5026 Densbüren
Tel. +41 (0)56 666 35 18
info@brauundrauchshop.ch

Lieferant des Sicherheitsdatenblattes
Brenntag S.p.A.
Milanofiori Strada 6 Pal. A/13
IT 20057 Assago (MI)
Italy
Tel. +39 02 48333 0
infoSDS@brenntag.it

Hersteller
SALVAY CHEMICALS INTERNATIONAL SA
Rue de Ransbeek 310
1120 BRUXELLES
Belgium
Tel. +32 22 2642111
manager.sds@silvay.com

1.4 Notrufnummern

Tox Info Suisse, **24h-Notfallnummer: 145**

Telefon +41 (0)44 251 51 51, www.toxi.ch

Nationale Anforderungen in Abschnitt 7

7 Handhabung und Lagerung
7.1 Schutzmassnahmen zur sicheren Handhabung
Schutzmassnahmen
Hinweise zum sicheren Umgang
Ausreichende Lagerraumbelüftung sicherstellen.
Staubbildung und - ansammlung vermeiden.
Persönliche Schutzausrüstung tragen.
Berührung mit den Augen, der Haut und Kleidung vermeiden.

Hinweise zur allgemeinen Industriehygiene

Vor den Pausen und bei Arbeitsende Hände waschen.
Am Arbeitsplatz nicht essen, trinken, rauchen, schnupfen.
Beschmutzte, getränkte Kleidung sofort ausziehen.
Verschmutzte Kleidungsstücke sind vor der Wiederverwendung zu waschen.

7.2 Bedingungen zur sicheren Lagerung unter Berücksichtigung von Unverträglichkeiten

Anforderungen an Lagerräume und Behälter

Im Originalbehälter lagern.
Trocken lagern.
An einem gut belüfteten Ort aufbewahren.
Behälter geschlossen halten.

Zusammenlagerungshinweise

Keine Daten verfügbar

Nicht zusammen lagern mit

Aluminium

Weitere Angaben zu Lagerbedingungen

Behälter gut geschlossen halten und an einem trockenen, kühlen und gut belüfteten Ort lagern.

7.3 Spezifische Endanwendungen

Keine weiteren relevanten Informationen verfügbar

Nationale Anforderungen in Abschnitt 8

8.0 Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen

Gesetzlich ist der Arbeitgeber verpflichtet eine Risikobeurteilung durchzuführen und geeignete, dem Risiko entsprechende Massnahmen zu definieren. Wird der in Abschnitt 8.1 behördlich, definierte Grenzwert überschritten sind alle im Abschnitt 8.2 genannten Schutzmassnahmen anzuwenden und regelmässige Messungen zur Einhaltung der behördlichen Grenzwerte durchzuführen. Für jede Situation in der ein Risiko nicht ausgeschlossen werden kann müssen die beschriebenen Massnahmen angewendet werden. Ergibt die Beurteilung ein geringes Risiko für die Gefährdung der Arbeitnehmer können Schutzmassnahmen entsprechend dem Risiko gelockert werden.

8.1 Zu Überwachende Parameter

Expositionsgrenzwert(e) Keine Daten verfügbar

8.2 Begrenzung und Überwachung der Exposition

Persönliche Schutzausrüstung

Übliche Hygiene befolgen.
Von Nahrungsmitteln, Getränken und Futtermitteln fernhalten.
Kontakt mit Haut, Augen und Kleidung vermeiden.
Vor Pausen und bei Arbeitsende Hände waschen.
Bei der Arbeit nicht essen, trinken, rauchen.

Augen-/Gesichtschutz

Dichtschliessende Schutzbrille (EN 166)

Haut-/Körperschutz

Langärmelige Arbeitskleidung

Handschutz

Normalerweise nicht notwendig. Schutzhandschuhe gegen Chemikalien empfohlen (EN 374)

Atemschutz

Bei der Einwirkung von Staub Atemschutzgerät tragen.

Begrenzung und Überwachung der Umweltexposition

Nicht in die Kanalisation oder Gewässer gelangen lassen.

Nationale Anforderungen in Abschnitt 13

13. Hinweise zur Entsorgung

13.1 Verfahren der Abfallbehandlung

Ungebrauchtes Produkt

Nicht in die Kanalisation gelangen lassen.
Unter Beachtung der örtlichen behördlichen Bestimmungen beseitigen.
VeVa-Code: 06 03 99

Ungereinigte Verpackung

Wie ungebrauchtes Produkt entsorgen.

Gereinigte Verpackung

Die Wiederverwendung (Recycling) ist, wenn möglich, der Entsorgung oder Verbrennung vorzuziehen.

Nationale Anforderungen in Abschnitt 15

15. Rechtsvorschriften

15.1: Vorschriften zu Sicherheit, Gesundheits- und Umweltschutzspezifische Rechtsvorschriften für den Stoff oder das Gemisch

Rechtsvorschriften

Das Produkt ist gemäss Verordnung (EG) Nr. 1272/2008 nicht als Gefährlich eingestuft und gekennzeichnet.

Nationale Vorschriften

Wassergefährdungsklasse

Ist nicht als gewässergefährdend einzustufen.

Lagerklasse

11/13 (CH)

Sonstige relevanten Daten:

Keine Daten Vorhanden.

15.2 Stoffsicherheitsbeurteilung

Es liegen keine Informationen vor.

Gemäss Anhang 2 Ziffer 3.2 ChemV gilt: Wo nach Anhang II der EU-REACH-Verordnung in den Abschnitten 1, 7, 8, 13 und 15 des Sicherheitsdatenblatts auf nationales Recht verwiesen werden muss, müssen die einschlägigen Bestimmungen des Schweizer Rechts angegeben werden.

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

1.1 Product identifier

- Trade name — CASO® FOOD FLAKES
- Chemical name — Calcium chloride dihydrated
- REACH : Registration number — 01-2119494219-28

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

Uses of the Substance/Mixture

- Agriculture industry
- Food additives for use in foodstuffs intended for human consumption

1.3 Details of the supplier of the safety data sheet

Company

SOLVAY CHEMICALS INTERNATIONAL SA
RUE DE RANSBEEK, 310
1120, BRUXELLES
BELGIUM
Tel: +32-2-2642111
Fax: +32-2-2641802

Fornitore / Supplier: BRENNTAG
Milanofiori Strada 6, Pal. A/13 20057 Assago (MI), Italy
Tel : +39 02 48333 0
Email : infoSDS@brenntag.it

E-mail address

manager.sds@solvay.com

1.4 Emergency telephone number

+44(0)1235 239 670 [CareChem 24]

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (Regulation (EC) No 1272/2008)

Eye irritation, Category 2 — H319: Causes serious eye irritation.

2.2 Label elements

Regulation (EC) No 1272/2008

Pictogram

Signal word

- Warning

Hazard statements

- H319 — Causes serious eye irritation.

Precautionary statements

Prevention

- P264 — Wash skin thoroughly after handling.
- P280 — Wear eye protection/ face protection.

Response

- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337 + P313 If eye irritation persists: Get medical advice/ attention.

2.3 Other hazards which do not result in classification

Ecological information

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

Toxicological information

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

SECTION 3: Composition/information on ingredients

3.1 Substance

- Chemical name Calcium chloride dihydrated
- Formula CaCl2.2H2O

Information on Components and Impurities

Chemical name	Identification number	Classification Regulation (EC) No 1272/2008	SCL, M-factor, ATE	Concentration [%]
Calcium chloride dihydrate	CAS-No. : 10035-04-8	Eye irritation, Category 2 ; H319	ATE (Oral): 2.301 mg/kg ATE (Dermal): > 5.000 mg/kg	>= 96 - <= 100
	Registration number: 01-2119494219-28-xxxx			

For the full text of the H-Statements mentioned in this Section, see Section 16.

3.2 Mixture

- Not applicable, this product is a substance.

SECTION 4: First aid measures

4.1 Description of first aid measures

In case of inhalation

- Move to fresh air.
- If symptoms persist, call a physician.

In case of skin contact

- Wash off with soap and water.
- If symptoms persist, call a physician.

In case of eye contact

- In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- In the case of difficulty of opening the lids, administer an analgesic eye wash (oxybuprocaine).
- If eye irritation persists, consult a specialist.

In case of ingestion

- Do NOT induce vomiting.
- Do not give anything to drink.
- Obtain medical attention.
- Show this sheet to the doctor.

4.2 Most important symptoms and effects, both acute and delayed

In case of inhalation

Effects
- May cause nose, throat, and lung irritation.

In case of skin contact

Effects
- Prolonged skin contact may cause skin irritation.

In case of eye contact

Symptoms
- Irritation
- Redness
- Lachrymation

Effects
- Risk of temporary eye lesions.

In case of ingestion

Symptoms
- Nausea
- Abdominal pain

Effects
- Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

4.3 Indication of any immediate medical attention and special treatment needed

- no data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

- Water may be ineffective.

5.2 Special hazards arising from the substance or mixture

- Not combustible.
- Water reactive

5.3 Advice for firefighters

Special protective equipment for firefighters

- In the event of fire, wear self-contained breathing apparatus.
- Use personal protective equipment.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel

- Evacuate personnel to safe areas.
- Avoid dust formation.

Advice for emergency responders

- Use personal protective equipment.
- Sweep up to prevent slipping hazard.
- Prevent further leakage or spillage.

6.2 Environmental precautions

- Should not be released into the environment.
- Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

- Pick up and transfer to properly labelled containers.
- Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

- Refer to protective measures listed in sections 7 and 8.
- For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Ensure adequate ventilation.
- Minimize dust generation and accumulation.
- Avoid contact with skin and eyes.
- Keep away from incompatible products

Hygiene measures

- Eye wash bottles or eye wash stations in compliance with applicable standards.
- When using do not eat, drink or smoke.
- Wash hands before breaks and at the end of workday.
- Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

- Store in original container.
- Keep in a well-ventilated place.
- Keep in a dry place.
- Keep in properly labelled containers.
- Keep container closed.
- In bulk: in silo or in heap (covered and isolated from the ground) on a well-drained surface.

