

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Heraeus

CPA HSTDP

Version
8.0

Revision Date:
04.08.2020

Date of last issue: 26.03.2020
Date of first issue: 05.01.2016

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

1.1 Product identifier

Trade name : CPA HSTDP

Product code : 81147413

REACH Registration Number : 01-2120752845-45-0001
Company : Heraeus Deutschland GmbH & Co. KG

01-2120752845-45-0004
Company : Heraeus Metal Processing Ltd

Heraeus companies not listed here do not have a REACH registration, because the companies either are located outside the EU or they are not required to register due to the annual amount of produced/imported substance.

Substance name : Dihydrogen hexachloroplatinate(IV) hydrate

CAS-No. : 26023-84-7

EC-No. : 241-010-7

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

Use of the Sub-
stance/Mixture : Pharmaceutical, Industrial use

1.3 Details of the supplier of the safety data sheet

Company : Heraeus Deutschland GmbH & Co. KG
Heraeusstr. 12-14
63450 Hanau

Telephone : +496181351

E-mail address of person
responsible for the SDS : sds@heraeus.com
(Heraeus Holding: EHS Chemical Safety)

1.4 Emergency telephone number

Emergency telephone num-
ber : +49 6132-84463
International Emergency Number
This telephone number is available 24 hours per day, 7 days
per week.

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SECTION 2: Hazards identification


2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Corrosive to metals, Category 1	H290: May be corrosive to metals.
Acute toxicity, Category 2	H300: Fatal if swallowed.
Skin corrosion, Sub-category 1B	H314: Causes severe skin burns and eye damage.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Respiratory sensitisation, Category 1	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Specific target organ toxicity - repeated exposure, Category 1, Kidney	H372: Causes damage to organs through prolonged or repeated exposure if swallowed.
Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard, Category 1	
M-Factor (Acute aquatic toxicity): 10	H410: Very toxic to aquatic life with long lasting effects.
M-Factor (Chronic aquatic toxicity): 10	

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms	:	
Signal word	:	Danger
Hazard statements	:	H290 May be corrosive to metals. H300 Fatal if swallowed. H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H372 Causes damage to organs (Kidney) through prolonged or repeated exposure if swallowed. H410 Very toxic to aquatic life with long lasting effects.
Precautionary statements	:	Prevention: P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. Response: P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth. P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 IF ON SKIN (or hair): Take off immedi-

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ately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.

2.3 Other hazards

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

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical nature : inorganic

Chemical name	CAS-No. EC-No. Index-No.	Concentration (% w/w)
Dihydrogen hexachloroplatinate(IV) hydrate	26023-84-7 241-010-7	100

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : First aider needs to protect himself.
Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.

If inhaled : Move to fresh air.
Get medical attention.

In case of skin contact : Wash off immediately with plenty of water.
Take off all contaminated clothing immediately.
Obtain medical attention.
Wash off with soap and plenty of water.

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.
Keep eye wide open while rinsing.
Protect unharmed eye.
Call a physician immediately.

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If swallowed : Immediately give large quantities of water to drink.
Do NOT induce vomiting.
Get medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed

Risks : Fatal if swallowed.
May cause an allergic skin reaction.
Causes serious eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Causes damage to organs through prolonged or repeated exposure if swallowed.
Causes severe burns.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Exposure to decomposition products may be a hazard to health.

Hazardous combustion products : Chlorine compounds
Hydrogen chloride
Halogens

5.3 Advice for firefighters

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

Further information : Use a water spray to cool fully closed containers.
Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Follow safe handling advice and personal protective equipment recommendations.

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Ensure adequate ventilation.
Evacuate personnel to safe areas.
Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

Environmental precautions : Do not allow contact with soil, surface or ground water.
Do not let product enter drains.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Pick up and arrange disposal without creating dust.
Sweep up or vacuum up spillage and collect in suitable container for disposal.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Provide sufficient air exchange and/or exhaust in work rooms.
Wear personal protective equipment.
Avoid inhalation, ingestion and contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.

