TARTARIC ACID NATURAL

Safety Data Sheet

according to Regulation (EC) No. 453/2010

Revision date: 26/02/2011 Supersedes: 26/02/2011 Version: 1.0

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

1.1. Product identifier

Chemical type	:	Substance
Substance name	:	Tartaric acid
Trade name	:	TARTARIC ACID NATURAL
EC no	:	201-766-0
CAS No.	:	87-69-4
REACH registration No.	:	01-2119537204-47
Product code	:	SC/232
IUPAC name	:	tartaric acid
Chemical name	:	(+)-tartaric acid
Formula	:	C4H6O6
Synonyms	:	Acid (2R,3R)-2,3-dihydroxybutane, Butanedioic acid, 2,3-dihydroxy- [R-(R,R)]-

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

1.2.1. Relevant identified uses

Use of the substance/preparation : Manufacture of substances
Formulation [mixing] of preparations and/or re-packaging
Construction application
Ceramic application

1.2.2. Uses advised against

None known

1.3. Details of the supplier of the safety data sheet

Caviro Distillerie s.r.l.
Via Convertite, 8
I-48018 Faenza (Ravenna) - Italy
T (+39) 0546 627 611
roberto.zama@caviro.it

1.4. Emergency telephone number

Emergency number : (+39) 0546 627 611
(+39) 0422 304 653

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Eye Dam. 1 H318

Full text of H-phrases: see section 16.

Classification according to Directive 67/548/EEC or 1999/45/EC

Xi; R41

Full text of R-phrases: see section 16.

Adverse physicochemical, human health and environmental effects

No data available.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

GHS05

Signal word (CLP) : Danger

Hazard statements (CLP) : H318 - Causes serious eye damage

Precautionary statements (CLP) : P280 - Wear eye protection, protective gloves, protective clothing.
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

other hazards which do not result in classification : No data available.

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	%	Classification according to Directive 67/548/EEC
(+)-tartaric acid	(CAS No.) 87-69-4 (EC no) 201-766-0	99 - 100	Eye Damage 1. H318

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
(+)-tartaric acid	(CAS No.) 87-69-4 (EC no) 201-766-0	99 - 100	Xi, R41

Full text of R-, H- and EUH-phrases: see section 16.

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove victim to fresh air. In case of breathing difficulties administer oxygen. In case of irregular breathing or respiratory arrest provide artificial respiration. If exposure symptoms persist, seek medical attantion.

First-aid measures after skin contact : Remove immediately contaminated clothing. Wash off immediately with soap and plenty of water. Rinse immediately with plenty of water for 15 minutes. If skin irritation persists, take medical advice.

First-aid measures after eye contact : Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 minutes minimum). If eye irritation persists, take medical advice.

First-aid measures after ingestion : Do not induce vomiting. If swallowed, rinse mouth with water (only if the person is conscious). If the person is fully conscious, make him/her drink water. Never give an unconscious person anything to drink.

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

Symptoms/injuries after inhalation : May cause irritation to the respiratory tract and to other mucous membranes.

Symptoms/injuries after skin contact : May cause slight temporary irritation.

Symptoms/injuries after eye contact : Causes serious eye irritation.

Symptoms/injuries after ingestion : May cause irritation to the respiratory tract and to other mucous membranes.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: : carbon dioxide (CO2), dry chemical powder, foam. Water.

Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Not flammable. in presence of intense heat may generate acrid fumes. It stops burning if heat source is cleared away. On combustion forms: carbon oxides (CO and CO2).

Explosion hazard : not explosive.

Reactivity : None known.

5.3. Advice for firefighters

Protective equipment for firefighters : Extra personal protection: complete protective clothing including self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Refer to section 8.

6.1.2. For emergency responders

Protective equipment : Refer to section 8.

Emergency procedures : Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

6.2. Environmental precautions

Avoid discharge to the environment. Do not discharge into drains or the environment. Do not discharge into surface water. Relevant water authorities should be notified of any large spillage to water course or drain.

6.3. Methods and material for containment and cleaning up

For containment : contain the discharged material.

Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal. Collect up the product and place it in a spare container: - suitably labelled. Flush residue with large amounts of water.

6.4. Reference to other sections

Refer to sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with skin and eyes. Avoid inhalation of product. Wear recommended personal protective equipment.