- Keep away from:
- Incompatible products

Packaging material

Suitable material

- Polyethylene
- Polypropylene

- Plastic material PVDF, PTFE, PFA.

Unsuitable material
- Aluminium

7.3 Specific end use(s)

- Contact your supplier for additional information

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace occupational exposure limits

Components	Value type	Value	Basis
Calcium chloride dihydrate	TWA	6,6 mg/m3	Solvay Acceptable Exposure Limit

Derived No Effect Level (DNEL) / Derived minimal effect level (DMEL)

Product name	Population	Route of exposure	Potential health effects	Exposure time	Value	Remarks
Calcium chloride dihydrate	Workers	Inhalation	Acute local effects		13 mg/m3	
	Workers	Inhalation	Long-term local effects		6,6 mg/m3	
	Consumers	Inhalation	Acute local effects		6,6 mg/m3	
	Consumers	Inhalation	Long-term local effects		3,3 mg/m3	

8.2 Exposure controls

Control measures

Engineering measures
- Provide appropriate exhaust ventilation at places where dust is formed.
- Apply technical measures to comply with the occupational exposure limits.

Individual protection measures

Respiratory protection
- Respirator with a particle filter (EN 143)
- Recommended Filter type: P2 filter

Hand protection
- Wear suitable gloves.

Suitable material
- PVC
- Neoprene
- Natural Rubber

Eye protection
- Dust proof goggles obligatory.

Skin and body protection
- Dust impervious protective suit
- Apron/boots of PVC, neoprene in case of dusts.

Hygiene measures
- Eye wash bottles or eye wash stations in compliance with applicable standards.
- When using do not eat, drink or smoke.

- Wash hands before breaks and at the end of workday.
- Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls

- Dispose of rinse water in accordance with local and national regulations.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	solid
Form	hygroscopic, flakes
Colour	white off-white
Odour	odourless
Odour Threshold	No data available
Melting point/freezing point	Melting point/range: 176 °C Decomposition: yes
Initial boiling point and boiling range	Boiling point/boiling range: > 1.600 °C Calcium chloride
Flammability (solid, gas)	The product is not flammable.
Flammability (liquids)	No data available
Flammability/Explosive limit	No data available
Flash point	Not applicable
Auto-ignition temperature	No data available
Decomposition temperature	176 °C
pH	9,0 - 10,5 (100 g/l) (20 °C) Calcium chloride pKa: Not applicable
Viscosity	Viscosity, dynamic : Not applicable
Solubility	Water solubility: ca. 745 g/l (20 °C)Dissolution with heat release, Calcium chloride Solubility in other solvents: Alcohol: soluble Acetic acid: soluble Acetone: soluble
Partition coefficient: n-octanol/water	Not applicable
Vapour pressure	negligible

Density	Bulk density: 0,8 - 0,9 kg/dm3
Relative density	1,85 (25 °C)
Relative vapor density	No data available
Particle characteristics	Particle size: <= 8 mm
Evaporation rate (Butylacetate = 1)	Not applicable

9.2 Other information

Explosiveness	Not explosive
Oxidizing properties	Not considered as oxidizing
Self-ignition	Not applicable
Molecular weight	147,02 g/mol

SECTION 10: Stability and reactivity

10.1 Reactivity

- hygroscopic
- Potential for exothermic hazard

10.2 Chemical stability

- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

- Reacts violently with water.

10.4 Conditions to avoid

- Exposure to moisture

10.5 Incompatible materials

- oxidising substances
- Keep away from reducing agents.
- May be corrosive to metals (aqueous solution).

10.6 Hazardous decomposition products

- none

SECTION 11: Toxicological information

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

Acute toxicity

Acute oral toxicity

Calcium chloride dihydrate	LD50 : 2.301 mg/kg - Rat , male and female Method: OECD Test Guideline 401 Test substance: Calcium chloride Gavage Unpublished reports
Acute inhalation toxicity	No data available

Acute dermal toxicity

Calcium chloride dihydrate	LD50 : > 5.000 mg/kg - Rabbit , male and female Test substance: Calcium chloride No mortality observed at this dose. Unpublished reports

Acute toxicity (other routes of administration)	No data available

Skin corrosion/irritation

Calcium chloride dihydrate	Rabbit No skin irritation Method: OECD Test Guideline 404 Test substance: Calcium chloride Occlusive Unpublished reports

Serious eye damage/eye irritation

Calcium chloride dihydrate	Rabbit Causes serious eye irritation. Method: OECD Test Guideline 405 Test substance: Calcium chloride dihydrate Unpublished reports

Respiratory or skin sensitisation

Calcium chloride dihydrate	Not classified as sensitising by skin contact according to GHS criteria

Mutagenicity

Genotoxicity in vitro

Calcium chloride dihydrate	Ames test Strain: Salmonella typhimurium with and without metabolic activation negative Method: OECD Test Guideline 471 Test substance: Calcium chloride Published data Chromosome aberration test in vitro Strain: Chinese hamster lung cells without metabolic activation negative Method: OECD Test Guideline 473 Test substance: Calcium chloride Published data

Genotoxicity in vivo	No data available
Carcinogenicity	No data available

Toxicity for reproduction and development

Toxicity to reproduction/Fertility	No data available

Developmental Toxicity/Teratogenicity

Calcium chloride dihydrate	Rabbit, female, Oral General Toxicity Maternal NOAEL: > 169 mg/kg bw/day Teratogenicity NOAEL:> 169mg/kg bw/day Method: OECD Test Guideline 414 no teratogenic effects have been observed, Unpublished reports

Mouse, female, Oral
General Toxicity Maternal NOAEL: > 189 mg/kg bw/day
Teratogenicity NOAEL:> 189mg/kg bw/day
Method: OECD Test Guideline 414
no teratogenic effects have been observed, Unpublished reports

Rat, female, Oral
General Toxicity Maternal NOAEL: > 176 mg/kg bw/day
Teratogenicity NOAEL:> 176mg/kg bw/day
Method: OECD Test Guideline 414
no teratogenic effects have been observed, Unpublished reports

STOT

STOT - single exposure

Calcium chloride dihydrate: The substance or mixture is not classified as specific target organ toxicant, single exposure according to GHS criteria.

STOT - repeated exposure: No data available

Aspiration toxicity: No data available

11.2 Information on other hazards

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

Experience with human exposure: No data available

SECTION 12: Ecological information

12.1 Toxicity

Aquatic Compartment

Acute toxicity to fish

Calcium chloride dihydrate: LC50 - 96 h : 4.630 mg/l - Pimephales promelas (fathead minnow)
static test
Analytical monitoring: yes

Test substance: Calcium chloride
Not harmful to fish (LC/LL50 > 100 mg/L)
Fresh water
Published data

Acute toxicity to daphnia and other aquatic invertebrates

Calcium chloride dihydrate: EC50 - 48 h : 2.400 mg/l - Daphnia magna (Water flea)
static test
Test substance: Calcium chloride
Method: OECD Test Guideline 202
Not harmful to aquatic invertebrates. (EC/EL50 > 100 mg/L)
Fresh water
Unpublished reports

Toxicity to aquatic plants

Calcium chloride dihydrate	ErC50 - 72 h : > 4.000 mg/l - Pseudokirchneriella subcapitata (green algae) End point: Growth rate Test substance: Calcium chloride Method: OECD Test Guideline 201 Not harmful to algae (EC/EL50 > 100 mg/L) Fresh water Unpublished reports
Toxicity to microorganisms	No data available
Chronic toxicity to fish	No data available

Chronic toxicity to daphnia and other aquatic invertebrates

Calcium chloride dihydrate	NOEC: 320 mg/l - 21 Days - Daphnia magna (Water flea) Reproduction Test Test substance: Calcium chloride No adverse chronic effect observed up to and including the threshold of 1 mg/L. Published data

12.2 Persistence and degradability

Abiotic degradation	No data available
Physical- and photo-chemical elimination	No data available

Biodegradation

Biodegradability

Calcium chloride dihydrate	Not applicable (inorganic substance)

Degradability assessment

Calcium chloride dihydrate	Not applicable (inorganic substance)

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water	No data available
Bioconcentration factor (BCF)	No data available

12.4 Mobility in soil

Adsorption potential (Koc)	No data available
Known distribution to environmental compartments	No data available

12.5 Results of PBT and vPvB assessment

Calcium chloride dihydrate	Not applicable (inorganic substance)

12.6 Endocrine disrupting properties	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
12.7 Other adverse effects	No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Disposal

- Contact waste disposal services.
- In accordance with local and national regulations.

Advice on cleaning and disposal of packaging

- Where possible recycling is preferred to disposal or incineration.
- Clean container with water.
- Dispose of rinse water in accordance with local and national regulations.
- Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities.

SECTION 14: Transport information

ADN/ADNR
not regulated

ADR
not regulated

RID
not regulated

IMDG
not regulated

IATA
not regulated

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transport regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	Calcium chloride dihydrate Requirements of Annex XVII to Regulation (EC) 1907/2006 apply to this product. The precise list of restricted uses is available in the corresponding entry of this annex. Number on list: 75 *Extract of entry 75: Shall not be placed on the market in mixtures for use for tattooing purposes, and mixtures containing any such substances shall not be used for tattooing purposes, after 4 January 2022.