Hygiene measures : Keep away from food and drink. Wash hands before breaks and at the end of workday. Keep working clothes separately.
Remove and wash contaminated clothing and gloves, including the inside, before re-use.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep tightly closed in a dry, cool and well-ventilated place.
Keep locked up or in an area accessible only to qualified or authorised persons.

Storage class (TRGS 510) : 6.1B, Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

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8.2 Exposure controls

Engineering measures

Provide sufficient air exchange and/or exhaust in work rooms.

Personal protective equipment

Eye protection : Safety glasses with side-shields

Hand protection

Remarks : Before removing gloves clean them with soap and water. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

Filter type : Filter type ABEK-P

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : powder
Colour : orange
Odour : odourless
Odour Threshold : No data available

pH : < 1 (20 °C)

Melting point/range : No data available

Boiling point/boiling range : Not applicable

Flash point : Not applicable

Evaporation rate : Not applicable

Flammability (solid, gas) : not auto-flammable, Not applicable

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : Not applicable

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Relative vapour density	:	Not applicable
Relative density	:	No data available
Density	:	2,431 g/cm ³ (20 °C, 1.013 hPa)
Solubility(ies)		
Water solubility	:	soluble (20 °C, 1.013 hPa)
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	Not applicable
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	> 200 °C
Viscosity		
Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	Not applicable
Explosive properties	:	Not explosive
Oxidizing properties	:	No data available

9.2 Other information

Molecular weight	:	No data available
Metal corrosion rate	:	Corrosive to metals
Self-ignition	:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid : No data available

10.5 Incompatible materials

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Materials to avoid : No data available

10.6 Hazardous decomposition products

No data available

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Fatal if swallowed.

Components:

Dihydrogen hexachloroplatinate(IV) hydrate:

Acute oral toxicity : LD50 Oral (Rat): 25 - 250 mg/kg

Skin corrosion/irritation

Causes severe burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Causes damage to organs (Kidney) through prolonged or repeated exposure if swallowed.

Components:

Dihydrogen hexachloroplatinate(IV) hydrate:

Exposure routes : Oral
Target Organs : Kidney
Assessment : Causes damage to organs through prolonged or repeated exposure.

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Aspiration toxicity
Not classified based on available information.

SECTION 12: Ecological information

12.1 Toxicity

Product:

M-Factor (Acute aquatic toxicity) : 10
M-Factor (Chronic aquatic toxicity) : 10

Components:

Dihydrogen hexachloroplatinate(IV) hydrate:

M-Factor (Acute aquatic toxicity) : 10
M-Factor (Chronic aquatic toxicity) : 10

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

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

12.6 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : If recycling is not practicable, dispose of in compliance with local regulations.
Contaminated packaging : Dispose of as unused product.

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SECTION 14: Transport information

14.1 UN number

ADN : UN 2507
ADR : UN 2507
RID : UN 2507
IMDG : UN 2507
IATA : UN 2507

14.2 UN proper shipping name

ADN : CHLOROPLATINIC ACID, SOLID
ADR : CHLOROPLATINIC ACID, SOLID
RID : CHLOROPLATINIC ACID, SOLID
IMDG : CHLOROPLATINIC ACID, SOLID
IATA : Chloroplatinic acid, solid

14.3 Transport hazard class(es)

ADN : 8
ADR : 8
RID : 8
IMDG : 8
IATA : 8

14.4 Packing group

ADN
Packing group : III
Classification Code : C2
Hazard Identification Number : 80
Labels : 8

ADR
Packing group : III
Classification Code : C2
Hazard Identification Number : 80
Labels : 8
Tunnel restriction code : (E)

RID
Packing group : III
Classification Code : C2
Hazard Identification Number : 80
Labels : 8

IMDG
Packing group : III

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Labels : 8
EmS Code : F-A, S-B

IATA (Cargo)

