Caviro Distillerie srl
Via Convertite 8
48018 Faenza (RA) - Italia

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

1.1. Product identifier

Trade name:	Tartaric acid natural
Chemical type:	substance
Formula:	$C_4H_6O_6$
IUPAC name:	tartaric acid
Chemical name:	(+)-tartaric acid
Common name:	tartaric acid
Synonyms:	acid (2R,3R)-2,3-dihydroxybutane, butanedioic acid, 2,3-dihydroxy- [R-(R,R)]-
EC no.:	201-766-0
CAS no.:	87-69-4
REACH registration no.:	01-2119537204-47-0000

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

- ✓ Manufacture of substance - Industrial
- ✓ Formulation & (Re)packing of Substances and Mixtures - Industrial
- ✓ Use at industrial site - Intermediate
- ✓ Uses in Construction applications - Professional
- ✓ Uses in Construction applications - Consumer
- ✓ Uses in Ceramics applications - Professional
- ✓ Uses in Ceramics applications - Consumer
- ✓ Uses in cleaning agents - Consumer
- ✓ Uses in metal surface treatment products, including galvanic and electroplating products - Consumer

1.3. Details of the supplier of the safety data sheet

Company name:	Caviro Distillerie srl
Address:	Via Convertite 8 - 48018 Faenza (RA) - Italia
Phone:	+39 0546 629111
E-mail:	roberto.zama@caviro.it

1.4. Emergency telephone number

Poison control center Hospital Niguarda Cà Granda – Milano tel. 02/66101029 (H24)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The substance is classified as dangerous according Regulation (EC) 1272/2008 (CLP).

Classification according to Regulation (EC) 1272/2008 (CLP)
Serious eye damage/eye irritation, Hazard Category 1 - H318

2.2. Label elements

Labelling according to Regulation (EC) 1272/2008 (CLP)

Hazard pictograms:		
Signal word:	Danger	
Hazard statements:	H318	Causes serious eye damage
Precautionary statements:	P280	Wear protective gloves/protective clothing/eye protection/face protection.
	P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minuts. Remove contact lenses, if present and easy to do. Continue rinsing.
	P310	Immediately call a POISON CENTER or doctor/physician.

2.3. Other hazards

The product does not satisfy the criteria for PBT or vPvB classification according to Annex XIII of REACH Regulation.

SECTION 3: Composition/information on ingredients

3.1. Substances

EC name	EC no.	CAS no.	INDEX no.	Registration no	Classification Reg. (EC) 1272/2008	Conc. [%]
(+)-tartaric acid	201-766-0	87-69-4	-	01-2119537204-47-0000	Eye Dam. 1, H318	99 - 100

SECTION 4: First aid measures

4.1. Description of first aid measures

Contact with the eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention. If eye irritation occurs, get immediate medical advice/attention.
Contact with the skin:	Wash off immediately with soap and plenty of water. If skin irritation persists, get medical advice/attention.
Inhalation:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. In case of breathing difficulties, give oxygen. In case of irregular breathing or respiratory arrest, provide artificial respiration. If experiencing respiratory symptoms, get medical advice/attention.
Ingestion:	Do not induce vomiting. with water. Never give an unconscious person anything to drink. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Contact with the eyes:	Causes serious eye irritation.
Contact with the skin:	May cause slight temporary irritation.
Inhalation:	May cause irritation to respiratory tract and to mucous membranes.
Ingestion:	May cause irritation to respiratory tract and to mucous membranes.
	May cause irritation to the respiratory tract and to other mucous membranes.

4.3. Indication of any immediate medical attention and special treatment needed

Basic first aid and symptomatic treatment (see SECTION 4.1).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable:	Carbon dioxide, dry chemical, foam and water.
Unsuitable:	None in particular.

5.2. Special hazards arising from the substance or mixture

The product is neither flammable, nor explosive. In case of fire, carbon oxides may be released.

5.3. Advice for firefighters

Evacuate and isolate the area until complete fire extinction, by limiting access only to trained personnel. Firefighters must always wear appropriate protective equipment (helmet, boots, fireproof gloves and positive pressure self contained breathing apparatus with facial protective screen) [ref. EN 469]. Prevent the contaminated extinguishing water flowing into drains or waterways.

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment, and procedures in case of emergency

Evacuate and isolate the area until complete dispersion of the product. Alert the emergency personnel. Eliminate all sources of ignition. Avoid breathing dust. Avoid contact with skin/eyes. Use a suitable personal protective equipment.

6.2. Environmental precautions

Prevent the product from leaking into the environment and run off into drains, surface waters and groundwater. Alert competent authorities if large amounts into drains or watercourses.

6.3. Methods and material for containment and cleaning up

Cover drains. Contain the spillage. Collect and transfer the product into a suitable container properly labeled. Dispose of in accordance with local and national legislation. Clean surface thoroughly to remove residual contamination.

6.4. Reference to other sections

For information on personal protection, see SECTION 8.2. For information on disposal considerations, see SECTION 13.1.

SECTION 7. Handling and storage

7.1. Precautions for safe handling

Provide an adequate training of workers on the safe handling of the product and first aid procedures. The work place and work methods shall be organized in such a way that direct contact with the product is prevented or minimized. Avoid breathing dust. Avoid contact with skin/eyes. Ensure adequate ventilation. Use a suitable personal protective equipment.