Notification status

Inventory Information	Status
United States TSCA Inventory	- All substances listed as active on the TSCA inventory
Canadian Domestic Substances List (DSL)	- Listed on Inventory
Australian Inventory of Industrial Chemicals (AIIC)	- Listed on Inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	- Listed on Inventory
Korea. Korean Existing Chemicals Inventory (KECI)	- Listed on Inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	- Listed on Inventory

Philippines Inventory of Chemicals and Chemical Substances (PICCS)	- Listed on Inventory
Taiwan Chemical Substance Inventory (TCSI)	- Listed on Inventory
New Zealand. Inventory of Chemical Substances	- All components are listed on the NZIoC inventory. Additional HSNO obligations may apply. Please refer to Section 15 of SDS for New Zealand.
EU. European Registration, Evaluation, Authorization and Restriction of Chemical (REACH)	- When purchased from a Solvay legal entity based in the EEA (""European" "Economic Area""), this product is compliant with the registration" provisions of the REACH Regulation (EC) No. 1907/2006 as all its components are either excluded, exempt, and/or registered. When purchased from a legal entity outside of the EEA, please contact your local representative for additional information.

15.2 Chemical safety assessment

- A Chemical Safety Assessment has been carried out for this substance.
- Exposure Scenario prepared in accordance with the latest ESCOM format.

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

- H319: Causes serious eye irritation.

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

- ADR: European Agreement on International Carriage of Dangerous Goods by Road.
- ADN: European Agreement on the International Carriage of Dangerous Goods by Inland Waterways.
- RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
- IATA: International Air Transport Association.
- ICAO-TI: Technical Instructions for Safe Transport of Dangerous Goods by Air.
- IMDG: International Maritime Dangerous Goods.
- TWA: Time weighted average
- ATE: Estimated value of acute toxicity
- EC: European Community number
- CAS: Chemical Abstracts Service.
- LD50: Substance that causes 50% (half) death in the test animals group (Median Fatal Dose).
- LC50: Substance concentration causing 50% (half) death in the test animals group.
- EC50: Effective Concentration of the substance causing the maximum of 50%.
- PBT: Persistent, Bioaccumulative and Toxic substance.
- vPvB: Very Persistent and Very Bioaccumulative.
- GHS/CLP/SEA: Classification, labeling, packaging regulation
- DNEL: Derived No Effect Level
- PNEC: Predicted No Effect Concentration
- STOT: Specific Target Organ Toxicity

Not all acronyms listed above are referenced in this SDS.

Further information

- Distribute new edition to clients
- Update
- See section 3

NB: In this document the numerical separator of the thousands is the "." (point), the decimal separator is "," (comma).
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in any other manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.

Annex
: 81

ES1: Formulation & (re)packing of substances and mixtures, Distribution of substance

1.1. Title section

Structured Short Title	:	Formulation or re-packing

Environment	
CS1	ERC2
Worker	
CS2	PROC1
CS3	PROC2
CS4	PROC3
CS5	PROC4
CS6	PROC5
CS7	PROC8b, CS2, PROC26
CS8	PROC8a, CS2, PROC26
CS9	PROC9, PROC26
CS10	PROC15, PROC26
CS11	PROC14
CS12	PROC8a, PROC26
CS13	PROC8b, PROC26
CS14	PROC8a, PROC28
CS15	PROC28

1.2. Conditions of use affecting exposure

1.2.1. Control of environmental exposure: Formulation into mixture (ERC2)

1.2.2. Control of worker exposure: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

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

Physical form of product	:	Solid, medium dustiness Liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Without respiratory protection		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

1.2.3. Control of worker exposure: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness Liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a basic standard of general ventilation (1 to 3 air changes per hour). Occupational Health and Safety Management System: Advanced. without local exhaust ventilation Inhalation - minimum efficiency of 0 %		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Without respiratory protection		

Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

1.2.4. Control of worker exposure: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness Liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a basic standard of general ventilation (1 to 3 air changes per hour). Occupational Health and Safety Management System: Advanced. without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Use suitable eye protection.		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

1.2.5. Control of worker exposure: Chemical production where opportunity for exposure arises (PROC4)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness Liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %		
Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear suitable respiratory protection. APF 10 Inhalation - minimum efficiency of 90 %		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

1.2.6. Control of worker exposure: Mixing or blending in batch processes (PROC5)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness Liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %		
Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Wear suitable respiratory protection. APF 10 Inhalation - minimum efficiency of 90 %		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

1.2.7. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b) / Process sampling (CS2) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness Liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %		
Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

1.2.8. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a) / Process sampling (CS2) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness Liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 1 hours/day
Technical and organisational conditions and measures		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Occupational Health and Safety Management System: Advanced.		

without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Wear suitable respiratory protection. APF 10 Inhalation - minimum efficiency of 90 %		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

1.2.9. Control of worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness Liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %		
Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Use suitable eye protection.		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Wear suitable respiratory protection. APF 10 Inhalation - minimum efficiency of 90 %		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

1.2.10. Control of worker exposure: Use as laboratory reagent (PROC15) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness Liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

1.2.11. Control of worker exposure: Tabletting, compression, extrusion, pelettisation, granulation (PROC14)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness Liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Use suitable eye protection.		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.		

Dermal - minimum efficiency of 90 %		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

1.2.12. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness Liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %		
Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Wear suitable respiratory protection. APF 10 Inhalation - minimum efficiency of 90 %		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

1.2.13. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness Liquid

Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %		
Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

1.2.14. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a) / Manual maintenance (cleaning and repair) of machinery (PROC28)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness Liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		
Handle substance within a closed system. Drain down and flush system prior to equipment break-in or maintenance. Transfer via enclosed lines.		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		

Wear suitable respiratory protection. APF 10 Inhalation - minimum efficiency of 90 %		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

1.2.15. Control of worker exposure: Manual maintenance (cleaning and repair) of machinery (PROC28)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness Liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear suitable respiratory protection. APF 10 Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

1.3. Exposure estimation and reference to its source

1.3.1. Environmental release and exposure: Formulation into mixture (ERC2)

Additional information on exposure estimation
Qualitative approach used to conclude safe use.

1.3.2. Worker exposure: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,01 mg/m³ (ECETOC TRA worker v3)	< 0,01
inhalative		short-term	0,04 mg/m³ (ECETOC TRA worker v3)	< 0,01

1.3.3. Worker exposure: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,5 mg/m³ (ECETOC TRA worker v3)	0,1
inhalative		short-term	2 mg/m³ (ECETOC TRA worker v3)	0,2

1.3.4. Worker exposure: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	1 mg/m³ (ECETOC TRA worker v3)	0,2
inhalative		short-term	4 mg/m³ (ECETOC TRA worker v3)	0,4

1.3.5. Worker exposure: Chemical production where opportunity for exposure arises (PROC4)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,35 mg/m³ (ECETOC TRA worker v3)	0,07
inhalative		short-term	1,4 mg/m³ (ECETOC TRA worker v3)	0,14

1.3.6. Worker exposure: Mixing or blending in batch processes (PROC5)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,35 mg/m³ (ECETOC TRA worker v3)	0,07
inhalative		short-term	1,4 mg/m³ (ECETOC TRA worker v3)	0,14

1.3.7. Worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b) / Process sampling (CS2) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,7 mg/m³ (ECETOC TRA worker v3)	0,14
inhalative		short-term	2,8 mg/m³ (ECETOC TRA worker v3)	0,28

1.3.8. Worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a) / Process sampling (CS2) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,1 mg/m³ (ECETOC TRA worker v3)	0,02
inhalative		short-term	2 mg/m³ (ECETOC TRA worker v3)	0,2

1.3.9. Worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,35 mg/m³ (ECETOC TRA worker v3)	0,07
inhalative		short-term	1,4 mg/m³ (ECETOC TRA worker v3)	0,14

1.3.10. Worker exposure: Use as laboratory reagent (PROC15) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,5 mg/m³ (ECETOC TRA worker v3)	0,1
inhalative		short-term	2 mg/m³ (ECETOC TRA worker v3)	0,2

1.3.11. Worker exposure: Tabletting, compression, extrusion, pelettisation, granulation (PROC14)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	1 mg/m³ (ECETOC TRA worker v3)	0,2
inhalative		short-term	4 mg/m³ (ECETOC TRA worker v3)	0,4

1.3.12. Worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,35 mg/m³ (ECETOC TRA worker v3)	0,07
inhalative		short-term	1,4 mg/m³ (ECETOC TRA worker v3)	0,14

1.3.13. Worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,7 mg/m³ (ECETOC TRA worker v3)	0,14
inhalative		short-term	2,8 mg/m³ (ECETOC TRA worker v3)	0,28

1.3.14. Worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a) / Manual maintenance (cleaning and repair) of machinery (PROC28)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,5 mg/m³ (ECETOC TRA worker v3)	0,1
inhalative		short-term	2 mg/m³ (ECETOC TRA worker v3)	0,2

1.3.15. Worker exposure: Manual maintenance (cleaning and repair) of machinery (PROC28)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,5 mg/m³ (ECETOC TRA worker v3)	0,1
inhalative		short-term	2 mg/m³ (ECETOC TRA worker v3)	0,2

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

Environment
If a DU has OC/RMMs outside specifications in the ES, then the DU can evaluate whether he works inside the boundaries set by the ES through scaling in EUSES.
The main driving parameters are :
- local amount used (tonnage)
- release factor prior to on-site treatment
- on-site wastewater treatment presence and efficiency
- dilution factor

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
Human 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.