Hygiene measures : Wash hands thoroughly after handling. Wash contaminated clothing prior to re-use. Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage condition(s) : Keep in original containers. Keep container tightly closed. Store in a cool dry place. Keep away from heat. Protect from sunlight.

Incompatible materials : Strong oxidizing agents. Acids. Bases. Silver.

7.3. Specific end use(s)

No data available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

There is not any exposure limit listed for this substance. However, it is advisable not to exceed the following exposure on the basis of 8 hours:

Inhalation dust: 10 mg/m^3

Breathable 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

Appropriate engineering controls : Provide local exhaust or general room ventilation to minimize exposure to dust. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Personal protective equipment : Protective goggles. Gloves. Protective clothing. Dust formation: dust mask.

Hand protection : Protective gloves made of rubber or PVC. Use barrier cream if hypersensitive.

Eye protection : Protective goggles.

Skin and body protection : Wear long sleeves. Wear suitable protective clothing.

Respiratory protection : Dust mask.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance	:	Crystalline powder.
Colour	:	white. colourless.
Odour	:	odourless.
Odour threshold	:	No data available
pH	:	2.2 (1470 g/l solution in water at 25 °C)
Melting point	:	169 °C
Solidification point	:	No data available
Boiling point	:	179.1 °C ASTM E537/07
Flash point	:	> 100 °C ASTM D93/07
Relat. evapor. rate comp. to butylacetate	:	No data available
Flammability (solid, gas)	:	Non flammable.
Explosive limits	:	No data available
Vapour pressure	:	< 5 Pa at 20 °C NTF 20-048
Density	:	1.76 g/cm³
Solubility	:	Water: 1390 g/l at 20 °C Ethanol: 33 g/100ml 25 °C Ether: 0.4 g/100ml 25 °C
Log Pow	:	-1.91 OECD 107
Self ignition temperature	:	375 °C at 1013 hPa NFT 20-036
Decomposition temperature	:	425 °C
Viscosity, kinematic	:	not applicable
Viscosity, dynamic	:	not applicable
Surface tension	:	not applicable
Explosive properties	:	Non explosive.
Oxidising properties	:	Non oxidizing.

9.2. Other information

No data available.

SECTION 10: Stability and reactivity

10.1. Reactivity

None known.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

avoid heat source. it may generate acrid fumes.

10.5. Incompatible materials

Strong oxidizing agents. acids. Bases. Silver.

10.6. Hazardous decomposition products

Carbon oxides (CO, CO2).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified (Conclusive but not sufficient for classification)

TARTARIC ACID NATURAL (87-69-4)	
LD50 oral rat	> 2000 mg/kg bw OECD 423
LD50 dermal rat	> 2000 mg/kg bw OECD 402
LD50 inhalation	Not tested

Skin corrosion/irritation (in vivo)	:	Not irritating OECD 404
Serious eye damage/irritation (in vitro)	:	Causes serious eye damage OECD 437
Skin sensitisation	:	Not sensitizing OECD 429
Respiratory sensitisation	:	Not tested
Germ cell mutagenicity (in vitro)	:	Negative
Germ cell mutagenicity (in vivo)	:	Negative
Carcinogenicity	:	Not tested
Developmental toxicity/ teratogenicity	:	No teratogenic effects

Developmental toxicity/ teratogenicity: NOAEL : 181 mg/kg bw/day

TARTARIC ACID NATURAL (87-69-4)	
NOAEL (chronic,oral, rat/ male)	2460 mg/kg bw/day OECD 453, read across substance: monosodium L(+)-tartrate
NOAEL (chronic,dermal)	Not tested
NOAEL (chronic,inhalation)	Not tested

Aspiration hazard : Not applicable

SECTION 12: Ecological information

12.1. Toxicity

TARTARIC ACID NATURAL (87-69-4)	
LC50 fishes	>100 mg/l 96 h OECD203
LC50 fishes	506 g/l 96 h ECOSAR
LC50 fishes	884 g/l 96 h ECOSAR
LC50 fishes	488 g/l 14d ECOSAR
ChV fishes	43,141 M/L ECOSAR
ChV fishes	13,137 M/L ECOSAR
EC50 Daphnia magna	93.31 mg/l 48 h OECD 202
EC50 Daphnia magna	135 mg/l 32 h
EC50 Daphnia	183 mg/l 48 h ECOSAR
LC50 Mysid Shrimp (SW)	4300 g/l 96 h ECOSAR
ChV Daphnia	13,201 M/L 16 day ECOSAR
ChV Mysid Shrimp (SW)	904 M/L 16 day ECOSAR
EC50 algae	51.4 mg/l 72 h OECD201
NOEC algae	3.125 mg/l 72 h OECD201
EC50 algae	236.16 g/l 96 h ECOSAR
ChV algae	5,471 M/L ECOSAR
EC50 Activated Sludge	>1000 mg/l 3h OECD209
EC10 Activated Sludge	>1000 mg/l 3h OECD209
LC50 Earthworm	5,343 g/l 14 day ECOSAR