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool, dry and well ventilated place. Keep only in the original container. Keep container tightly closed and properly labeled. Avoid exposure to moisture and direct sunlight. Keep away from sources of heat or ignition. Keep away from incompatible materials.

7.3. Specific end use(s)

See ANNEX 1.

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

No specific exposure limit values are defined for the product. However, it is advisable not to exceed the following values on the basis of 8 hours exposure:

Inhalable dust	= 10 mg/m^3
Respirable dust	= 5 mg/m^3

DNEL - dermal	= 2.9 mg/kg bw/day - worker
DNEL - inhalation	= 5.2 mg/m³ - worker
DNEL - oral	= 8.1 mg/kg bw/day - general population
DNEL - dermal	= 1.5 mg/kg bw/day - general population
DNEL - inhalation	= 1.3 mg/m³ - general population

PNEC - aqua (fresh water)	= 0.3125 mg/l
PNEC - aqua (marine water)	= 0.3125 mg/l
PNEC - aqua (intermittent releases)	= 0.514 mg/l
PNEC - sewage treatment plant	= 10 mg/l
PNEC - sediment (fresh water)	= 1.141 ppm
PNEC - sediment (marine water)	= 1.141 ppm
PNEC - soil	= 0.0449 ppm
PNEC - oral	no potential bioaccumulation

8.2. Exposure controls

Use personal protective equipment in accordance with European legislation. Consult the supplier in all cases before making a final decision.




Skin protection:	Wear impervious work clothing and safety footwear for professional use.
Hand protection:	Use impervious gloves in nitrile rubber (thickness > 0,35 mm; breakthrough time > 480 min) or butyl rubber (thickness > 0,5 mm; breakthrough time > 480 min) [ref. EN 374].
Eye protection:	Use safety glasses with side shields [ref. EN 166].
Respiratory protection:	Wear a dust mask with type P1 filter or better [ref. EN 140/143].
Technical and hygienic measures:	Provide local exhaust ventilation suction or other devices to maintain the levels of particles in the air below the recommended exposure limits. Emergency eye wash fountains and safety showers should be available close to any potential exposure source. Do no eat, drink or smoke when using this product. Wash hands and other exposed areas after use. Wash periodically work clothing and personal protective equipment to remove contaminants. Handle in accordance with good industrial hygiene and safety practices.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

a) Appearance:	white crystalline solid
b) Odour:	odourless
c) Odour threshold:	not available
d) pH:	2.2 (1470 g/l acqueous solution at 25 °C)
e) Melting/freezing point:	169 °C
f) Initial boiling point and boiling range:	179.1 °C --- ASTM E537/07
g) Flash point:	> 100 °C --- ASTM D93/07
h) Evaporation rate:	not available
i) Flammability (solid, gas):	non flammable
j) Upper/lower flammability or explosive limits:	not available
k) Vapour pressure:	< 5 Pa at 20 °C --- NTF 20-048

l) Vapour density:	not available
m) Relative density:	1.76 g/cm³
n) Solubility:	water: 1390 g/l at 20 °C ; ethanol: 33 g/100 ml at 25 °C ; ether: 0.4 g/100 ml at 25 °C
o) Partition coefficient: n-octanol/water:	log Pow = -1.91 --- OECD 107
p) Auto-ignition temperature:	375 °C at 1013 hPa --- NFT 20-036
q) Decomposition temperature:	425 °C
r) Viscosity:	not applicable
s) Explosive properties:	not explosive
t) Oxidising properties:	not oxidizer

9.2. Other information

Non data available.

SECTION 10. Stability and reactivity

10.1. Reactivity

The product is not reactive under recommended use and storage conditions.

10.2. Chemical stability

The product is stable under recommended use and storage conditions.

10.3. Possibility of hazardous reactions

See SECTON 10.1.

10.4. Conditions to avoid

Keep away from sources of heat or ignition. Keep away from incompatible materials.

10.5. Incompatible materials

Acids, bases, strong oxidizing agents and silver.

10.6. Hazardous decomposition products

In case of thermal decomposition, carbon oxides may be released.

SECTION 11. Toxicological information

11.1. Information on toxicological effects

a) Acute toxicity

Oral	rat	LD_{50} >2000 mg/kg	OECD423
Dermal	rat	LD_{50} >2000 mg/kg	OECD402
Inhalation	not tested		

Available data indicates that classification criteria are not met.

b) Skin corrosion/irritation

Cutaneous	not irritant	OECD 404

Available data indicates that classification criteria are not met.

c) Serious eye damage/irritation

Ocular	causes serious eye damage	OECD 407

d) Respiratory or skin sensitisation

Cutaneous	not sensitizer	OECD 429
Respiratory	not tested	

Available data indicates that classification criteria are not met.

e) Germ cell mutagenicity

In vivo	negative
In vitro	negative

Available data indicates that classification criteria are not met.

f) Cancerogenicity

Non tested.

g) Reproductive toxicity

NOAEL = 181 mg/kg bw/day	no teratogenic effect

Available data indicates that classification criteria are not met.

h) STOT-single exposure

Non tested.

i) STOT-repeated exposure

Oral	rat	NOAEL = 2640 mg/kg bw/day	OECD 453	read across from monosodium L(+)-tartrate
Dermal	not tested			
Inhalation	not tested			

j) Aspiration hazard

Not applicable.