ES2: Use at industrial site

2.1. Title section

Structured Short Title	:	Use at industrial sites

Environment	
CS1	ERC6a
CS2	ERC4
Worker	
CS3	PROC1
CS4	PROC2
CS5	PROC3
CS6	PROC4
CS7	PROC5
CS8	PROC6
CS9	OC8, PROC7,
CS10	OC9, PROC7
CS11	OC9, PROC7
CS12	PROC8a, CS2, CS109, PROC26
CS13	PROC8a, CS2, CS110, PROC26
CS14	PROC8b, CS2, CS109, PROC26
CS15	PROC8b, CS2, CS110, PROC26
CS16	PROC8a, CS109, PROC26
CS17	PROC8a, CS110, PROC26
CS18	PROC8b, CS109, PROC26
CS19	PROC8b, CS110, PROC26
CS20	PROC8a, CS39, PROC26
CS21	PROC9, CS109, PROC26, PROC27b
CS22	PROC9, CS110, PROC26

CS23	PROC10
CS24	PROC13
CS25	PROC14
CS26	PROC15, PROC26, PROC27b
CS27	PROC22, PROC27a,
CS28	PROC22, PROC27a,
CS29	PROC23, PROC27a,
CS30	PROC23, PROC27a,
CS31	PROC28, CS82

2.2. Conditions of use affecting exposure

2.2.1. Control of environmental exposure: Use of intermediate (ERC6a)

2.2.2. Control of environmental exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)

2.2.3. Control of worker exposure: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Without respiratory protection		
Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training.		

Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.4. Control of worker exposure: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a basic standard of general ventilation (1 to 3 air changes per hour). Occupational Health and Safety Management System: Advanced. without local exhaust ventilation Inhalation - minimum efficiency of 0 %		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.5. Control of worker exposure: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day

Technical and organisational conditions and measures		
Provide a basic standard of general ventilation (1 to 3 air changes per hour). Occupational Health and Safety Management System: Advanced. without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Use suitable eye protection.		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.6. Control of worker exposure: Chemical production where opportunity for exposure arises (PROC4)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %		
Occupational Health and Safety Management System: Advanced.		
Local exhaust ventilation Inhalation - minimum efficiency of 90 %		
Conditions and measures related to personal protection, hygiene and health evaluation		
Without respiratory protection		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.7. Control of worker exposure: Mixing or blending in batch processes (PROC5)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Wear suitable respiratory protection. APF 10 Dermal - minimum efficiency of 90 %		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Outdoor
Temperature	:	<= 20 °C

2.2.8. Control of worker exposure: Calendering operations (PROC6)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %		
Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		

Use suitable eye protection.		
Wear suitable respiratory protection. APF 10 Dermal - minimum efficiency of 90 %		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.9. Control of worker exposure: Indoor (OC8) / Industrial spraying (PROC7) / Aqueous solution ()

Product (article) characteristics		
Covers concentrations up to 35 %		
Physical form of product	:	liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Exposure duration
Use frequency	:	<= 2 h/day
Technical and organisational conditions and measures		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Occupational Health and Safety Management System: Advanced.		
Local exhaust ventilation Inhalation - minimum efficiency of 95 %		
Ensure that direction of application is only horizontal or downward.		
Conditions and measures related to personal protection, hygiene and health evaluation		
Use suitable eye protection.		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.10. Control of worker exposure: Outdoor (OC9) / Industrial spraying (PROC7)

Product (article) characteristics		
Covers concentrations up to 35 %		
Physical form of product	:	liquid
Amount used, frequency and duration of use (or from service life)		

Duration	:	Exposure duration
Use frequency	:	<= 0,25 h/day
Duration	:	Exposure duration (near field)
Use frequency	:	<= 0,25 h/event
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Advanced.		
Conditions and measures related to personal protection, hygiene and health evaluation		
Use suitable eye protection.		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Wear suitable respiratory protection. APF 20 Inhalation - minimum efficiency of 95 %		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Outdoor
Temperature	:	<= 20 °C

2.2.11. Control of worker exposure: Outdoor (OC9) / Industrial spraying (PROC7)

Product (article) characteristics		
Covers concentrations up to 35 %		
Physical form of product	:	liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Exposure duration
Use frequency	:	<= 2 h/day
Duration	:	Exposure duration (far field)
Use frequency	:	<= 2 h/event
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Advanced.		
Conditions and measures related to personal protection, hygiene and health evaluation		
Use suitable eye protection.		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Outdoor
Temperature	:	<= 20 °C

2.2.12. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a) / Process sampling (CS2) / with local exhaust ventilation (CS109) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 1 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Advanced.		
Local exhaust ventilation Inhalation - minimum efficiency of 90 %		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.13. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a) / Process sampling (CS2) / without local exhaust ventilation (CS110) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 1 hours/day
Technical and organisational conditions and measures		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Wear suitable respiratory protection. APF 10 Inhalation - minimum efficiency of 90 %		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.14. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b) / Process sampling (CS2) / with local exhaust ventilation (CS109) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Advanced.		
Local exhaust ventilation Inhalation - minimum efficiency of 95 %		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.15. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b) / Process sampling (CS2) / without local exhaust ventilation (CS110) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.16. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a) / with local exhaust ventilation (CS109) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %		
Occupational Health and Safety Management System: Advanced.		

Local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.17. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a) / without local exhaust ventilation (CS110) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Dermal - minimum efficiency of 30 %		
Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Wear suitable respiratory protection. APF 10 Inhalation - minimum efficiency of 90 %		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.18. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b) / with local exhaust ventilation (CS109) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %		
Occupational Health and Safety Management System: Advanced.		
Local exhaust ventilation Inhalation - minimum efficiency of 95 %		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.19. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b) / without local exhaust ventilation (CS110) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %		
Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		

Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.20. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a) / Equipment cleaning and maintenance (CS39) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Occupational Health and Safety Management System: Advanced.		
Local exhaust ventilation Inhalation - minimum efficiency of 90 %		
Handle substance within a closed system. Drain down and flush system prior to equipment break-in or maintenance. Transfer via enclosed lines.		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.21. Control of worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9) / with local exhaust ventilation (CS109) / Handling of solid inorganic substances at ambient temperature (PROC26) / Production of metal powders (wet processes) (PROC27b)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %		
Occupational Health and Safety Management System: Advanced.		
Local exhaust ventilation Inhalation - minimum efficiency of 90 %		
Conditions and measures related to personal protection, hygiene and health evaluation		
Use suitable eye protection.		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.22. Control of worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9) / without local exhaust ventilation (CS110) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Conditions and measures related to personal protection, hygiene and health evaluation		

Use suitable eye protection.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %
Wear suitable respiratory protection. APF 10 Inhalation - minimum efficiency of 90 %

Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.23. Control of worker exposure: Roller application or brushing (PROC10)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day

Technical and organisational conditions and measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %
Occupational Health and Safety Management System: Advanced.
without local exhaust ventilation

Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %
Use suitable eye protection.
Wear suitable respiratory protection. APF 10 Inhalation - minimum efficiency of 90 %

Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.24. Control of worker exposure: Treatment of articles by dipping and pouring (PROC13)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness

Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.25. Control of worker exposure: Tabletting, compression, extrusion, pelettisation, granulation (PROC14)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Use suitable eye protection.		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.26. Control of worker exposure: Use as laboratory reagent (PROC15) / Handling of solid inorganic substances at ambient temperature (PROC26) / Production of metal powders (wet processes) (PROC27b)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.27. Control of worker exposure: Manufacturing and processing of minerals and/or metals at substantially elevated temperature (PROC22) / Production of metal powders (hot processes) (PROC27a) / process temperature >= melting point ()

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Occupational Health and Safety Management System: Advanced.		
Local exhaust ventilation Inhalation - minimum efficiency of 90 %		

Conditions and measures related to personal protection, hygiene and health evaluation		
Without respiratory protection		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.28. Control of worker exposure: Manufacturing and processing of minerals and/or metals at substantially elevated temperature (PROC22) / Production of metal powders (hot processes) (PROC27a) / process temperature >= melting point ()

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Occupational Health and Safety Management System: Advanced.		
Local exhaust ventilation Inhalation - minimum efficiency of 90 %		
Conditions and measures related to personal protection, hygiene and health evaluation		
Without respiratory protection		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.29. Control of worker exposure: Open processing and transfer operations at substantially elevated temperature (PROC23) / Production of metal powders (hot processes) (PROC27a) / process temperature =< melting point ()

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness

Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Occupational Health and Safety Management System: Advanced.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Without respiratory protection		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.30. Control of worker exposure: Open processing and transfer operations at substantially elevated temperature (PROC23) / Production of metal powders (hot processes) (PROC27a) / process temperature >= melting point ()

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a good standard of controlled ventilation (5 to 10 air changes per hour). Inhalation - minimum efficiency of 70 %		
Occupational Health and Safety Management System: Advanced.		
Local exhaust ventilation Inhalation - minimum efficiency of 90 %		
Conditions and measures related to personal protection, hygiene and health evaluation		
Without respiratory protection		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Other conditions affecting workers exposure		

Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.2.31. Control of worker exposure: Manual maintenance (cleaning and repair) of machinery (PROC28) / Non-dedicated facility (CS82)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Occupational Health and Safety Management System: Advanced.		
Local exhaust ventilation		
Handle substance within a closed system. Drain down and flush system prior to equipment break-in or maintenance. Transfer via enclosed lines.		
Conditions and measures related to personal protection, hygiene and health evaluation		
Without respiratory protection		
Use suitable eye protection.		
Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training. Dermal - minimum efficiency of 90 %		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

2.3. Exposure estimation and reference to its source

2.3.1. Environmental release and exposure: Use of intermediate (ERC6a)

Additional information on exposure estimation
Qualitative approach used to conclude safe use.

2.3.2. Environmental release and exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)

Additional information on exposure estimation
Qualitative approach used to conclude safe use.