12.2. Persistence and degradability

TARTARIC ACID NATURAL (87-69-4)	
Hydrolysis as a function of (OECD 111)	Hydrolytically stable
Biodegradability (28 days, OECD 306)	Readily biobigradable
BOD5/COD	45%
Half life in soil	9.6 h

12.3. Bioaccumulative potential

TARTARIC ACID NATURAL (87-69-4)	
Log Kow	-1.91

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

TARTARIC ACID NATURAL (87-69-4)	
Results of PBT and vPvB assessment	This substance does not fulfill the criteria for PBT or vPvB properties

12.6. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Dispose of contents/container to comply with applicable local, national and international regulations.

Waste treatment methods : Small quantities may be washed with water and conveyed to controlled discharges and then to water conditioner. If well diluted these flows will cause no damages to the biological treatments. 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.

Waste disposal recommendations : Clean completely the emptied packings, preferably with water, better before sending them to recycling, incineration or discharges. Washing waters must be handled as per point 13.2. Washing waters must be handled as per waste treatment methods.

SECTION 14: Transport information

Not a dangerous good in sense of transport regulations.

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No data available.

15.1.2. National regulations

No data available.

15.2. Chemical safety assessment

CSA has been carried out

SECTION 16: Other information

Full text of R-, H- and EUH-phrases:

Eye Dam. 1	Serious Eye Damage/Irritation Category 1
H318	Causes serious eye damage
R41	Risk of serious damage to eyes.

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

Summary of Parameters used for assessing safe use:

DNELs:	Inhalation:	5.2 mg/m^3 for long-term systemic effects
	Dermal:	2.9 mg/kg bw/day for long-term systemic effects
	Oral:	8.1 mg/kg bw/day for long-term systemic effects
	(please also refer to section 8 SDS)	
PNECs:	Freshwater:	0.3125 mg/L
	Marine water:	0.3125 mg/L
	Sewage treatment plants:	10 mg/L
	Freshwater sediments:	1.141 mg/kg sediment dw
	Marine water sediments:	1.141 mg/kg sediment dw
	Soil:	0.0449 mg/kg soil dw
	(please also refer to section 12 SDS)	

The following exposure scenarios have been assessed for the product mentioned above:

1.	**Exposure scenario title**	**ES 1: Manufacture**
2.	**Description of activities/process(es) covered in the Exposure Scenario**	
	SU 3 Industrial uses: Uses of substances as such or in preparations at industrial sites SU 8 Manufacture of bulk, large scale chemicals (including petroleum products) SU9 Manufacture of fine chemicals 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 (synthesis) where opportunity for exposure arises PROC 8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC 8b 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) ERC 1 Manufacture of substances ERC 6a Industrial use resulting in manufacture of another substance (use of intermediates)	
3.	**Operational conditions**	
3.1	Duration of use for which the ES ensures control of risk	Duration of use: 8 h/day (all PROCs)
3.2	Frequency of use for which the ES ensures control of risk	Not restricted
4.	**Substance properties and use parameters**	
4.1	Physical form of product in which the substance is contained	Solid
4.1a	Surface area per amount of article containing the substance	Not applicable
4.2	Concentration of substance in use	100%
4.3	Amount used per time or per activity for which the RMMs, in combination with other operational conditions of use ensure control of risk	Not specified
5.	**Other operational conditions determining exposure**	
	Room volume	not restricted
	Ventilation rate:	not specified
	Temperature:	not restricted
	Water flow rate:	not limited
	Other operational conditions:	none
6.	**Risk Management Measures that, in combination with the operational conditions of use, ensure control of risk related to the different target groups**	
6.1.1	Occupational measures	Wearing of chemically resistant gloves (tested to EN374)