SECTION 12: Ecological information

12.1. Toxicity

LC_{50}	fishes	>100 mg/l	96 hours	OECD203
LC_{50}	fishes	506 g/l	96 hours	ECOSAR
LC_{50}	fishes	884 g/l	96 hours	ECOSAR
LC_{50}	fishes	488 g/l	14 days	ECOSAR
ChV	fishes	43,141 M/L		ECOSAR
ChV	fishes	13,137 M/L		ECOSAR
EC_{50}	daphnia magna	93.31 mg/l	48 hours	OECD 202
EC_{50}	daphnia magna	135 mg/l	32 hours	
EC_{50}	daphnia	183 mg/l	48 hours	ECOSAR
ChV	daphnia	13,201 M/L	16 days	ECOSAR
LC_{50}	americamysis bahia (shrimp) (SW)	4300 g/l	96 hours	ECOSAR
ChV	americamysis bahia (shrimp) (SW)	904 M/L	16 days	ECOSAR
EC_{50}	algae	51.4 mg/l	72 hours	OECD201
NOEC	algae	3.125 mg/l	72 hours	OECD201
EC_{50}	algae	236.16 g/l	96 hours	ECOSAR
ChV	algae	5,471 M/L		ECOSAR
EC_{50}	activated sludge	>1000 mg/l	3 hours	OECD209
EC_{10}	activated sludge	>1000 mg/l	3 hours	OECD209
LC_{50}	earthworm	5,343 g/l	14 days	ECOSAR

Available data indicates that classification criteria are not met.

12.2. Persistence and degradability

Hydrolysis	hydrolytically stable	OECD 111
Biodegradability (28 days)	readily biobigradable	OECD 306
BOD5/COD	45%	
Half life in soil	9.6 h	

12.3. Bioaccumulative potential

Log Pow	= -1.91

Based on the n-octanol/water partition coefficient, the product has a low bioaccumulation potential.

12.4. Mobility in soil

Non data available.

12.5. Results of PBT and vPvB assessment

The product does not meet PBT and vPvB criteria.

12.6. Other adverse effects

Non data available.

SECTION 13. Disposal considerations

13.1. Waste treatment methods

Disposal must be performed in accordance with local and national legislation. Small quantities could be washed with water and conveyed to controlled discharges and then to water conditioner. For larger amounts, it is advisable to neutralize it by calcium hydrate or carbonate and to recover the obtained calcium tartrate, insoluble in water, for digestion/authorized regeneration. Empty containers must be cleaned before sending them to recycling, incineration or discharges.

SECTION 14. Transport information

The product is not subject to the provisions of existing legislation governing the transport of dangerous goods by road (ADR), rail (RID), sea (IMDG Code) and air (IATA).

14.1. UN number
Not applicable.

14.2. UN proper shipping name
Not applicable.

14.3. Transport hazard class(es)
Not applicable.

14.4. Packing group
Not applicable.

14.5. Environmental hazards
Not applicable.

14.6. Special precautions for user
Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Not applicable.

SECTION 15. Regulatory information

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

The product does not contain substances of very high concern (SVHC) included in the candidate list for Authorisation or subjected to Authorisation/Restriction according to Regulation (EC) 1907/2006 (REACH).

15.2. Chemical safety assessment
A chemical safety assessment has been performed for the product.

SECTION 16. Other information

Revision of the safety data sheet:
the previous version of the safety data sheet has been reissued on the basis of the provisions of Annex II of the last version Regolamentgo EC n ° 1907/2006 (REACH)

Full text of hazard statements (H) cited in SECTION 2 and SECTION 3:

H318	Causes serious eye damage

Principali riferimenti bibliografici e fonti di dati:

- Regulation (EC) 1272/2008 (CLP) (and its subsequent modifications and amendments)
- Regulation (EC) 1907/2006 (REACH) (and its subsequent modifications and amendments)
- Tartaric acid - Chemical Safety Report

Acronyms:

AC:	article category
ADR:	european agreement concerning the international carriage of dangerous goods by road
CLP:	classification labelling and packaging
DNEL:	derived no effect level
DU:	downstream user
EC_{50}:	effective concentration for 50 percent of the organisms
ERC:	environmental release category
ES:	exposure scenario
IATA:	international air transport association
IMDG Code:	International Maritime Dangerous Goods Code
LC_{50}:	lethal concentration for 50 percent of the organisms
LD_{50}:	lethal dose for 50 percent of the organisms
NOAEL:	no observed adverse effect level
OC:	operational conditions
OECD:	organisation for economic cooperation and development
PBT:	persistent, bioaccumulative and toxic
PC:	product category
PEC:	predicted effect concentration
PNEC:	predicted no effect concentration
PROC:	process category
REACH:	registration, evaluation and authorization of chemicals

RID:	regulations concerning the international carriage of dangerous goods by rail
RMMs:	risk management measures
spERC:	specific environmental release category
SU:	sector of use
vPvB:	very persistent and very bioaccumulative

Notes:

The information provided in this safety data sheet is correct to the best of our knowledge at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation and disposal and is not to be considered a warranty or quality specification. The user must verify the suitability and completeness of the information in relation to its particular use of the product.