2.3.3. Worker exposure: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,01 mg/m³ (ECETOC TRA worker v3)	< 0,01
inhalative		short-term	0,04 mg/m³ (ECETOC TRA worker v3)	< 0,01

2.3.4. Worker exposure: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,5 mg/m³ (ECETOC TRA worker v3)	0,1
inhalative		short-term	2 mg/m³ (ECETOC TRA worker v3)	0,2

2.3.5. Worker exposure: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	1 mg/m³ (ECETOC TRA worker v3)	0,2
inhalative		short-term	4 mg/m³ (ECETOC TRA worker v3)	0,4

2.3.6. Worker exposure: Chemical production where opportunity for exposure arises (PROC4)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,35 mg/m³ (ECETOC TRA worker v3)	0,07
inhalative		short-term	1,4 mg/m³ (ECETOC TRA worker v3)	0,14

2.3.7. Worker exposure: Mixing or blending in batch processes (PROC5)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,35 mg/m³ (ECETOC TRA worker v3)	0,07
inhalative		short-term	1,4 mg/m³ (ECETOC TRA worker v3)	0,14

2.3.8. Worker exposure: Calendering operations (PROC6)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,35 mg/m³ (ECETOC TRA worker v3)	0,07

inhalative		short-term	1,4 mg/m³	0,14

2.3.9. Worker exposure: Indoor (OC8) / Industrial spraying (PROC7) / Aqueous solution ()

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	1,2 mg/m³ (ART v1.5)	0,24
inhalative		short-term	9,6 mg/m³ (ART v1.5)	0,96

2.3.10. Worker exposure: Outdoor (OC9) / Industrial spraying (PROC7)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	1,2 mg/m³ (ART v1.5)	0,24
inhalative		short-term	9,6 mg/m³ (ART v1.5)	0,96

2.3.11. Worker exposure: Outdoor (OC9) / Industrial spraying (PROC7)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	1,2 mg/m³ (ART v1.5)	0,24
inhalative		short-term	9,6 mg/m³ (ART v1.5)	0,96

2.3.12. Worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a) / Process sampling (CS2) / with local exhaust ventilation (CS109) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,1 mg/m³ (ECETOC TRA worker v3)	0,02
inhalative		short-term	2 mg/m³ (ECETOC TRA worker v3)	0,2

2.3.13. Worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a) / Process sampling (CS2) / without local exhaust ventilation (CS110) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,1 mg/m³ (ECETOC TRA worker v3)	0,02
inhalative		short-term	2 mg/m³ (ECETOC TRA worker v3)	0,2

2.3.14. Worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b) / Process sampling (CS2) / with local exhaust ventilation (CS109) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,05 mg/m³ (ECETOC TRA worker v3)	0,01
inhalative		short-term	0,2 mg/m³ (ECETOC TRA worker v3)	0,02

2.3.15. Worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b) / Process sampling (CS2) / without local exhaust ventilation (CS110) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	1 mg/m³ (ECETOC TRA worker v3)	0,2
inhalative		short-term	4 mg/m³ (ECETOC TRA worker v3)	0,4

2.3.16. Worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a) / with local exhaust ventilation (CS109) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,35 mg/m³ (ECETOC TRA worker v3)	0,07
inhalative		short-term	1,4 mg/m³ (ECETOC TRA worker v3)	0,14

2.3.17. Worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a) / without local exhaust ventilation (CS110) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,35 mg/m³ (ECETOC TRA worker v3)	0,07
inhalative		short-term	1,4 mg/m³ (ECETOC TRA worker v3)	0,14

2.3.18. Worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b) / with local exhaust ventilation (CS109) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,035 mg/m³ (ECETOC TRA worker v3)	< 0,01
inhalative		short-term	0,14 mg/m³ (ECETOC TRA worker v3)	0,014

2.3.19. Worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b) / without local exhaust ventilation (CS110) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,7 mg/m³ (ECETOC TRA worker v3)	0,14
inhalative		short-term	2,8 mg/m³ (ECETOC TRA worker v3)	0,28

2.3.20. Worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a) / Equipment cleaning and maintenance (CS39) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,5 mg/m³ (ECETOC	0,1

			TRA worker v3)	
inhalative		short-term	2 mg/m³ (ECETOC TRA worker v3)	0,2

2.3.21. Worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9) / with local exhaust ventilation (CS109) / Handling of solid inorganic substances at ambient temperature (PROC26) / Production of metal powders (wet processes) (PROC27b)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,35 mg/m³ (ECETOC TRA worker v3)	0,07
inhalative		short-term	1,4 mg/m³ (ECETOC TRA worker v3)	0,14

2.3.22. Worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9) / without local exhaust ventilation (CS110) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,5 mg/m³ (ECETOC TRA worker v3)	0,1
inhalative		short-term	2 mg/m³ (ECETOC TRA worker v3)	0,2

2.3.23. Worker exposure: Roller application or brushing (PROC10)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,35 mg/m³ (ECETOC TRA worker v3)	0,07
inhalative		short-term	1,4 mg/m³ (ECETOC TRA worker v3)	0,14

2.3.24. Worker exposure: Treatment of articles by dipping and pouring (PROC13)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	1 mg/m³ (ECETOC TRA worker v3)	0,2
inhalative		short-term	4 mg/m³ (ECETOC TRA worker v3)	0,4

2.3.25. Worker exposure: Tabletting, compression, extrusion, pelettisation, granulation (PROC14)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	1 mg/m³ (ECETOC TRA worker v3)	0,2
inhalative		short-term	4 mg/m³ (ECETOC TRA worker v3)	0,4

2.3.26. Worker exposure: Use as laboratory reagent (PROC15) / Handling of solid inorganic substances at ambient temperature (PROC26) / Production of metal powders (wet processes) (PROC27b)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR

inhalative		long-term	0,5 mg/m³ (ECETOC TRA worker v3)	0,1
inhalative		short-term	2 mg/m³ (ECETOC TRA worker v3)	0,2

2.3.27. Worker exposure: Manufacturing and processing of minerals and/or metals at substantially elevated temperature (PROC22) / Production of metal powders (hot processes) (PROC27a) / process temperature >= melting point ()

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,1 mg/m³ (ECETOC TRA worker v3)	0,02
inhalative		short-term	0,4 mg/m³ (ECETOC TRA worker v3)	0,04

2.3.28. Worker exposure: Manufacturing and processing of minerals and/or metals at substantially elevated temperature (PROC22) / Production of metal powders (hot processes) (PROC27a) / process temperature >= melting point ()

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,1 mg/m³ (ECETOC TRA worker v3)	0,02
inhalative		short-term	0,4 mg/m³ (ECETOC TRA worker v3)	0,04

2.3.29. Worker exposure: Open processing and transfer operations at substantially elevated temperature (PROC23) / Production of metal powders (hot processes) (PROC27a) / process temperature =< melting point ()

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	1 mg/m³ (ECETOC TRA worker v3)	0,2
inhalative		short-term	4 mg/m³ (ECETOC TRA worker v3)	0,4

2.3.30. Worker exposure: Open processing and transfer operations at substantially elevated temperature (PROC23) / Production of metal powders (hot processes) (PROC27a) / process temperature >= melting point ()

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,03 mg/m³ (ECETOC TRA worker v3)	< 0,01
inhalative		short-term	0,12 mg/m³ (ECETOC TRA worker v3)	0,012

2.3.31. Worker exposure: Manual maintenance (cleaning and repair) of machinery (PROC28) / Non-dedicated facility (CS82)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,5 mg/m³ (ECETOC TRA worker v3)	0,1
inhalative		short-term	2 mg/m³ (ECETOC TRA worker v3)	0,2

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

Environment
If a DU has OC/RMMs outside specifications in the ES, then the DU can evaluate whether he works inside the boundaries set by the ES through scaling in EUSES.
The main driving parameters are :
- local amount used (tonnage)
- release factor prior to on-site treatment
- on-site wastewater treatment presence and efficiency
- dilution factor

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
Human 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.

ES3: Professional use, Service life (professional worker), Indoor

3.1. Title section

Structured Short Title	:	Widespread use by professional workers

Environment	
CS1	ERC8a
Worker	
CS2	PROC1
CS3	PROC2
CS4	PROC3
CS5	PROC4
CS6	PROC5
CS7	PROC8a, PROC26
CS8	PROC8b, PROC26
CS9	PROC9, PROC26
CS10	PROC10
CS11	PROC11, OC8,
CS12	PROC15, PROC26
CS13	PROC19
CS14	PROC20
CS15	PROC8a, PROC28
CS16	PROC28

3.2. Conditions of use affecting exposure

3.2.1. Control of environmental exposure: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a)

3.2.2. Control of worker exposure: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Product (article) characteristics

Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
without local exhaust ventilation		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Conditions and measures related to personal protection, hygiene and health evaluation		
Without respiratory protection		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

3.2.3. Control of worker exposure: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
without local exhaust ventilation		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Without respiratory protection		

Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

3.2.4. Control of worker exposure: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
without local exhaust ventilation		
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %		
Conditions and measures related to personal protection, hygiene and health evaluation		
Without respiratory protection		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

3.2.5. Control of worker exposure: Chemical production where opportunity for exposure arises (PROC4)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day

Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
Local exhaust ventilation Inhalation - minimum efficiency of 80 %		
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %		
Conditions and measures related to personal protection, hygiene and health evaluation		
Without respiratory protection		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

3.2.6. Control of worker exposure: Mixing or blending in batch processes (PROC5)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
Local exhaust ventilation Inhalation - minimum efficiency of 80 %		
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Without respiratory protection		
Use suitable eye protection.		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

3.2.7. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
Local exhaust ventilation Inhalation - minimum efficiency of 80 %		
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

3.2.8. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
Local exhaust ventilation Inhalation - minimum efficiency of 80 %		