Packing instruction (cargo aircraft) : 864
Packing instruction (LQ) : Y845
Packing group : III
Labels : Corrosive

IATA (Passenger)

Packing instruction (passenger aircraft) : 860
Packing instruction (LQ) : Y845
Packing group : III
Labels : Corrosive

14.5 Environmental hazards

ADN

Environmentally hazardous : yes

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Not applicable
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable
REACH - List of substances subject to authorisation (Annex XIV) : Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable
Regulation (EC) No 649/2012 of the European Parlia- : Not applicable

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ment and the Council concerning the export and import of dangerous chemicals

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

H2 ACUTE TOXIC

E1 ENVIRONMENTAL HAZARDS

Water contaminating class : WGK 3 highly hazardous to water
(Germany) Classification according to AwSV, Annex 1 (4)

Other regulations:

The product is subject to the supply restrictions of the Ordinance on the Prohibition of Chemicals.

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Develop-

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ment; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

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

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Annex: Exposure Scenarios

All data concerning masses and concentrations in this Annex are related to the metal.

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Number	Title
ES 1	Manufacture of the substance (as such)
ES 2	Use at industrial site - Use as an Intermediate

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ES 1: Manufacture of the substance (as such)

1.1. Title section

Exposure Scenario name	: Manufacture of the substance (as such)
Structured Short Title	: Manufacture of the substance (as such)

Environment		
CS 1	Manufacture of the substance (as such)	ERC1
Worker		
CS 2	Manufacture of the substance (as such)	PROC26
CS 3	Manufacture of the substance (as such)	PROC15
CS 4	Manufacture of the substance (as such)	PROC4
CS 5	Manufacture of the substance (as such)	PROC4
CS 6	Manufacture of the substance (as such)	PROC4
CS 7	Manufacture of the substance (as such)	PROC1
CS 8	Manufacture of the substance (as such)	PROC26
CS 9	Manufacture of the substance (as such)	PROC26

1.2. Conditions of use affecting exposure

1.2.1. Control of environmental exposure: Manufacture of the substance (ERC1)

Product (article) characteristics	
Covers percentage substance in the product up to 100 %.	
Physical form of product	: solid
Amount used (or contained in articles), frequency and duration of use/exposure	
Maximum allowable site tonnage (MSafe)	: 30 tonnes/year
Critical compartment for Msafe	: Freshwater
Conditions and measures related to sewage treatment plant	
STP type	: Onsite Sewage Treatment Plant

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STP type	:	Municipal Sewage Treatment Plant
Conditions and measures related to treatment of waste (including article waste)		
Waste treatment	:	If recycling is not practicable, dispose of in compliance with local regulations.
Other conditions affecting environmental exposure		
Receiving surface water flow	:	93.000 m ³ /d
Local freshwater dilution factor	:	32

1.2.2. Control of worker exposure: Raw material handling (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	solid
Amount used (or contained in articles), frequency and duration of use/exposure		
Duration	:	> 4 hrs
Use frequency	:	5 days per week
Technical and organisational conditions and measures		
Local exhaust ventilation Inhalation - minimum efficiency of 80 %		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear suitable gloves tested to EN374.		
Use suitable eye protection.		
Inhalation - minimum efficiency of 90 %		
Use suitable eye protection.		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor use

1.2.3. Control of worker exposure: Use as laboratory reagent (PROC15)

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

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Physical form of product	: solid
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: > 4 hrs
Use frequency	: 5 days per week
Technical and organisational conditions and measures	
Local exhaust ventilation Inhalation - minimum efficiency of 80 %	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374.	
Wear suitable respiratory protection. Inhalation - minimum efficiency of 97,5 %	
Use suitable eye protection.	
Other conditions affecting workers exposure	
Indoor or outdoor use	: Indoor use

1.2.4. Control of worker exposure: Handling of solutions/ Wet chemistry in open or semi-closed processes (PROC4)

Product (article) characteristics	
Covers percentage substance in the product up to 100 %.	
Physical form of product	: solid
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: > 4 hrs
Use frequency	: 5 days per week
Technical and organisational conditions and measures	
Local exhaust ventilation Inhalation - minimum efficiency of 80 %	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374.	
Wear suitable respiratory protection. Inhalation - minimum efficiency of 90 %	
Use suitable eye protection.	