Annex 1 (exposure scenarios) from page 8 to page 17

ANNEX 1 - EXPOSURE SCENARIOS

Section 1	**ES Title**
Title	Manufacture of substance
SU	Industrial
	SU_3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
	SU8 - Manufacture of bulk, large scale chemicals (including petroleum products)
	SU_9 - Manufacture of fine chemicals
PROC	$PROC_1$ - Use in closed process, no likelihood of exposure
	$PROC_2$ - Use in closed, continuous process with occasional controlled exposure
	$PROC_3$ - Use in closed batch process (synthesis or formulation)
	$PROC_4$ - Use in batch and other process (syn-thesis) where opportunity for exposure arises
	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
	$PROC_9$ - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PC / AC	PC_{35} - Washing and cleaning products (including solvent based products)
	PC_{39} - Cosmetics, personal care products
	AC_4 - Stone, plaster, cement, glass and ceramic articles
ERC	ERC_1 - Manufacture of substances
Processes, tasks, activities covered	Manufacture of substance. Includes material transfers, storage, maintenance, loading and sampling

Section 2	**OC and RMM**
Section 2.1	**Control of worker exposure**
Product characteristics	
Physical form of the product	Solid
Vapour pressure	< 5 Pa at 20 °C
Concentration of substance in product	Covers a concentration of substance in product up to 100%
Amount used	Not applicable
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Human factors not influenced by risk management	Not applicable
Other OC affecting worker exposure	-
OC	**RMM**
$PROC_1$	No specific measures identified
$PROC_2$	No specific measures identified
$PROC_3$	No specific measures identified
$PROC_4$	Provide a good standard of general ventilation
	Wear chemically resistant gloves (effectiveness 90% - tested to EN_{374}) in combination with basic employee training
PROC8a	Wear a dust mask (effectiveness 80% - tested to $EN_{140/143}$) with Type P_1 filter or better
	Wear chemically resistant gloves (effectiveness 90% - tested to EN_{374}) in combination with basic employee training
PROC8b	Wear a dust mask (effectiveness 80% - tested to $EN_{140/143}$) with Type P_1 filter or better
	Wear chemically resistant gloves (effectiveness 80% - tested to EN_{374})
$PROC_9$	Wear a dust mask (effectiveness 80% - tested to $EN_{140/143}$) with Type P_1 filter or better
	Wear chemically resistant gloves (effectiveness 80% - tested to EN_{374})
Section 2.2	**Control of environmental exposure**
	No exposure assessment has been performed for the environment

Section 3	**Exposure Estimation**

3.1. Health

SU	PROC/PC	RCR inhalation	RCR dermal	RCR combined
Industrial -SU8/9/3	$PROC_1$	0.002	0.118	0.120
Industrial -SU8/9/3	$PROC_2$	0.096	0.472	0.569
Industrial -SU8/9/3	$PROC_3$	0.192	0.118	0.310
Industrial -SU8/9/3	$PROC_4$	0.673	0.236	0.909
Industrial -SU8/9/3	PROC8a	0.192	0.473	0.665
Industrial -SU8/9/3	PROC8b	0.192	0.473	0.665
Industrial - SU_3/ SU10	$PROC_9$	0.192	0.473	0.665

Predicted exposures are not expected to exceed the applicable exposure limits given in SECTION 8 of the SDS, when the above mentioned OC/RMM are implemented

Section 4	**Guidance to check compliance with the ES**

4.1. Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise stated
Where other OC/RMM are adopted, then users should ensure that risks are managed to at least equivalent levels

Section 1	**ES Title**
Title	Formulation & (Re)packing of Substances and Mixtures
SU	Industrial SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites Su10 - Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
PROC	PROC 5 - Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PC / AC	PC35 - Washing and cleaning products (including solvent based products) PC39 - Cosmetics, personal care products AC4 - Stone, plaster, cement, glass and ceramic articles
ERC	ERC2 - Formulation of preparations
Processes, tasks, activities covered	Formulation and (re)packing of the substance and its mixtures in batch or continuous operations. It includes storage, materials transfers, mixing, large and small scale packing, sampling, maintenance

Section 2	**OC and RMM**
Section 2.1	**Control of worker exposure**
Product characteristics	
Physical form of the product	Solid
Vapour pressure	< 5 Pa at 20 °C
Concentration of substance in product	Covers a concentration of substance in product up to 100%
Amount used	Not applicable
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Human factors not influenced by risk management	Not applicable
Other OC affecting worker exposure	-
OC	**RMM**
PROC8a	Wear a dust mask (effectiveness 80% - tested to EN140/143) with Type P1 filter or better Wear chemically resistant gloves (effectiveness 90% - tested to EN374) in combination with basic employee training
PROC5	Wear a dust mask (effectiveness 80% - tested to EN140/143) with Type P1 filter or better Wear chemically resistant gloves (effectiveness 90% - tested to EN374) in combination with basic employee training
PROC8b	Wear a dust mask (effectiveness 80% - tested to EN140/143) with Type P1 filter or better Wear chemically resistant gloves (effectiveness 80% - tested to EN374)
PROC9	Wear a dust mask (effectiveness 80% - tested to EN140/143) with Type P1 filter or better Wear chemically resistant gloves (effectiveness 80% - tested to EN374)
Section 2.2	**Control of environmental exposure**
	No exposure assessment has been performed for the environment