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %
Use suitable eye protection.
Without respiratory protection
Other conditions affecting workers exposure

Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

3.2.9. Control of worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9) / Handling of solid inorganic substances at ambient temperature (PROC26)

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

Physical form of product	:	Solid, medium dustiness

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

Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day

Technical and organisational conditions and measures
Occupational Health and Safety Management System: Basic.
Local exhaust ventilation Inhalation - minimum efficiency of 80 %
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %
Conditions and measures related to personal protection, hygiene and health evaluation
Use suitable eye protection.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %
Without respiratory protection
Other conditions affecting workers exposure

Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

3.2.10. Control of worker exposure: Roller application or brushing (PROC10)

Product (article) characteristics

Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %		
Local exhaust ventilation Inhalation - minimum efficiency of 80 %		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

3.2.11. Control of worker exposure: Non-industrial spraying (PROC11) / Indoor (OC8) / Aqueous solution ()

Product (article) characteristics		
Covers concentrations up to 35 %		
Physical form of product	:	liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 2 hours/day
Technical and organisational conditions and measures		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
Occupational Health and Safety Management System: Advanced.		
Local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Use suitable eye protection.		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Without respiratory protection		

Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

3.2.12. Control of worker exposure: Use as laboratory reagent (PROC15) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
without local exhaust ventilation		
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

3.2.13. Control of worker exposure: Manual activities involving hand contact (PROC19)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day

Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %		
Local exhaust ventilation Inhalation - minimum efficiency of 80 %		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

3.2.14. Control of worker exposure: Use of functional fluids in small devices (PROC20)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
Provide a basic standard of general ventilation (1 to 3 air changes per hour).		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

3.2.15. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a) / Manual maintenance (cleaning and repair) of machinery (PROC28)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
without local exhaust ventilation		
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Inhalation - minimum efficiency of 30 %		
Handle substance within a closed system. Drain down and flush system prior to equipment break-in or maintenance. Transfer via enclosed lines.		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Wear suitable respiratory protection. APF 10 Inhalation - minimum efficiency of 90 %		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

3.2.16. Control of worker exposure: Manual maintenance (cleaning and repair) of machinery (PROC28)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		

Provide a basic standard of general ventilation (1 to 3 air changes per hour).
Local exhaust ventilation
Handle substance within a closed system. Drain down and flush system prior to equipment break-in or maintenance. Transfer via enclosed lines.
Conditions and measures related to personal protection, hygiene and health evaluation
Without respiratory protection
Use suitable eye protection.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %
Other conditions affecting workers exposure

Indoor or outdoor use	:	Indoor
Temperature	:	<= 20 °C

3.3. Exposure estimation and reference to its source

3.3.1. Environmental release and exposure: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a)

Additional information on exposure estimation
Qualitative approach used to conclude safe use.

3.3.2. Worker exposure: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,01 mg/m³ (ECETOC TRA worker v3)	< 0,01
inhalative		short-term	0,04 mg/m³ (ECETOC TRA worker v3)	< 0,01

3.3.3. Worker exposure: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	1 mg/m³ (ECETOC TRA worker v3)	0,2
inhalative		short-term	4 mg/m³ (ECETOC TRA worker v3)	0,4

3.3.4. Worker exposure: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,7 mg/m³ (ECETOC TRA worker v3)	0,14

inhalative		short-term	2,8 mg/m³ (ECETOC TRA worker v3)	0,28

3.3.5. Worker exposure: Chemical production where opportunity for exposure arises (PROC4)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,7 mg/m³ (ECETOC TRA worker v3)	0,14
inhalative		short-term	2,8 mg/m³ (ECETOC TRA worker v3)	0,28

3.3.6. Worker exposure: Mixing or blending in batch processes (PROC5)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,7 mg/m³ (ECETOC TRA worker v3)	0,14
inhalative		short-term	2,8 mg/m³ (ECETOC TRA worker v3)	0,28

3.3.7. Worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	1,4 mg/m³ (ECETOC TRA worker v3)	0,28
inhalative		short-term	5,6 mg/m³ (ECETOC TRA worker v3)	0,56

3.3.8. Worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,7 mg/m³ (ECETOC TRA worker v3)	0,14
inhalative		short-term	2,8 mg/m³ (ECETOC TRA worker v3)	0,28

3.3.9. Worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,7 mg/m³ (ECETOC TRA worker v3)	0,14
inhalative		short-term	2,8 mg/m³ (ECETOC TRA worker v3)	0,28

3.3.10. Worker exposure: Roller application or brushing (PROC10)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,7 mg/m³ (ECETOC TRA worker v3)	0,14
inhalative		short-term	2,8 mg/m³ (ECETOC TRA worker v3)	0,28

3.3.11. Worker exposure: Non-industrial spraying (PROC11) / Indoor (OC8) / Aqueous solution ()

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	1,2 mg/m³ (ART v1.5)	0,24
inhalative		short-term	9,6 mg/m³ (ART v1.5)	0,96

3.3.12. Worker exposure: Use as laboratory reagent (PROC15) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,35 mg/m³ (ECETOC TRA worker v3)	0,07
inhalative		short-term	1,4 mg/m³ (ECETOC TRA worker v3)	0,14

3.3.13. Worker exposure: Manual activities involving hand contact (PROC19)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,7 mg/m³ (ECETOC TRA worker v3)	0,14
inhalative		short-term	2,8 mg/m³ (ECETOC TRA worker v3)	0,28

3.3.14. Worker exposure: Use of functional fluids in small devices (PROC20)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	1 mg/m³ (ECETOC TRA worker v3)	0,2
inhalative		short-term	4 mg/m³ (ECETOC TRA worker v3)	0,4

3.3.15. Worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a) / Manual maintenance (cleaning and repair) of machinery (PROC28)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,7 mg/m³ (ECETOC TRA worker v3)	0,14
inhalative		short-term	2,8 mg/m³ (ECETOC TRA worker v3)	0,28

3.3.16. Worker exposure: Manual maintenance (cleaning and repair) of machinery (PROC28)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,7 mg/m³ (ECETOC TRA worker v3)	0,14
inhalative		short-term	2,8 mg/m³ (ECETOC TRA worker v3)	0,28

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

Environment
If a DU has OC/RMMs outside specifications in the ES, then the DU can evaluate whether he works inside the boundaries set by the ES through scaling in EUSES.
The main driving parameters are :
- local amount used (tonnage)
- release factor prior to on-site treatment
- on-site wastewater treatment presence and efficiency
- dilution factor

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
Human 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.

ES4: Professional use, Service life (professional worker), Outdoor

4.1. Title section

Structured Short Title	:	Widespread use by professional workers

Environment	
CS1	ERC8d
Worker	
CS2	PROC1
CS3	PROC2
CS4	PROC3
CS5	PROC4
CS6	PROC5
CS7	PROC8a, PROC26
CS8	PROC8b, PROC26
CS9	PROC9, PROC26
CS10	PROC10
CS11	PROC11, OC9
CS12	PROC11, OC9
CS13	PROC15, PROC26
CS14	PROC19,
CS15	PROC8a
CS16	PROC20

4.2. Conditions of use affecting exposure

4.2.1. Control of environmental exposure: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d)

4.2.2. Control of worker exposure: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Product (article) characteristics

Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Without respiratory protection		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Outdoor
Temperature	:	<= 20 °C

4.2.3. Control of worker exposure: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Outdoor

Temperature	:	<= 20 °C

4.2.4. Control of worker exposure: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Without respiratory protection		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Outdoor
Temperature	:	<= 20 °C

4.2.5. Control of worker exposure: Chemical production where opportunity for exposure arises (PROC4)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		

Wear suitable respiratory protection. APF 10 Inhalation - minimum efficiency of 90 %		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Outdoor
Temperature	:	<= 20 °C

4.2.6. Control of worker exposure: Mixing or blending in batch processes (PROC5)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Wear suitable respiratory protection. APF 10 Inhalation - minimum efficiency of 90 %		
Use suitable eye protection.		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Outdoor
Temperature	:	<= 20 °C

4.2.7. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		

Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Wear suitable respiratory protection. APF 10 Inhalation - minimum efficiency of 90 %		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Outdoor
Temperature	:	<= 20 °C

4.2.8. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Wear suitable respiratory protection. APF 10 Inhalation - minimum efficiency of 90 %		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Outdoor
Temperature	:	<= 20 °C

4.2.9. Control of worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Use suitable eye protection.		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Wear suitable respiratory protection. APF 10 Inhalation - minimum efficiency of 90 %		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Outdoor
Temperature	:	<= 20 °C

4.2.10. Control of worker exposure: Roller application or brushing (PROC10)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		

Use suitable eye protection.		
Wear suitable respiratory protection. APF 10 Inhalation - minimum efficiency of 90 %		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Outdoor
Temperature	:	<= 20 °C

4.2.11. Control of worker exposure: Non-industrial spraying (PROC11) / Outdoor (OC9)

Product (article) characteristics		
Covers concentrations up to 35 %		
Physical form of product	:	liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 2 hours/day
Duration	:	Exposure duration (far field)
Use frequency	:	<= 2 h/event
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Advanced.		
Conditions and measures related to personal protection, hygiene and health evaluation		
Use suitable eye protection.		
Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training. Dermal - minimum efficiency of 90 %		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Outdoor
Temperature	:	<= 20 °C

4.2.12. Control of worker exposure: Non-industrial spraying (PROC11) / Outdoor (OC9)

Product (article) characteristics		
Covers concentrations up to 35 %		
Physical form of product	:	liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 0,25 hours/day

Duration	:	Exposure duration (far field)
Use frequency	:	<= 0,25 h/event
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Advanced.		
Conditions and measures related to personal protection, hygiene and health evaluation		
Use suitable eye protection.		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Wear suitable respiratory protection. APF 20 Inhalation - minimum efficiency of 95 %		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Outdoor
Temperature	:	<= 20 °C

4.2.13. Control of worker exposure: Use as laboratory reagent (PROC15) / Handling of solid inorganic substances at ambient temperature (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Without respiratory protection		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Outdoor
Temperature	:	<= 20 °C

4.2.14. Control of worker exposure: Manual activities involving hand contact (PROC19) / Mixing ()

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
without local exhaust ventilation		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %		
Use suitable eye protection.		
Wear suitable respiratory protection. APF 10		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Outdoor
Temperature	:	<= 20 °C

4.2.15. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of the activity
Use frequency	:	<= 8 hours/day
Technical and organisational conditions and measures		
Occupational Health and Safety Management System: Basic.		
without local exhaust ventilation		
Handle substance within a closed system. Drain down and flush system prior to equipment break-in or maintenance. Transfer via enclosed lines.		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.		

