CITRIC ACID LAFFORT

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Issue date: 11.07.2017 Revision date: 18.07.2023 Supersedes version of: 14.12.2020 Version: 3.2

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

1.1. Product identifier

Product form	:	Substance
Trade name	:	CITRIC ACID LAFFORT
Chemical name	:	Citric acid monohydrate
EC-No.	:	201-069-1
CAS-No.	:	5949-29-1
REACH registration No.	:	01-2119457026-42
C&L notification reference no	:	02-2119773813-30-0000
Type of product	:	Acids
Formula	:	C6H10O8
Product group	:	Trade product

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

1.2.1. Relevant identified uses

Main use category	:	Professional use
Industrial/Professional use spec	:	For professional users only
Use of the substance/mixture	:	Iron-complexing agent to be used against iron casse. Used in the acid balancing of wine.
Use of the substance/mixture	:	For œnological use

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier
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1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
Australia	NSW Poisons Information Centre The Children's Hospital at Westmead	Locked Bag 4001 NSW 2145	13 11 26	
Canada	Ontario Poison Centre (OPC)	The Hospital for Sick Children 555 University Avenue ON M5G 1X8 Toronto	1-800-268-9017 (416) 813-5900	
Canada	BC Drug and Poison Information Centre (DPIC)	655 West 12th Avenue BC V5Z 4R4 Vancouver	1-800-567-8911 (604) 682-5050	
China	National Poison Control Center	Chinese Center for Disease Control and Prevention Nanwei road, No.29 100050 Beijing	+86 10 831 32 046	
Croatia	Centar za kontrolu otrovanja Institut za medicinska istraživanja i medicinu rada	Ksaverska Cesta 2 p.p. 291 10000 Zagreb	+385 1 234 8342	Information available 24/7 in Croatian and English
Czech Republic	Toxikologické informační středisko Klinika pracovního lékařství VFN a 1. LF UK	Na Bojišti 1 120 00 Praha 2	+420 224 919 293 +420 224 915 402	
Denmark	Giftlinjen	Bispebjerg Bakke 23 Opgang 20 C 2400 København NV	+45 82 12 12 12	
Georgia	National Toxicology Information Advisory Center	Tbilisi State Medical University Department of Toxicology - 7 Asatiani St. 380 077 Tbilisi	+995 99 533320	
Greece	Poisons Information Centre Children's Hospital P&A Kyriakou	11762 Athens	+30 2 10 779 3777	
Hungary	Országos Kémiai Biztonsági Intézet Egészségügyi Toxikológiai Tájékoztató Szolgálat	Nagyvárad tér 2. 1437 Budapest, Pf. 839 1097 Budapest	+36 80 20 11 99	
Israel	Israel Poison Information Center Rambam Health Care Campus	6 Ha'Aliya Street 31096	+972 4 854 1900	
Japan	Japan Poison Information Center	Tsukuba Medical Center 1-1-1 Amakubo 305-0005 Tsukuba City, Ibaraki	+81-29-856-3566 +81-72-727-2499	
Jordan	National Drug & Poison Information Center of Jordan		0798506755 00962-6-5353444	
Kazakhstan	Republican Toxicology Center	Tole-bi 93 480083 Almaty	+7 3272 925 868	
Malta	Medicines & Poisons Info Office	Mater Dei Hospital MSD Msida	+356 2545 6504	
New Zealand	National Poisons Centre	Dunedin School of Medicine, University of Otago PO Box 913 9054 Dunedin	0800 764 766 +56 2 2 247 3600	
Poland	National Poisons Information Centre The Nofer Institute of Occupational Medicine (Łódź)	ul. Teresy 8 P.O. BOX 199 90950 Łódź	+48 42 63 14 724	