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Other conditions affecting workers exposure	
Indoor or outdoor use	: Indoor use

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
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: > 4 hrs
Use frequency	: 5 days per week
Technical and organisational conditions and measures	
Local exhaust ventilation Inhalation - minimum efficiency of 80 %	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374.	
Wear suitable respiratory protection. Inhalation - minimum efficiency of 97,5 %	
Use suitable eye protection.	
Other conditions affecting workers exposure	
Indoor or outdoor use	: Indoor use

1.2.6. 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
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: > 4 hrs
Use frequency	: 5 days per week

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Technical and organisational conditions and measures
Local exhaust ventilation Inhalation - minimum efficiency of 80 %
Conditions and measures related to personal protection, hygiene and health evaluation
Use suitable eye protection.
Wear suitable respiratory protection. Inhalation - minimum efficiency of 97,5 %
Use suitable eye protection.
Other conditions affecting workers exposure
Indoor or outdoor use : Indoor use

1.2.7. 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 %.
Amount used (or contained in articles), frequency and duration of use/exposure
Duration : > 4 hrs
Use frequency : 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.
Use suitable eye protection.
Other conditions affecting workers exposure
Indoor or outdoor use : Indoor use

1.2.8. Control of worker exposure: Manual Handling of low dusty materials. (PROC26)

Product (article) characteristics
Covers percentage substance in the product up to 100 %.
Physical form of product : solid
Amount used (or contained in articles), frequency and duration of use/exposure

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Duration	:	> 4 hrs
Use frequency	:	5 days per week
Technical and organisational conditions and measures		
Local exhaust ventilation Inhalation - minimum efficiency of 80 %		
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear suitable gloves tested to EN374.		
Wear suitable respiratory protection. Inhalation - minimum efficiency of 90 %		
Use suitable eye protection.		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor use

1.2.9. Control of worker exposure: Vacuum cleaning (PROC26)

Product (article) characteristics		
Covers percentage substance in the product up to 100 %.		
Physical form of product	:	solid
Amount used (or contained in articles), frequency and duration of use/exposure		
Duration	:	> 4 hrs
Use frequency	:	5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation		
Wear suitable gloves tested to EN374.		
Wear suitable respiratory protection. Inhalation - minimum efficiency of 97,5 %		
Use suitable eye protection.		
Other conditions affecting workers exposure		
Indoor or outdoor use	:	Indoor use

1.3. Exposure estimation and reference to its source

1.3.1. Environmental release and exposure: Manufacture of the substance (ERC1)

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Release route	Release rate	Release estimation method
Water	11,9 g/t	measured data
Air	30 g/t	measured data

Protection Target	Exposure estimate	RCR
Sewage treatment plant	0,000155 mg/L	< 0,002
Freshwater	< 0,000005 mg/L	< 0,003
Freshwater sediment	0,00192 mg/kg dry weight	0,34
Soil	0,000839 mg/kg dry weight	0,18

1.3.2. Worker exposure: Raw material handling (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	> 0,001 mg/m ³	< 1
dermal	systemic	long-term	> 0,03 mg/kg bw/day	< 1
combined routes	systemic	long-term		< 1

1.3.3. Worker exposure: Use as laboratory reagent (PROC15)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	< 0,004 mg/m ³	< 1
dermal	systemic	long-term	0,03 mg/kg bw/day	< 1
combined routes	systemic	long-term		< 1

1.3.4. Worker exposure: Handling of solutions/ Wet chemistry in open or semi-closed processes (PROC4)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	< 0,001 mg/m ³	< 1
dermal	systemic	long-term	< 0,001 mg/kg bw/day	< 1
combined routes	systemic	long-term		< 1