Dermal - minimum efficiency of 90 %
Use suitable eye protection.
Wear suitable respiratory protection. APF 10 Inhalation - minimum efficiency of 90 %
Other conditions affecting workers exposure
Indoor or outdoor use : Outdoor
Temperature : <= 20 °C

4.2.16. Control of worker exposure: Use of functional fluids in small devices (PROC20)

Product (article) characteristics
Covers percentage substance in the product up to 100 %.
Physical form of product : Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)
Duration : Duration of the activity
Use frequency : <= 8 hours/day
Technical and organisational conditions and measures
Occupational Health and Safety Management System: Basic.
without local exhaust ventilation
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Dermal - minimum efficiency of 90 %
Use suitable eye protection.
Without respiratory protection
Other conditions affecting workers exposure
Indoor or outdoor use : Outdoor
Temperature : <= 20 °C

4.3. Exposure estimation and reference to its source

4.3.1. Environmental release and exposure: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d)

Additional information on exposure estimation
Qualitative approach used to conclude safe use.

4.3.2. Worker exposure: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR

inhalative		long-term	0,007 mg/m³ (ECETOC TRA worker v3)	< 0,01
inhalative		short-term	0,028 mg/m³ (ECETOC TRA worker v3)	< 0,01

4.3.3. Worker exposure: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,7 mg/m³ (ECETOC TRA worker v3)	0,14
inhalative		short-term	2,8 mg/m³ (ECETOC TRA worker v3)	0,28

4.3.4. Worker exposure: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,7 mg/m³ (ECETOC TRA worker v3)	0,14
inhalative		short-term	2,8 mg/m³ (ECETOC TRA worker v3)	0,28

4.3.5. Worker exposure: Chemical production where opportunity for exposure arises (PROC4)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,35 mg/m³ (ECETOC TRA worker v3)	0,07
inhalative		short-term	1,4 mg/m³ (ECETOC TRA worker v3)	0,14

4.3.6. Worker exposure: Mixing or blending in batch processes (PROC5)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,35 mg/m³ (ECETOC TRA worker v3)	0,07
inhalative		short-term	1,4 mg/m³ (ECETOC TRA worker v3)	0,14

4.3.7. Worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,7 mg/m³ (ECETOC TRA worker v3)	0,14
inhalative		short-term	2,8 mg/m³ (ECETOC TRA worker v3)	0,28

4.3.8. Worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,35 mg/m³ (ECETOC TRA worker v3)	0,07
inhalative		short-term	1,4 mg/m³ (ECETOC TRA worker v3)	0,14

4.3.9. Worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,35 mg/m³ (ECETOC TRA worker v3)	0,07
inhalative		short-term	1,4 mg/m³ (ECETOC TRA worker v3)	0,14

4.3.10. Worker exposure: Roller application or brushing (PROC10)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,35 mg/m³ (ECETOC TRA worker v3)	0,07
inhalative		short-term	1,4 mg/m³ (ECETOC TRA worker v3)	0,14

4.3.11. Worker exposure: Non-industrial spraying (PROC11) / Outdoor (OC9)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	1,2 mg/m³ (ART v1.5)	0,24
inhalative		short-term	9,6 mg/m³ (ART v1.5)	0,96

4.3.12. Worker exposure: Non-industrial spraying (PROC11) / Outdoor (OC9)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	1,2 mg/m³ (ART v1.5)	0,24
inhalative		short-term	9,6 mg/m³ (ART v1.5)	0,96

4.3.13. Worker exposure: Use as laboratory reagent (PROC15) / Handling of solid inorganic substances at ambient temperature (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,35 mg/m³ (ECETOC TRA worker v3)	0,07
inhalative		short-term	1,4 mg/m³ (ECETOC TRA worker v3)	0,14

4.3.14. Worker exposure: Manual activities involving hand contact (PROC19) / Mixing ()

Exposure route	Health effect	Exposure indicator	Exposure level	RCR

inhalative		long-term	0,35 mg/m³ (ECETOC TRA worker v3)	0,07
inhalative		short-term	1,4 mg/m³ (ECETOC TRA worker v3)	0,14

4.3.15. Worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,7 mg/m³ (ECETOC TRA worker v3)	0,14
inhalative		short-term	2,8 mg/m³ (ECETOC TRA worker v3)	0,28

4.3.16. Worker exposure: Use of functional fluids in small devices (PROC20)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,7 mg/m³ (ECETOC TRA worker v3)	0,14
inhalative		short-term	2,8 mg/m³ (ECETOC TRA worker v3)	0,28

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

Environment
If a DU has OC/RMMs outside specifications in the ES, then the DU can evaluate whether he works inside the boundaries set by the ES through scaling in EUSES.
The main driving parameters are :
- local amount used (tonnage)
- release factor prior to on-site treatment
- on-site wastewater treatment presence and efficiency
- dilution factor

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
Human 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.

ES5: Consumer use, Indoor/Outdoor use.

5.1. Title section

Structured Short Title	:	Consumer use

Environment	
CS1	ERC8a
CS2	ERC8d
Consumer	
CS3	PC0,, CS60
CS4	PC0,, CS10
CS5	PC0
CS6	PC0
CS7	PC2
CS8	PC4, CS60
CS9	PC4, CS10
CS10	PC12, CS60
CS11	PC12, CS10
CS12	PC16
CS13	PC27, CS60
CS14	PC27, CS10
CS15	PC37
CS16	PC35, CS60
CS17	PC35, CS10

5.2. Conditions of use affecting exposure

5.2.1. Control of environmental exposure: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a)

5.2.2. Control of environmental exposure: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d)

5.2.3. Control of consumer exposure: Other (PC0) / Dust suppressant () / no spraying (CS60)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness Liquid
Amount used, frequency and duration of use (or from service life)		
Amount per Application	:	50000 g/event
Duration	:	Duration of exposure by events
Use frequency	:	24 h/event
Use frequency	:	1 events per day
Duration	:	Application duration
Use frequency	:	1.440 min/event
Conditions and measures related to personal protection, hygiene and health evaluation		
Avoid direct eye contact with product, also via contamination on hands. Use suitable eye protection.		
Other conditions affecting consumers exposure		
Room size	:	1 m3
Ventilation rate	:	0,6

5.2.4. Control of consumer exposure: Other (PC0) / Dust suppressant () / Spraying (CS10)

Product (article) characteristics		
Physical form of product	:	Liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of exposure by events
Use frequency	:	24 h/event
Duration	:	Application duration
Use frequency	:	10 min/event
Conditions and measures related to personal protection, hygiene and health evaluation		
Avoid direct eye contact with product, also via contamination on hands.		
Use suitable eye protection.		
Other conditions affecting consumers exposure		
Room size	:	58 m3
Ventilation rate	:	0,6

5.2.5. Control of consumer exposure: Other (PC0)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness Liquid
Amount used, frequency and duration of use (or from service life)		
Amount per Application	:	50000 g/event
Duration	:	Duration of exposure by events
Use frequency	:	24 h/event
Duration	:	Application duration
Use frequency	:	1.440 min/event
Conditions and measures related to personal protection, hygiene and health evaluation		
Avoid direct eye contact with product, also via contamination on hands.		
Use suitable eye protection.		
Other conditions affecting consumers exposure		
Room size	:	1 m3
Ventilation rate	:	0,6

5.2.6. Control of consumer exposure: Other (PC0)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Amount per Application	:	50000 g/event
Duration	:	Duration of exposure by events
Use frequency	:	24 h/event
Use frequency	:	1 events per day
Duration	:	Application duration
Use frequency	:	1.440 min/event
Conditions and measures related to personal protection, hygiene and health evaluation		
Avoid direct eye contact with product, also via contamination on hands. Use suitable eye protection.		
Other conditions affecting consumers exposure		
Room size	:	1 m3
Ventilation rate	:	0,6

5.2.7. Control of consumer exposure: Adsorbents (PC2)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Amount per Application	:	50000 g/event
Duration	:	Duration of exposure by events
Use frequency	:	24 h/event
Use frequency	:	1 events per day
Duration	:	Application duration
Use frequency	:	1.440 min/event
Conditions and measures related to personal protection, hygiene and health evaluation		
Avoid direct eye contact with product, also via contamination on hands. Use suitable eye protection.		
Other conditions affecting consumers exposure		
Room size	:	1 m3
Ventilation rate	:	0,6

5.2.8. Control of consumer exposure: Anti-freeze and de-icing products (PC4) / no spraying (CS60)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Amount per Application	:	50000 g/event
Duration	:	Duration of exposure by events
Use frequency	:	24 h/event
Use frequency	:	1 events per day
Duration	:	Application duration
Use frequency	:	1.440 min/event
Conditions and measures related to personal protection, hygiene and health evaluation		
Avoid direct eye contact with product, also via contamination on hands. Use suitable eye protection.		
Other conditions affecting consumers exposure		
Room size	:	1 m3
Ventilation rate	:	0,6