Country	Organisation/Company	Address	Emergency number	Comment
Romania	Department of Clinical Toxicology Spitalul de Urgenta Floreasca	Calea Floreasca Bucuresti	+40 21 230 8000	
Russia	Информационно-консультативный центр по токсикология (RTIAC) Министерство здравоохранения Российской Федерации	3 Сухаревская Площадь Блок 7 129090 г. Москва	+7 495 628 1687 (только на русском)	
Serbia	Nacionalni centar za kontrolu trovanja - VMA	Crnotravska 17 11000 Beograd	+381 11 360 84 40	
Slovenia	Center za klinično toksikologijo in farmakologijo Interna klinika, UKCL	Zaloška 7 1000 Ljubljana	+386 522 52 83	
South Africa	Tygerberg Poison Information Centre	Division of Clinical Pharmacology Faculty of Medicine and Heath Sciences Stellenbosch University - PO Box 241 8 000 Cape Town	0861 555 777 +56 2 2 247 3600	
Sweden	Giftinformationscentralen	Solna Strandväg 21 171 54 Solna	112 – begär Giftinformation	
Turkey	Ulusal Zehir Merkezi (UZEM) Refik Saydam Hıfzısıhha Merkezi Başkanlığı	Cemal Gürsel Cd. No: 18 Sıhhiye Çankaya 06590 Ankara	114	Information is provided to public and medical personnel on poisoning incidents via 114.
United Kingdom	National Poisons Information Service (Belfast Centre) Royal Victoria Hospital	Grosvenor Road BT12 6BA	0344 892 0111	Only for healthcare professionals
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH	0344 892 0111	Only for healthcare professionals
United Kingdom	National Poisons Information Service (Cardiff Centre) University Hospital Llandough	Penlan Road CF64 2XX	0344 892 0111	Only for healthcare professionals
United Kingdom	National Poisons Information Service (Edinburgh Centre) Royal Infirmary of Edinburgh	Little France Crescent EH16 4SA	0344 892 0111	Only for healthcare professionals
United Kingdom	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER	+44 20 7188 7188	
United Kingdom	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre	16/17 Framlington Place Newcastle-upon-Tyne NE2 4AB	0344 892 0111	Only for healthcare professionals
United States of America	American Association of Poison Control Centers	515 King St., Suite 510 VA 22314 Alexandria	1-800-222-1222 +56 2 2 247 3600	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Serious eye damage/eye irritation, Category 2 H319

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

Causes serious eye irritation.

2.2. Label elements

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

Hazard pictograms (CLP) :



GHS07

Signal word (CLP) : Warning

Hazard statements (CLP) : H319 - Causes serious eye irritation.

Precautionary statements (CLP) : P264 - Wash hands thoroughly after handling.
P280 - Wear protective gloves, protective clothing, eye protection, face protection.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 - If eye irritation persists: Get medical advice/attention.

2.3. Other hazards

Contains no PBT/vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name : Citric_Acid_Laffort

CAS-No. : 5949-29-1

EC-No. : 201-069-1

Name	Product identifier	%
Citric acid monohydrate - E330	CAS-No.: 5949-29-1 EC-No.: 201-069-1 REACH-no: 01-2119457026-42	100

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : If symptoms persist call a doctor.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. If symptoms persist, call a physician.

First-aid measures after skin contact : After contact with skin, wash immediately and thoroughly with water and soap. If symptoms persist, call a physician. Wash skin with plenty of water.

First-aid measures after eye contact	:	In case of eye contact, immediately rinse with clean water for 10-15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Rinse cautiously with water for several minutes.
First-aid measures after ingestion	:	If swallowed, rinse mouth with water (only if the person is conscious). Never give anything by mouth to an unconscious person. Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects	:	More detailed information: See section 11.
Symptoms/effects after inhalation	:	Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure.
Symptoms/effects after skin contact	:	None under normal conditions.
Symptoms/effects after eye contact	:	Eye irritation. Serious damage to eyes.
Symptoms/effects after ingestion	:	Gastrointestinal complaints.

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	:	If there is a fire close by, use suitable extinguishing agents. carbon dioxide (CO2), powder, alcohol-resistant foam, water spray. Water spray. Dry powder. Foam.
Unsuitable extinguishing media	:	Do not use water jet.

5.2. Special hazards arising from the substance or mixture

Fire hazard	:	In case of fire and/or explosion do not breathe fumes.
Reactivity in case of fire	:	Not classified as flammable by EC criteria.
Hazardous decomposition products in case of fire	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Hazardous decomposition products may be released during prolonged heating like smokes, carbon monoxide and dioxide.