Section 3	**Exposure Estimation**

3.1. Health

SU	PROC/PC	RCR inhalation	RCR dermal	RCR combined
Industrial - SU3/ SU10	PROC5	0.192	0.473	0.665
Industrial - SU3/ SU10	PROC8a	0.192	0.473	0.665
Industrial - SU3/ SU10	PROC8b	0.192	0.473	0.665
Industrial - SU3/ SU10	PROC9	0.192	0.473	0.665

Predicted exposures are not expected to exceed the applicable exposure limits given in SECTION 8 of the SDS, when the above mentioned OC/RMM are implemented

Section 4	**Guidance to check compliance with the ES**

4.1. Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise stated
Where other OC/RMM are adopted, then users should ensure that risks are managed to at least equivalent levels

Section 1	**ES Title**
Title	Use as Intermediate
SU	Industrial (SU_3, SU8, SU_9)
PROC	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation) PROC4 - Use in batch and other process (syn-thesis) where opportunity for exposure arises PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PC / AC	PC_{35} - Washing and cleaning products (including solvent based products) PC_{39} - Cosmetics, personal care products AC_4 - Stone, plaster, cement, glass and ceramic articles
ERC	ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates) ERC6b - Industrial use of reactive processing aids
Processes, tasks, activities covered	Use as Intermediate. Includes material transfers, storage, maintenance, loading and sampling

Section 2	**OC and RMM**
Section 2.1	**Control of worker exposure**
Product characteristics	
Physical form of the product	Solid
Vapour pressure	< 5 Pa at 20 °C
Concentration of substance in product	Covers a concentration of substance in product up to 100%
Amount used	Not applicable
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Human factors not influenced by risk management	Not applicable
Other OC affecting worker exposure	
OC	**RMM**
PROC1	No specific measures identified
PROC2	No specific measures identified
PROC3	No specific measures identified
PROC4	Provide a good standard of general ventilation Wear chemically resistant gloves (effectiveness 90% - tested to EN374) in combination with basic employee training
PROC8a	Wear a dust mask (effectiveness 80% - tested to EN140/143) with Type P1 filter or better Wear chemically resistant gloves (effectiveness 90% - tested to EN374) in combination with basic employee training
PROC8b	Wear a dust mask (effectiveness 80% - tested to EN140/143) with Type P1 filter or better Wear chemically resistant gloves (effectiveness 80% - tested to EN374)
PROC9	Wear a dust mask (effectiveness 80% - tested to EN140/143) with Type P1 filter or better Wear chemically resistant gloves (effectiveness 80% - tested to EN374)
Section 2.2	**Control of environmental exposure**
	No exposure assessment has been performed for the environment

Section 3 **Exposure Estimation**

3.1. Health

SU	PROC/PC	RCR inhalation	RCR dermal	RCR combined
Industrial -SU8/9/3	PROC1	0.002	0.118	0.120
Industrial -SU8/9/3	PROC2	0.096	0.472	0.569
Industrial -SU8/9/3	PROC3	0.192	0.118	0.310
Industrial -SU8/9/3	PROC4	0.673	0.236	0.909
Industrial -SU8/9/3	PROC8a	0.192	0.473	0.665
Industrial -SU8/9/3	PROC8b	0.192	0.473	0.665
Industrial - SU_3/ SU10	PROC9	0.192	0.473	0.665

Predicted exposures are not expected to exceed the applicable exposure limits given in SECTION 8 of the SDS, when the above mentioned OC/RMM are implemented

Section 4 **Guidance to check compliance with the ES**

4.1. Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise stated
Where other OC/RMM are adopted, then users should ensure that risks are managed to at least equivalent levels

Section 1	**ES Title**
Title	**Construction applications (professional use)**
SU	Professional SU22 - Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
PROC	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
ERC	ERC 8c - Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC 8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix
Processes, tasks, activities covered	Covers the use in construction (application of concrete in construction activities)

Section 2	**OC and RMM**
Section 2.1	**Control of worker exposure**
Product characteristics	
Physical form of the product	Solid
Vapour pressure	< 5 Pa at 20 °C
Concentration of substance in product	Covers a concentration of substance in product up to 100%
Amount used	Not applicable
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Human factors not influenced by risk management	Not applicable
Other OC affecting worker exposure	Assumes a good basic standard of occupational hygiene is implemented
OC	**RMM**
PROC8a	Wear a dust mask (effectiveness 80% - tested to EN140/143) with Type P1 filter or better Wear chemically resistant gloves (effectiveness 90% - tested to EN374) in combination with basic employee training PPE16
PROC8b	Wear a dust mask (effectiveness 80% - tested to EN140/143) with Type P1 filter or better Wear chemically resistant gloves (effectiveness 80% - tested to EN374)
PROC9	Wear a dust mask (effectiveness 80% - tested to EN140/143) with Type P1 filter or better Wear chemically resistant gloves (effectiveness 80% - tested to EN374)
Section 2.2	**Control of environmental exposure**
	No exposure assessment has been performed for the environment