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

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	< 0,005 mg/m ³	< 1
dermal	systemic	long-term	0,29 mg/kg bw/day	< 1
combined routes	systemic	long-term		< 1

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

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	< 0,005 mg/m ³	< 1
dermal	systemic	long-term	0,03 mg/kg bw/day	< 1
combined routes	systemic	long-term		< 1

1.3.7. 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 estimate	RCR
inhalative	systemic	long-term	< 0,001 mg/m ³	< 1
dermal	systemic	long-term	0,004	< 1
combined routes	systemic	long-term		< 1

1.3.8. Worker exposure: Manual Handling of low dusty materials. (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	< 0,004 mg/m ³	< 1
dermal	systemic	long-term	0,03 mg/kg bw/day	< 1
combined routes	systemic	long-term		< 1

1.3.9. Worker exposure: Vacuum cleaning (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	< 0,003 mg/m ³	< 1
dermal	systemic	long-term	0,01 mg/kg bw/day	< 1

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combined routes	systemic	long-term		< 1
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1.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

If the conditions of downstream use deviate from the measures or parameters described in the exposure scenario, the downstream use can still be considered to be within the conditions of the exposure scenario when the following criteria are met: The resulting risk characterisation ratios (RCR) for the deviating conditions, using the method described in the scenario or a compatible tool ("scaling tool"), have to be equal to or lower than the values given in the exposure scenario. Scalable parameters are restricted to those that a downstream user can actively change by adapting the process, and may vary depending on the method used for exposure assessment. Intrinsic substance properties like vapour pressure or diffusion rates and those parameters specific to the process, e.g. the exposed skin area, may not be scaled.

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ES 2: Use at industrial site - Use as an Intermediate

2.1. Title section

Exposure Scenario name	: Use at industrial site - Use as an Intermediate
Structured Short Title	: Use at industrial site - Use as an Intermediate

Environment		
CS 1	Use at industrial site - Use as an Intermediate	ERC6a
Worker		
CS 2	Use at industrial site - Use as an Intermediate	PROC26
CS 3	Use at industrial site - Use as an Intermediate	PROC26
CS 4	Use at industrial site - Use as an Intermediate	PROC4
CS 5	Use at industrial site - Use as an Intermediate	PROC1
CS 6	Use at industrial site - Use as an Intermediate	PROC22
CS 7	Use at industrial site - Use as an Intermediate	PROC 27a
CS 8	Use at industrial site - Use as an Intermediate	PROC 27b
CS 9	Use at industrial site - Use as an Intermediate	PROC8a
CS 10	Use at industrial site - Use as an Intermediate	PROC26

2.2. Conditions of use affecting exposure

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

Product (article) characteristics	
Covers percentage substance in the product up to 100 %.	
Physical form of product	: solid
Amount used (or contained in articles), frequency and duration of use/exposure	
Maximum allowable site tonnage (MSafe)	: 30 tonnes/year
Critical compartment for Msafe	: Freshwater
Conditions and measures related to sewage treatment plant	

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STP type	:	Onsite Sewage Treatment Plant
STP type	:	Municipal Sewage Treatment Plant
Conditions and measures related to treatment of waste (including article waste)		
Waste treatment	:	If recycling is not practicable, dispose of in compliance with local regulations.
Other conditions affecting environmental exposure		
Receiving surface water flow	:	93.000 m3/d
Local freshwater dilution factor	:	32

2.2.2. Control of worker exposure: Manual Handling of low dusty materials. (PROC26)

Product (article) characteristics	
Covers percentage substance in the product up to 100 %.	
Physical form of product	: solid
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: > 4 hrs
Use frequency	: 5 days per week
Technical and organisational conditions and measures	
Local exhaust ventilation Inhalation - minimum efficiency of 80 %	
Conditions and measures related to personal protection, hygiene and health evaluation	
Use suitable eye protection.	
Wear suitable respiratory protection. Inhalation - minimum efficiency of 90 %	
Wear suitable gloves tested to EN374.	
Other conditions affecting workers exposure	
Indoor or outdoor use	: Indoor use