5.2.9. Control of consumer exposure: Anti-freeze and de-icing products (PC4) / Spraying (CS10)

Product (article) characteristics		
Covers concentrations up to 45 %		
Physical form of product	:	Liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of exposure by events
Use frequency	:	24 h/event
Use frequency	:	1 events per day
Duration	:	Application duration
Use frequency	:	10 min/event
Conditions and measures related to personal protection, hygiene and health evaluation		
Avoid direct eye contact with product, also via contamination on hands. Use suitable eye protection.		
Other conditions affecting consumers exposure		
Room size	:	58 m3
Ventilation rate	:	0,6

5.2.10. Control of consumer exposure: Fertilizers (PC12) / no spraying (CS60)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Amount per Application	:	50000 g/event
Duration	:	Duration of exposure by events
Use frequency	:	24 h/event
Use frequency	:	1 events per day
Duration	:	Application duration
Use frequency	:	1.440 min/event
Conditions and measures related to personal protection, hygiene and health evaluation		
Avoid direct eye contact with product, also via contamination on hands. Use suitable eye protection.		
Other conditions affecting consumers exposure		
Room size	:	1 m3
Ventilation rate	:	0,6

5.2.11. Control of consumer exposure: Fertilizers (PC12) / Spraying (CS10)

Product (article) characteristics		
Covers concentrations up to 45 %		
Physical form of product	:	Liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of exposure by events
Use frequency	:	24 h/event
Use frequency	:	1 events per day
Duration	:	Application duration
Use frequency	:	10 min/event
Conditions and measures related to personal protection, hygiene and health evaluation		
Avoid direct eye contact with product, also via contamination on hands. Use suitable eye protection.		
Other conditions affecting consumers exposure		
Room size	:	58 m3
Ventilation rate	:	0,6

5.2.12. Control of consumer exposure: Heat transfer fluids (PC16)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Amount per Application	:	50000 g/event
Duration	:	Duration of exposure by events
Use frequency	:	24 h/event
Use frequency	:	1 events per day
Duration	:	Application duration
Use frequency	:	1.440 min/event
Conditions and measures related to personal protection, hygiene and health evaluation		
Avoid direct eye contact with product, also via contamination on hands. Use suitable eye protection.		
Other conditions affecting consumers exposure		
Room size	:	1 m3
Ventilation rate	:	0,6

5.2.13. Control of consumer exposure: Plant protection products (PC27) / no spraying (CS60)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Amount per Application	:	50000 g/event
Duration	:	Duration of exposure by events
Use frequency	:	24 h/event
Use frequency	:	1 events per day
Duration	:	Application duration
Use frequency	:	1.440 min/event
Conditions and measures related to personal protection, hygiene and health evaluation		
Avoid direct eye contact with product, also via contamination on hands. Use suitable eye protection.		
Other conditions affecting consumers exposure		
Room size	:	1 m3
Ventilation rate	:	0,6

5.2.14. Control of consumer exposure: Plant protection products (PC27) / Spraying (CS10)

Product (article) characteristics		
Covers concentrations up to 45 %		
Physical form of product	:	Liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of exposure by events
Use frequency	:	24 h/event
Use frequency	:	1 events per day
Duration	:	Application duration
Use frequency	:	10 min/event
Conditions and measures related to personal protection, hygiene and health evaluation		
Avoid direct eye contact with product, also via contamination on hands. Use suitable eye protection.		
Other conditions affecting consumers exposure		
Room size	:	58 m3
Ventilation rate	:	0,6

5.2.15. Control of consumer exposure: Water treatment chemicals (PC37)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Amount per Application	:	50000 g/event
Duration	:	Duration of exposure by events
Use frequency	:	24 h/event
Use frequency	:	1 events per day
Duration	:	Application duration
Use frequency	:	1.440 min/event
Conditions and measures related to personal protection, hygiene and health evaluation		
Avoid direct eye contact with product, also via contamination on hands. Use suitable eye protection.		
Other conditions affecting consumers exposure		
Room size	:	1 m3
Ventilation rate	:	0,6

5.2.16. Control of consumer exposure: Washing and cleaning products (PC35) / no spraying (CS60)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	Solid, medium dustiness
Amount used, frequency and duration of use (or from service life)		
Amount per Application	:	50000 g/event
Duration	:	Duration of exposure by events
Use frequency	:	24 h/event
Use frequency	:	1 events per day
Duration	:	Application duration
Use frequency	:	1.440 min/event
Conditions and measures related to personal protection, hygiene and health evaluation		
Avoid direct eye contact with product, also via contamination on hands. Use suitable eye protection.		
Other conditions affecting consumers exposure		
Room size	:	1 m3

Ventilation rate	:	0,6

5.2.17. Control of consumer exposure: Washing and cleaning products (PC35) / Spraying (CS10)

Product (article) characteristics		
Covers concentrations up to 45 %		
Physical form of product	:	Liquid
Amount used, frequency and duration of use (or from service life)		
Duration	:	Duration of exposure by events
Use frequency	:	24 h/event
Use frequency	:	1 events per day
Duration	:	Application duration
Use frequency	:	10 min/event
Conditions and measures related to personal protection, hygiene and health evaluation		
Avoid direct eye contact with product, also via contamination on hands. Use suitable eye protection.		
Other conditions affecting consumers exposure		
Room size	:	58 m3
Ventilation rate	:	0,6

5.3. Exposure estimation and reference to its source

5.3.1. Environmental release and exposure: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a)

Additional information on exposure estimation
Qualitative approach used to conclude safe use.

5.3.2. Environmental release and exposure: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d)

Additional information on exposure estimation
Qualitative approach used to conclude safe use.

5.3.3. Consumer exposure: Other (PC0) / Dust suppressant () / no spraying (CS60)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,005 mg/m³ (Consexpo v4.1)	< 0,01
inhalative		short-term	0,01 mg/m³ (Consexpo v4.1)	< 0,01

5.3.4. Consumer exposure: Other (PC0) / Dust suppressant () / Spraying (CS10)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,687 mg/m³ (Consexpo v4.1)	0,275
inhalative		short-term	0,69 mg/m³ (Consexpo v4.1)	0,138

5.3.5. Consumer exposure: Other (PC0)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,005 mg/m³ (Consexpo v4.1)	< 0,01
inhalative		short-term	0,01 mg/m³ (Consexpo v4.1)	< 0,01

5.3.6. Consumer exposure: Other (PC0)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,005 mg/m³ (Consexpo v4.1)	< 0,01
inhalative		short-term	0,01 mg/m³ (Consexpo v4.1)	< 0,01

5.3.7. Consumer exposure: Adsorbents (PC2)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,005 mg/m³ (Consexpo v4.1)	< 0,01
inhalative		short-term	0,01 mg/m³ (Consexpo v4.1)	< 0,01

5.3.8. Consumer exposure: Anti-freeze and de-icing products (PC4) / no spraying (CS60)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,005 mg/m³ (Consexpo v4.1)	< 0,01
inhalative		short-term	0,01 mg/m³ (Consexpo v4.1)	< 0,01

5.3.9. Consumer exposure: Anti-freeze and de-icing products (PC4) / Spraying (CS10)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,687 mg/m³ (Consexpo v4.1)	0,275
inhalative		short-term	0,69 mg/m³ (Consexpo v4.1)	0,138

5.3.10. Consumer exposure: Fertilizers (PC12) / no spraying (CS60)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,005 mg/m³ (Consexpo v4.1)	< 0,01

inhalative		short-term	0,01 mg/m³ (Consexpo v4.1)	< 0,01

5.3.11. Consumer exposure: Fertilizers (PC12) / Spraying (CS10)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,687 mg/m³ (Consexpo v4.1)	0,275
inhalative		short-term	0,69 mg/m³ (Consexpo v4.1)	0,138

5.3.12. Consumer exposure: Heat transfer fluids (PC16)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,005 mg/m³ (Consexpo v4.1)	< 0,01
inhalative		short-term	0,01 mg/m³ (Consexpo v4.1)	< 0,01

5.3.13. Consumer exposure: Plant protection products (PC27) / no spraying (CS60)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,005 mg/m³ (Consexpo v4.1)	< 0,01
inhalative		short-term	0,01 mg/m³ (Consexpo v4.1)	< 0,01

5.3.14. Consumer exposure: Plant protection products (PC27) / Spraying (CS10)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,687 mg/m³ (Consexpo v4.1)	0,275
inhalative		short-term	0,69 mg/m³ (Consexpo v4.1)	0,138

5.3.15. Consumer exposure: Water treatment chemicals (PC37)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,005 mg/m³ (Consexpo v4.1)	< 0,01
inhalative		short-term	0,01 mg/m³ (Consexpo v4.1)	< 0,01

5.3.16. Consumer exposure: Washing and cleaning products (PC35) / no spraying (CS60)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,005 mg/m³ (Consexpo v4.1)	< 0,01
inhalative		short-term	0,01 mg/m³ (Consexpo v4.1)	< 0,01

5.3.17. Consumer exposure: Washing and cleaning products (PC35) / Spraying (CS10)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative		long-term	0,687 mg/m³ (Consexpo v4.1)	0,275
inhalative		short-term	0,69 mg/m³ (Consexpo v4.1)	0,138

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

Environment
If a DU has OC/RMMs outside specifications in the ES, then the DU can evaluate whether he works inside the boundaries set by the ES through scaling in EUSES.
The main driving parameters are :
- local amount used (tonnage)
- release factor prior to on-site treatment
- on-site wastewater treatment presence and efficiency
- dilution factor

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
Human 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.

Conductance Value