Section 3	**Exposure Estimation**

3.1. Health

SU	PROC/PC	RCR inhalation	RCR dermal	RCR combined
Professional - SU22	PROC 8a	0.192	0.473	0.665
Professional - SU22	PROC 8a	0.192	0.473	0.665
Professional - SU22	PROC 9	0.192	0.473	0.665

Predicted exposures are not expected to exceed the applicable exposure limits given in SECTION 8 of the SDS, when the above mentioned OC/RMM are implemented

Section 4	**Guidance to check compliance with the ES**

4.1. Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise stated
Where other OC/RMM are adopted, then users should ensure that risks are managed to at least equivalent levels

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Section 1	**ES Title**
Title	**Construction applications (consumer use)**
SU	Consumer
	SU21 - Consumer uses: Private households (= general public = consumers)
AC	AC4 - Stone, plaster, cement, glass and ceramic articles
Processes, tasks, activities covered	Covers general exposures to consumers arising from the use in construction (stone, plaster, cement)
ERC	ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release
	ERC11a - Wide dispersive indoor use of long-life articles and materials with low release
SpERC	-

Section 2	**OC and RMM**
Section 2.1	**Control of consumer exposure**
Product characteristics	
Physical form of the product	Solid
Vapour pressure	< 5 Pa at 20 °C
Concentration of substance in product	Covers a concentration up to 1%, unless stated differently
Amount used	Covers use amount up to 130 g., unless stated differently
	Covers skin contact area up to 1000 cm2
Frequency and duration of use/esposizione	Covers use frequency up to 1 time every 3 months, unless stated differently
	Covers exposure up to 2 hours per event
Other OC affecting exposure	Assumes use at ambient temperature, unless stated differently
	Assumes use in a 20 m3 room with typical ventilation
Section 2.1.1	**OC and RMM**
AC4 - stone, plaster, cement	OC Covers a concentration up to 1%, unless stated differently
	Covers use up to 4 events per year
	Covers use up to 1 time for day of use
	Covers skin contact area up to 1000 cm2 for each use event
	Covers use amount up to 130 g.
	Covers use in a 20 m3 room
	For each use event, covers exposure up to 2 hours per event
	RMM No specific RMM identified beyond the OC stated
Section 2.2	**Control of environmental exposure**
	No exposure assessment has been performed for the environment

Section 3	**Exposure Estimation**

3.1. Health

SU	PROC/AC	RCR inhalation	RCR dermal	RCR combined
Consumer - SU21	AC4	2.50E-02	4.44E-01	4.44E-01

Predicted exposures are not expected to exceed the applicable consumer reference, when the above mentioned OC/RMM are implemented

Section 4	**Guidance to check compliance with the ES**

4.1. Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise stated
Where other OC/RMM are adopted, then users should ensure that risks are managed to at least equivalent levels

Section 1	**ES Title**
Title	**Ceramics applications (professional use)**
Descrittore d'uso	Professional
	SU22 - Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
PROC	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
ERC:	ERC 8c - Wide dispersive indoor use resulting in inclusion into or onto a matrix
	ERC 8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix
Processes, tasks, activities covered	Covers the use of ceramics in construction activities

Section 2	**OC and RMM**
Section 2.1	**Control of worker exposure**
Product characteristics	
Physical form of the product	Solid
Vapour pressure	< 5 Pa at 20 °C
Concentration of substance in product	Covers a concentration of substance in product up to 100%
Amount used	Not applicable
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Human factors not influenced by risk management	Not applicable
Other OC affecting worker exposure	Assumes a good basic standard of occupational hygiene is implemented
OC	**RMM**
PROC 8a	Provide a good standard of general ventilation
	Wear chemically resistant gloves (effectiveness 90% - tested to EN374) in combination with basic employee training
PROC 8b	Wear a dust mask (effectiveness 80% - tested to EN140/143) with Type P1 filter or better
	Wear chemically resistant gloves (effectiveness 80% - tested to EN374)
PROC 9	Wear a dust mask (effectiveness 80% - tested to EN140/143) with Type P1 filter or better
	Wear chemically resistant gloves (effectiveness 80% - tested to EN374)
Section 2.2	**Control of environmental exposure**
	No exposure assessment has been performed for the environment

Section 3 **Exposure Estimation**

3.1. Health

SU	PROC/PC	RCR inhalation	RCR dermal	RCR combined
Professional - SU22	PROC 8a	0.192	0.473	0.665
Professional - SU22	PROC 8b	0.192	0.473	0.665
Professional - SU22	PROC 9	0.192	0.473	0.665

Predicted exposures are not expected to exceed the applicable exposure limits given in SECTION 8 of the SDS, when the above mentioned OC/RMM are implemented

Section 4 **Guidance to check compliance with the ES**

4.1. Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise stated
Where other OC/RMM are adopted, then users should ensure that risks are managed to at least equivalent levels