5.3. Advice for firefighters

Firefighting instructions	:	Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting	:	Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
Other information	:	Do not contaminate ground and surface water. Dispose in a safe manner in accordance with local/national regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	:	Do not handle until all safety precautions have been read and understood. Evacuate personnel to a safe area.

6.1.1. For non-emergency personnel

Protective equipment	:	Wear personal protective equipment.
Emergency procedures	:	Ventilate spillage area. Do not touch or walk on the spilled product. Avoid contact with skin and eyes.
Measures in case of dust release	:	Avoid dust formation.

6.1.2. For emergency responders

Protective equipment	:	Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment. Do not flush into surface water or sewer system. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Mechanically recover the product. Contain leaking substance, pump over in suitable containers. Clean contaminated surfaces with an excess of water.

Other information : Dispose of materials or solid residues at an authorized site. Do not allow to enter drains or water courses.

6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8. For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid dust formation. Ensure good ventilation of the work station. Local exhaust is recommended where dust may occur. Avoid contact with skin and eyes. Wear recommended personal protective equipment. Store tightly closed in a dry and cool place. Wear personal protective equipment.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Keep only in the original container.

Storage conditions : Keep in a well-ventilated room. Keep container tightly closed to prevent moisture pick-up. Store in a dry, cool place. Keep out of direct sunlight. Store in a well-ventilated place. Keep cool.

Incompatible products : Oxidizing agents, bases and reducing agents.

Heat and ignition sources : Keep away from ignition sources (including static discharges).

7.3. Specific end use(s)

For œnological use.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

No additional information available

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

CITRIC ACID LAFFORT (5949-29-1)	
PNEC (Water)	
PNEC aqua (freshwater)	≈ 0,44 mg/l
PNEC aqua (marine water)	≈ 0,044 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	≈ 34,6 mg/kg dwt

CITRIC ACID LAFFORT (5949-29-1)	
PNEC sediment (marine water)	≈ 3,46 mg/kg dwt
PNEC (Soil)	
PNEC soil	≈ 33,1 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	> 1000 mg/l

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:
Ensure good ventilation of the work station. Avoid dust formation. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure the ventilation system is regularly maintained and tested.

8.2.2. Personal protection equipment

Personal protective equipment:
Refer to protective measures listed in Sections 7 and 8.

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:
Use eye protection according to EN 166, designed to protect against powders and dusts. Safety glasses with side shields. Safety glasses

Eye protection			
Type	**Field of application**	**Characteristics**	**Standard**
Safety glasses	Dust	With side shields	EN 166

8.2.2.2. Skin protection

Skin and body protection:
Wear suitable protective clothing

Skin and body protection	
Type	**Standard**
Chemically resistant protective gloves	EN 374

Hand protection:
Please follow the instructions related to the permeability and the penetration time provided by the manufacturer. Gloves must be replaced after each use and whenever signs of wear or perforation appear. Protective gloves. ISO 374-1

Hand protection					
Type	**Material**	**Permeation**	**Thickness (mm)**	**Penetration**	**Standard**
Chemically resistant protective gloves	Natural rubber	6 (> 480 minutes)	0.5		EN ISO 374

Hand protection					
Type	**Material**	**Permeation**	**Thickness (mm)**	**Penetration**	**Standard**
Chemically resistant protective gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	0.35		EN ISO 374
Chemically resistant protective gloves	Butyl rubber	6 (> 480 minutes)	0.5		EN ISO 374
Chemically resistant protective gloves	Polyvinylchloride (PVC)	6 (> 480 minutes)	0.5		EN ISO 374

Other skin protection

Materials for protective clothing:

Wear suitable protective clothing. Long sleeved protective clothing. acid resistant clothing

8.2.2.3. Respiratory protection

Respiratory protection:

No special protection required where adequate ventilation is maintained. Wear suitable respiratory equipment in case of insufficient ventilation. EN 143. EN 149

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Do not allow into drains or water courses. Avoid release to the environment.