	not required (PROC 1, 2 & 3) required, effectiveness 90% (PROC4, 8a) required, effectiveness 80% (PROC 8b & 9) Respiratory protection tested to EN140/143 with Type P1 filter or better: not required (PROC 1, 2 & 3) required, effectiveness 80% (PROC 8a, 8b & 9) Provide good standard of general ventilation (PROC 4)
6.1.2 Consumer related measures:	Not applicable for this Exposure Scenario
6.2 Environment related measures	Not applicable as substance is not hazardous to the environment
7. Waste related measures needed to ensure control of risk at the different life cy-cle stages of the substances (including preparations or articles at the end of service life)	
Release to environment is controlled by employing standard practices such as reducing emission to air, good housekeeping and discharging to waste water treatment. Waste resulting from manufacturing should be collected and reused/recycled if possible.	
8. Prediction of exposure resulting from the conditions described above	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. Predicted exposures are not expected to exceed the applicable exposure limits (DNEL as provided above) when the operational conditions/risk management measures described above are implemented	
9. Guidance to DU to evaluate whether he works inside the boundaries set by the ES	
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

1.	**Exposure scenario title**	**ES 2: Formulation & (re)packing of substances and mixtures**
2.	**Description of activities/process(es) covered in the Exposure Scenario**	
	SU 3 Industrial uses: Uses of substances as such or in preparations at industrial sites SU10 Formulation [mixing] of preparation and/ore re-packaging (excluding alloys) PROC 5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC 8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC 8b 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) ERC 2 Formulation of preparations	
3.	**Operational conditions**	
3.1	Duration of use for which the ES ensures control of risk	Duration of use: 8 h/day (all PROCs)
3.2	Frequency of use for which the ES ensures control of risk	Not restricted
4.	**Substance properties and use parameters**	
4.1	Physical form of product in which the substance is contained	Solid
4.1a	Surface area per amount of article containing the substance	Not applicable
4.2	Concentration of substance in use	100%
4.3	Amount used per time or per activity for which the RMMs, in combination with other operational conditions of use ensure control of risk	Not specified
5.	**Other operational conditions determining exposure**	
	Room volume	not restricted
	Ventilation rate:	not specified
	Temperature:	not restricted
	Water flow rate:	not limited
	Other operational conditions:	none
6.	**Risk Management Measures that, in combination with the operational conditions of use, ensure control of risk related to the different target groups**	
6.1.1	Occupational measures	Wearing of chemically resistant gloves (tested to EN374) required, effectiveness 90% (PROC5, 8a) required, effectiveness 80% (PROC 8b & 9) Respiratory protection tested to EN140/143 with Type P1 filter or better: required, effectiveness 80% (all PROCs)
6.1.2	Consumer related measures:	Not applicable for this Exposure Scenario
6.2	Environment related measures	Not applicable as substance is not hazardous to the environment
7.	**Waste related measures needed to ensure control of risk at the different life cy-cle stages of the substances (including preparations or articles at the end of service life)**	
	Release to environment is controlled by employing standard practices such as reducing emission to air, good housekeeping and discharging to waste water treatment. Waste resulting from manufacturing should be collected and reused/recycled if possible.	
8.	**Prediction of exposure resulting from the conditions described above**	
	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. Predicted exposures are not expected to exceed the applicable exposure limits (DNEL as provided above) when the operational conditions/risk management measures described above are implemented	
9.	**Guidance to DU to evaluate whether he works inside the boundaries set by the ES**	
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