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Section 1	**ES Title**
Title	**Ceramiche (consumer use)**
SU	Consumer
	SU21 - Consumer uses: Private households (= general public = consumers)
AC	AC4 - Stone, plaster, cement, glass and ceramic articles
Processes, tasks, activities covered	Covers general exposures to consumers arising from the use of ceramic tiles for flooring and walls
ERC	ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release
	ERC11a - Wide dispersive indoor use of long-life articles and materials with low release
SpERC	-

Section 2	**OC and RMM**
Section 2.1	**Control of consumer exposure**
Product characteristics	
Physical form of the product	Solid
Vapour pressure	< 5 Pa at 20 °C
Concentration of substance in product	Covers a concentration up to 1%, unless stated differently
Amount used	Covers use amount up to 1350 g., unless stated differently
	Covers skin contact area up to 1000 cm2
Frequency and duration of use/esposizione	Covers use frequency up to 1 time every 4 months, unless stated differently
	Covers exposure up to 2 hours per event
Other OC affecting exposure	Assumes use at ambient temperature, unless stated differently
	Assumes use in a 20 m3 room with typical ventilation
Section 2.1.1	**OC and RMM**
AC4 - ceramica	OC Covers a concentration up to 1%, unless stated differently
	Covers use up to 3 events per year
	Covers use up to 1 time for day of use
	Covers skin contact area up to 1000 cm2
	For each use event, covers use amount up to 1350 g.
	Covers use in a 20 m3 room
	For each use event, covers exposure up to 2 hours per event
	RMM No specific RMM identified beyond the OC stated
Section 2.2	**Control of environmental exposure**
	No exposure assessment has been performed for the environment

Section 3	**Exposure Estimation**

3.1. Health

SU	PROC/AC	RCR inhalation	RCR dermal	RCR combined
Consumer - SU21	AC4	2.60E-01	7.11E-01	9.71E-01

Predicted exposures are not expected to exceed the applicable consumer reference, when the above mentioned OC/RMM are implemented

Section 4	**Guidance to check compliance with the ES**

4.1. Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise stated
Where other OC/RMM are adopted, then users should ensure that risks are managed to at least equivalent levels

Section 1	**ES Title**
Title	**Cleaning agents (consumer use)**
SU	Consumer
	SU21 - Consumer uses: Private households (= general public = consumers)
PC	PC35 - Washing and cleaning products (including solvent based products)
Processes, tasks, activities covered	Covers general exposures to consumers arising from cleaning agents
ERC	ERC8a - Wide dispersive indoor use of processing aids in open systems
Section 2	**OC and RMM**
Section 2.1	**Control of consumer exposure**
Section 2.1.1	**1. Contributing Scenario - Laundry hand wash**
Product characteristics	
Physical form of the product	Liquid
Vapour pressure	< 5 Pa at 20 °C
Concentration of substance in product	Covers a concentration up to 5%, unless stated differently
Amount used	Covers use amount up to 7.8 g., unless stated differently
	Covers skin contact area up to 35.7 cm2 (finger tips)
Frequency and duration of use/esposizione	Covers use frequency up to 4 times per week, unless stated differently
	Covers exposure up to 1 hour per event
Other OC affecting exposure	Assumes use at ambient temperature, unless stated differently
	Assumes use in a 20 m3 room with typical ventilation
Section 2.1.1	**OC and RMM**
PC 35 - Cleaning agents - Laundry hand wash	OC Covers a concentration up to 15%, unless stated differently
	Covers use up to 2 events per week
	Covers skin contact area up to 35.7 cm2 (finger tips)
	For each use event, covers use amount up to 7.8 g. (considering 1% wash solution)
	Covers use in a 20 m3 room
	For each use event, covers exposure up to 1 hour per event
	RMM Wear suitable gloves
Section 2.1.2	**2. Contributing Scenario - Hand dishwashing**
Product characteristics	
Physical form of the product	Liquid
Vapour pressure	< 5 Pa at 20 °C
Concentration of substance in product	Covers a concentration up to 5%, unless stated differently
Amount used	Covers use amount up to 3 g., unless stated differently
	Covers skin contact area up to 35.7 cm2 (finger tips)
Frequency and duration of use/esposizione	Covers use frequency up to 2 times per day, unless stated differently
	Covers exposure up to 1 hour per event
Other OC affecting exposure	Assumes use at ambient temperature, unless stated differently
	Assumes use in a 20 m3 room with typical ventilation
Section 2.1.2	**OC and RMM**
PC 35 - Cleaning agents - Hand dishwashing	OC Covers a concentration up to 5%, unless stated differently
	Covers use up to 2 events per day
	Covers skin contact area up to 35.7 cm2 (finger tips)
	For each use event, covers use amount up to 3 g.
	Covers use in a 20 m3 room
	For each use event, covers exposure up to 1 hour per event
	RMM Wear suitable gloves
Section 2.1.3	**3. Contributing Scenario - Surface cleaners (powder)**
Product characteristics	
Physical form of the product	Liquid
Vapour pressure	< 5 Pa at 20 °C
Concentration of substance in product	Covers a concentration up to 5%, unless stated differently
Amount used	Covers use amount up to 20 g., unless stated differently
	Covers skin contact area up to 35.7 cm2 (finger tips)
Frequency and duration of use/esposizione	Covers use frequency up to 2 times per week, unless stated differently
	Covers exposure up to 1 hour per event
Other OC affecting exposure	Assumes use at ambient temperature, unless stated differently
	Assumes use in a 20 m3 room with typical ventilation
Section 2.1.3	**OC and RMM**
PC 35 - Cleaning agents - Surface cleaners (powder)	OC Covers a concentration up to 1%, unless stated differently
	Covers use up to 2 events per week
	Covers skin contact area up to 35.7 cm2 (finger tips)
	For each use event, covers use amount up to 20 g.
	Covers use in a 20 m3 room
	For each use event, covers exposure up to 1 hour per event
	RMM Wear suitable gloves
Section 2.1.4	**3. Contributing Scenario - Surface cleaners (spray)**
Product characteristics	