2.2.3. Control of worker exposure: Manual Handling of low dusty materials. (PROC26)

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

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Physical form of product	: solid
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: > 4 hrs
Use frequency	: 5 days per week
Technical and organisational conditions and measures	
Local exhaust ventilation Inhalation - minimum efficiency of 80 %	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374.	
Wear suitable respiratory protection. Inhalation - minimum efficiency of 90 %	
Use suitable eye protection.	
Other conditions affecting workers exposure	
Indoor or outdoor use	: Indoor use

2.2.4. Control of worker exposure: Handling of solutions/ Wet chemistry in open or semi-closed processes (PROC4)

Product (article) characteristics	
Covers percentage substance in the product up to 100 %.	
Physical form of product	: Liquid
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: > 4 hrs
Use frequency	: 5 days per week
Technical and organisational conditions and measures	
Local exhaust ventilation Inhalation - minimum efficiency of 80 %	
Conditions and measures related to personal protection, hygiene and health evaluation	
Use suitable eye protection.	
Wear suitable respiratory protection. Inhalation - minimum efficiency of 90 %	
Wear suitable gloves tested to EN374.	

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Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

2.2.5. 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 %.

Amount used (or contained in articles), frequency and duration of use/exposure

Duration : > 4 hrs

Use frequency : 5 days per week

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374.

Wear suitable respiratory protection.

Inhalation - minimum efficiency of 90 %

Wear suitable gloves tested to EN374.

Other conditions affecting workers exposure

Indoor or outdoor use : Indoor use

2.2.6. Control of worker exposure: Manufacturing and processing of minerals and/or metals at substantially elevated temperature (PROC22)

Product (article) characteristics

Covers percentage substance in the product up to 100 %.

Amount used (or contained in articles), frequency and duration of use/exposure

Duration : > 4 hrs

Use frequency : 5 days per week

Technical and organisational conditions and measures

Local exhaust ventilation

Inhalation - minimum efficiency of 90 %

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374.

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Wear suitable respiratory protection. Inhalation - minimum efficiency of 95 %	
Use suitable eye protection.	
Other conditions affecting workers exposure	
Indoor or outdoor use	: Indoor use

2.2.7. Control of worker exposure: Production of metal powders (hot processes) (PROC 27a)

Product (article) characteristics	
Covers percentage substance in the product up to 100 %.	
Physical form of product	: solid
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: > 4 hrs
Use frequency	: 5 days per week
Technical and organisational conditions and measures	
Local exhaust ventilation Inhalation - minimum efficiency of 90 %	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374.	
Wear suitable respiratory protection. Inhalation - minimum efficiency of 95 %	
Use suitable eye protection.	
Other conditions affecting workers exposure	
Indoor or outdoor use	: Indoor use

2.2.8. Control of worker exposure: Production of metal powders (wet processes) (PROC 27b)

Product (article) characteristics	
Covers percentage substance in the product up to 100 %.	
Physical form of product	: Liquid
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: > 4 hrs

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Use frequency	: 5 days per week
Technical and organisational conditions and measures	
Local exhaust ventilation Inhalation - minimum efficiency of 80 %	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374.	
Wear suitable respiratory protection. Inhalation - minimum efficiency of 95 %	
Use suitable eye protection.	
Other conditions affecting workers exposure	
Indoor or outdoor use	: Indoor use

2.2.9. Control of worker exposure: Wet cleaning (PROC8a)

Product (article) characteristics	
Covers percentage substance in the product up to 100 %.	
Physical form of product	: Liquid
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: > 4 hrs
Use frequency	: 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374.	
Wear suitable respiratory protection. Inhalation - minimum efficiency of 97,5 %	
Use suitable eye protection.	
Other conditions affecting workers exposure	
Indoor or outdoor use	: Indoor use