1.	**Exposure scenario title**	**ES 3: Uses in Construction application –Professional**
2.	**Description of activities/process(es) covered in the Exposure Scenario**	
	SU 22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen) PROC 8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC 8b 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) 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	
3.	**Operational conditions**	
3.1	Duration of use for which the ES ensures control of risk	Duration of use: 8 h/day (all PROCs)
3.2	Frequency of use for which the ES ensures control of risk	Not restricted
4.	**Substance properties and use parameters**	
4.1	Physical form of product in which the substance is contained	Solid
4.1a	Surface area per amount of article containing the substance	Not applicable
4.2	Concentration of substance in use	100%
4.3	Amount used per time or per activity for which the RMMs, in combination with other operational conditions of use ensure control of risk	Not specified
5.	**Other operational conditions determining exposure**	
	Room volume	not restricted
	Ventilation rate:	not specified
	Temperature:	not restricted
	Water flow rate:	not limited
	Other operational conditions:	none
6.	**Risk Management Measures that, in combination with the operational conditions of use, ensure control of risk related to the different target groups**	
6.1.1	Occupational measures	Wearing of chemically resistant gloves (tested to EN374) required, effectiveness 90% (PROC 8a) required, effectiveness 80% (PROC 8b & 9) Respiratory protection tested to EN140/143 with Type P1 filter or better: required, effectiveness 80% (all PROCs)
6.1.2	Consumer related measures:	Not applicable for this Exposure Scenario
6.2	Environment related measures	Not applicable as substance is not hazardous to the environment
7.	**Waste related measures needed to ensure control of risk at the different life cy-cle stages of the substances (including preparations or articles at the end of service life)**	
	Release to environment is controlled by employing standard practices such as reducing emission to air, good housekeeping and discharging to waste water treatment. Waste resulting from manufacturing should be collected and reused/recycled if possible.	
8.	**Prediction of exposure resulting from the conditions described above**	
	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. Predicted exposures are not expected to exceed the applicable exposure limits (DNEL as provided above) when the operational conditions/risk management measures described above are implemented	
9.	**Guidance to DU to evaluate whether he works inside the boundaries set by the ES**	
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

1.	**Exposure scenario title**	**ES 4: Uses in Construction application – Consumer**
2.	**Description of activities/process(es) covered in the Exposure Scenario**	
	SU 21 Consumer uses: Private households AC 4: Stone, plaster, cement, glass and ceramic articles ERC 10a: Wide dispersive outdoor use of long-life articles and materials with low release ERC 11a: Wide dispersive indoor use of long-life articles and materials with low release	
3.	**Operational conditions**	
3.1	Duration of use for which the ES ensures control of risk	Duration of use: 1 h/day
3.2	Frequency of use for which the ES ensures control of risk	Frequency of use: 2 events / year
4.	**Substance properties and use parameters**	
4.1	Physical form of product in which the substance is contained	Solid
4.1a	Surface area per amount of article containing the substance	Not applicable
4.2	Concentration of substance in use	1%
4.3	Amount used per time or per activity for which the RMMs, in combination with other operational conditions of use ensure control of risk	130 g / event
5.	**Other operational conditions determining exposure**	
	Room volume	20 m^3
	Inhalation rate:	1.37 m^3 / hour
	Temperature:	Unless otherwise stated assumes use at ambient temperatures
	Contact area:	1000 cm^3
	Other operational conditions:	Covers use under typical household ventilation.
6.	**Risk Management Measures that, in combination with the operational conditions of use, ensure control of risk related to the different target groups**	
6.1.1	Occupational measures	Not applicable for this Exposure Scenario
6.1.2	Consumer related measures:	Unless otherwise stated, covers concentrations up to 1%; covers use up to 4 events / year; covers use up to 1 time/on day of use; covers skin contact area up to 1000 cm^2 for each use event, covers use amounts up to 130g; covers use in room size of 20m^3; for each use event, covers exposure up to 2hr/event
6.2	Environment related measures	Not applicable as substance is not hazardous to the environment
7.	**Waste related measures needed to ensure control of risk at the different life cy-cle stages of the substances (including preparations or articles at the end of service life)**	
	Release to environment is controlled by employing standard practices such as reducing emission to air, good housekeeping and discharging to waste water treatment. Waste resulting from manufacturing should be collected and reused/recycled if possible.	
8.	**Prediction of exposure resulting from the conditions described above**	
	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. Predicted exposures are not expected to exceed the applicable exposure limits (DNEL as provided above) when the operational conditions/risk management measures described above are implemented	
9.	**Guidance to DU to evaluate whether he works inside the boundaries set by the ES**	
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