Physical form of the product	Liquid
Vapour pressure	< 5 Pa at 20 °C
Concentration of substance in product	Covers a concentration up to 5%, unless stated differently
Amount used	Covers use amount up to 5 g., unless stated differently Covers skin contact area up to 35.7 cm2 (finger tips)
Frequency and duration of use/esposizione	Covers use frequency up to 1 time per week, unless stated differently Covers exposure up to 1 hour per event
Other OC affecting exposure	Assumes use at ambient temperature, unless stated differently Assumes use in a 20 m3 room with typical ventilation

Section 2.1.4 **OC and RMM**

PC 35 - Cleaning agents - detergenti di superficie (spray)	OC	Covers a concentration up to 5%, unless stated differently Covers use up to 1 event per week Covers skin contact area up to 35.7 cm2 (finger tips) For each use event, covers use amount up to 5 g. Covers use in a 20 m3 room For each use event, covers exposure up to 1 hour per event
	RMM	Wear suitable gloves

Section 2.2 **Control of environmental exposure**

No exposure assessment has been performed for the environment

Section 3 **Exposure Estimation**

3.1. Health

SU	PROC/AC	RCR inhalation	RCR dermal	RCR combined
Consumer - SU21	PC35	6.09E-01	9.92E-02	7.09E-01
Consumer - SU21	PC35	5.36E-01	3.97E-01	9.33E-01
Consumer - SU21	PC35	9.38E-01	5.95E-03	9.43E-01
Consumer - SU21	PC35	7.81E-01	1.98E-02	8.01E-01

Predicted exposures are not expected to exceed the applicable consumer reference, when the above mentioned OC/RMM are implemented

Section 4 **Guidance to check compliance with the ES**

4.1. Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise stated
The "Table of habits and practices for consumer products in Western Europe" Developed by AISE (2002) has been used to set theabove mentioned OC
Where other OC/RMM are adopted, then users should ensure that risks are managed to at least equivalent levels

Section 1	**ES Title**
Title	**Metal surface treatment products (consumer use)**
SU	Consumer
	SU21 - Consumer uses: Private households (= general public = consumers)
PC	PC14 - Metal surface treatment products, compresi i prodotti galvanici e galvanoplastici
Processes, tasks, activities covered	Covers general exposures to consumers arising from metal surface treatment, including galvanic and electroplating products
ERC	ERC8a - Wide dispersive indoor use of processing aids in open systems
Section 2	**OC and RMM**
Section 2.1	**Control of consumer exposure**
Section 2.1.1	**1. Contributing Scenario - Metal surface treatment products (consumer use)**
Product characteristics	
Physical form of the product	Liquid
Vapour pressure	< 5 Pa at 20 °C
Concentration of substance in product	Covers a concentration up to 5%, unless stated differently
Amount used	Covers use amount up to 20 g., unless stated differently
	Covers skin contact area up to 857.5 cm2 (two hands)
Frequency and duration of use/esposizione	Covers use frequency up to 1 time per week, unless stated differently
	Covers exposure up to 10 minutes per event
Other OC affecting exposure	Assumes use at ambient temperature, unless stated differently
	Assumes use in a 20 m3 room with typical ventilation
Section 2.1.1	**OC and RMM**
PC 35 - Metal surface treatment products	OC Covers a concentration up to 5%, unless stated differently
	Covers use up to 1 event per week
	Covers skin contact area up to 857.5 cm2 (due mani)
	For each use event, covers use amount up to 20 g.
	Covers use in a 20 m3 room
	For each use event, covers exposure up to 10 minutes per event
	RMM Not required
Section 2.2	**Control of environmental exposure**
	No exposure assessment has been performed for the environment
Section 3	**Exposure Estimation**
3.1. Health	

SU	PROC/AC	RCR inhalation	RCR dermal	RCR combined
Consumer - SU21	PC14	5.38E-01	6.67E-01	6.67E-01

Predicted exposures are not expected to exceed the applicable consumer reference, when the above mentioned OC/RMM are implemented

Section 4	**Guidance to check compliance with the ES**
4.1. Health	

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise stated
The "Table of habits and practices for consumer products in Western Europe" Developed by AISE (2002) has been used to set theabove mentioned OC
Where other OC/RMM are adopted, then users should ensure that risks are managed to at least equivalent levels