2.2.10. Control of worker exposure: Vacuum cleaning (PROC26)

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

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Physical form of product	: solid
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration	: > 4 hrs
Use frequency	: 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374.	
Wear suitable respiratory protection. Inhalation - minimum efficiency of 97,5 %	
Use suitable eye protection.	
Other conditions affecting workers exposure	
Indoor or outdoor use	: Indoor use

2.3. Exposure estimation and reference to its source

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

Release route	Release rate	Release estimation method
Water	11,9 g/t	measured data
Air	30 g/t	measured data

Protection Target	Exposure estimate	RCR
Sewage treatment plant	0,000155 mg/L	< 0,002
Marine water	< 0,0000048 mg/L	< 0,034
Freshwater	< 0,0000004 mg/L	< 0,003
Freshwater sediment	0,00192 mg/kg dry weight	0,34
Soil	0,000839 mg/kg dry weight	0,18

2.3.2. Worker exposure: Manual Handling of low dusty materials. (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	< 0,004 mg/m ³	< 1
dermal	systemic	long-term	0,03 mg/kg bw/day	< 1
combined routes	systemic	long-term		< 1

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2.3.3. Worker exposure: Manual Handling of low dusty materials. (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	< 0,001 mg/m ³	< 1
dermal	systemic	long-term	0,03 mg/kg bw/day	< 1
combined routes	systemic	long-term		< 1

2.3.4. Worker exposure: Handling of solutions/ Wet chemistry in open or semi-closed processes (PROC4)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	< 0,002 mg/m ³	< 1
dermal	systemic	long-term	< 0,001 mg/kg bw/day	< 1
combined routes	systemic	long-term		< 1

2.3.5. 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 estimate	RCR
inhalative	systemic	long-term	< 0,001 mg/m ³	< 1
dermal	systemic	long-term	0,004 mg/kg bw/day	< 1
combined routes	systemic	long-term		< 1

2.3.6. Worker exposure: Manufacturing and processing of minerals and/or metals at substantially elevated temperature (PROC22)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	< 0,002 mg/m ³	< 1
dermal	systemic	long-term	< 0,001 mg/kg bw/day	< 1
combined routes	systemic	long-term		< 1

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2.3.7. Worker exposure: Production of metal powders (hot processes) (PROC 27a)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	< 0,002 mg/m ³	< 1
dermal	systemic	long-term	< 0,001 mg/kg bw/day	< 1
combined routes	systemic	long-term		< 1

2.3.8. Worker exposure: Production of metal powders (wet processes) (PROC 27b)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	< 0,002 mg/m ³	< 1
dermal	systemic	long-term	< 0,001 mg/kg bw/day	< 1
combined routes	systemic	long-term		< 1

2.3.9. Worker exposure: Wet cleaning (PROC8a)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	< 0,003 mg/m ³	< 1
dermal	systemic	long-term	0,29 mg/kg bw/day	< 1
combined routes	systemic	long-term		< 1

2.3.10. Worker exposure: Vacuum cleaning (PROC26)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	systemic	long-term	< 0,003 mg/m ³	< 1
dermal	systemic	long-term	0,01 mg/kg bw/day	< 1
combined routes	systemic	long-term		< 1

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

If the conditions of downstream use deviate from the measures or parameters described in the exposure scenario, the downstream use can still be considered to be within the conditions of the exposure scenario when the following criteria are met: The resulting risk characterisation ratios (RCR) for the deviating conditions, using the method described in the scenario or a compatible tool ("scaling tool"),

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have to be equal to or lower than the values given in the exposure scenario. Scalable parameters are restricted to those that a downstream user can actively change by adapting the process, and may vary depending on the method used for exposure assessment. Intrinsic substance properties like vapour pressure or diffusion rates and those parameters specific to the process, e.g. the exposed skin area, may not be scaled.