1.	**Exposure scenario title**	**ES5: Uses in Ceramics application –Professional**
2.	**Description of activities/process(es) covered in the Exposure Scenario**	
	SU 22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen) PROC 8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC 8b 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) 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	
3.	**Operational conditions**	
3.1	Duration of use for which the ES ensures control of risk	Duration of use: 8 h/day (all PROCs)
3.2	Frequency of use for which the ES ensures control of risk	Not restricted
4.	**Substance properties and use parameters**	
4.1	Physical form of product in which the substance is contained	Solid
4.1a	Surface area per amount of article containing the substance	Not applicable
4.2	Concentration of substance in use	100%
4.3	Amount used per time or per activity for which the RMMs, in combination with other operational conditions of use ensure control of risk	Not specified
5.	**Other operational conditions determining exposure**	
	Room volume	not restricted
	Ventilation rate:	not specified
	Temperature:	not restricted
	Water flow rate:	not limited
	Other operational conditions:	none
6.	**Risk Management Measures that, in combination with the operational conditions of use, ensure control of risk related to the different target groups**	
6.1.1	Occupational measures	Wearing of chemically resistant gloves (tested to EN374) required, effectiveness 90% (PROC 8a) required, effectiveness 80% (PROC 8b & 9) Respiratory protection tested to EN140/143 with Type P1 filter or better: required, effectiveness 80% (all PROCs)
6.1.2	Consumer related measures:	Not applicable for this Exposure Scenario
6.2	Environment related measures	Not applicable as substance is not hazardous to the environment
7.	**Waste related measures needed to ensure control of risk at the different life cy-cle stages of the substances (including preparations or articles at the end of service life)**	
	Release to environment is controlled by employing standard practices such as reducing emission to air, good housekeeping and discharging to waste water treatment. Waste resulting from manufacturing should be collected and reused/recycled if possible.	
8.	**Prediction of exposure resulting from the conditions described above**	
	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. Predicted exposures are not expected to exceed the applicable exposure limits (DNEL as provided above) when the operational conditions/risk management measures described above are implemented	
9.	**Guidance to DU to evaluate whether he works inside the boundaries set by the ES**	
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

1.	**Exposure scenario title**	**ES6: Uses in Ceramics application – Consumer**
2.	**Description of activities/process(es) covered in the Exposure Scenario**	
	SU 21 Consumer uses: Private households AC4 Stone, plaster, cement, glass and ceramic articles 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	
3.	**Operational conditions**	
3.1	Duration of use for which the ES ensures control of risk	Duration of use: 1 h/day
3.2	Frequency of use for which the ES ensures control of risk	Frequency of use: 3 events / year
4.	**Substance properties and use parameters**	
4.1	Physical form of product in which the substance is contained	Solid
4.1a	Surface area per amount of article containing the substance (if applicable)	Not applicable
4.2	Concentration of substance in use	1%
4.3	Amount used per time or per activity for which the RMMs, in combination with other operational conditions of use ensure control of risk (if applicable)	1350 g / event
5.	**Other operational conditions determining exposure**	
	Room volume	20 m^3
	Inhalation rate:	1.37 m^3 / hour
	Temperature:	Unless otherwise stated assumes use at ambient temperatures
	Contact area:	1000 cm^3
	Other operational conditions:	Assumes use with typical ventilation.
6.	**Risk Management Measures that, in combination with the operational conditions of use, ensure control of risk related to the different target groups**	
6.1.1	Occupational measures	Not applicable for this Exposure Scenario
6.1.2	Consumer related measures:	Unless otherwise stated, covers concentrations up to 1%; covers use up to 3 events/year; covers use up to 1 time/on day of use; covers skin contact area up to 1000 cm2; for each use event, covers use amounts up to 1350g; covers use in room size of 20m3; for each use event, covers exposure up to 2hr/event.
6.2	Environment related measures	Not applicable as substance is not hazardous to the environment
7.	**Waste related measures needed to ensure control of risk at the different life cy-cle stages of the substances (including preparations or articles at the end of service life)**	
	Release to environment is controlled by employing standard practices such as reducing emission to air, good housekeeping and discharging to waste water treatment. Waste resulting from manufacturing should be collected and reused/recycled if possible.	
8.	**Prediction of exposure resulting from the conditions described above**	
	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. Predicted exposures are not expected to exceed the applicable exposure limits (DNEL as provided above) when the operational conditions/risk management measures described above are implemented	
9.	**Guidance to DU to evaluate whether he works inside the boundaries set by the ES**	
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

Appendix: Abbreviations used in this exposure scenario documen

AC	Article category
DNEL	Derived no effect level
DU	Downstream user
ECETOC TRA	Targeted Risk Assessment Tool provided by ECETOC (European Centre for Ecotoxicology and Toxicology of Chemicals)
ERC	Environmental release category
ES	Exposure scenario
OC	Operational conditions
PC	Product category
PEC	Predicted environmental concentration
PNEC	Predicted no effect concentration
PROC	Process category
RMM	Risk management measures
SU	Sector of use