Other information:

Do not eat, drink or smoke during work. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Colour	:	white.
Appearance	:	Crystals.
Odour	:	odourless.
Odour threshold	:	Not available
Melting point	:	≈ 153 °C 1.013 hPa
Freezing point	:	Not applicable
Boiling point	:	Not available
Flammability	:	Non flammable.
Explosive limits	:	Not applicable
Lower explosion limit	:	Not applicable
Upper explosion limit	:	Not applicable
Flash point	:	Not applicable
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	> 100 °C
pH	:	Not available
pH solution	:	≈ 1,7 100g/L - 20°C
Viscosity, kinematic	:	Not applicable
Solubility	:	Soluble in ethanol. Water: ≈ 590 g/l 20°C
Partition coefficient n-octanol/water (Log Kow)	:	-0,2 – -1,8 20°C
Vapour pressure	:	Not available
Vapour pressure at 50°C	:	Not available
Density	:	≈ 1,665 g/cm³ 20°C

Relative density	:	Not available
Relative vapour density at 20°C	:	Not applicable
Particle size	:	Not available
Particle size distribution	:	Not available
Particle shape	:	Not available
Particle aspect ratio	:	Not available
Particle aggregation state	:	Not available
Particle agglomeration state	:	Not available
Particle specific surface area	:	Not available
Particle dustiness	:	Not available

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Exothermic reaction on contact with : Oxidizing agents, bases and reducing agents. on contact with reactive metals (Al, K, Zn ...).

10.4. Conditions to avoid

Heat. flames or sparks. Moisture.

10.5. Incompatible materials

Oxidizing agent. Strong bases.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal decomposition generates : See Section 5.

SECTION 11: Toxicological information

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

Acute toxicity (oral)	:	Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal)	:	Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation)	:	Not classified (Based on available data, the classification criteria are not met)

Citric acid monohydrate - E330 (5949-29-1)	
LD50 oral rat	≈ 5400 mg/kg bodyweight
LD50 dermal	> 2000 mg/kg bodyweight

Skin corrosion/irritation	:	Slightly irritant but not relevant for classification (Based on available data, the classification criteria are not met)
Serious eye damage/irritation	:	Severe eye irritation
Additional information	:	Causes serious eye damage.

Respiratory or skin sensitisation	:	Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	:	Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	:	Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	:	Not classified (Based on available data, the classification criteria are not met)
STOT-single exposure	:	Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure	:	Not classified (Based on available data, the classification criteria are not met)
Aspiration hazard	:	Not classified (Based on available data, the classification criteria are not met)

CITRIC ACID LAFFORT (5949-29-1)	
Viscosity, kinematic	Not applicable

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	:	The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short–term (acute)	:	Not classified (Based on available data, the classification criteria are not met)
Hazardous to the aquatic environment, long–term (chronic)	:	Not classified (Based on available data, the classification criteria are not met)

Citric acid monohydrate - E330 (5949-29-1)	
LC50 - Fish [1]	440 mg/l 48h
EC50 - Crustacea [1]	1535 mg/l 24h
NOEC (acute)	425 mg/l 8 days

12.2. Persistence and degradability

Citric acid monohydrate - E330 (5949-29-1)	
Persistence and degradability	Biodegradable.

12.3. Bioaccumulative potential

CITRIC ACID LAFFORT (5949-29-1)	
Partition coefficient n-octanol/water (Log Kow)	-0,2 – -1,8 20°C

Citric acid monohydrate - E330 (5949-29-1)	
Partition coefficient n-octanol/water (Log Pow)	-0,2 – -1,8 20°C
Partition coefficient n-octanol/water (Log Kow)	≈ -1,7 20°C
Bioaccumulative potential	There is no bioaccumulation.

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

Other adverse effects : No other effects known,Do not allow to enter drains or water courses

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations : Do not flush into surface water or sewer system.
Product/Packaging disposal recommendations : Empty remaining contents. Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

14.1. UN number or ID number

UN-No. (ADR) : Not regulated
UN-No. (IMDG) : Not regulated
UN-No. (IATA) : Not regulated
UN-No. (ADN) : Not regulated
UN-No. (RID) : Not regulated

14.2. UN proper shipping name

Proper Shipping Name (ADR) : Not regulated
Proper Shipping Name (IMDG) : Not regulated
Proper Shipping Name (IATA) : Not regulated
Proper Shipping Name (ADN) : Not regulated
Proper Shipping Name (RID) : Not regulated

14.3. Transport hazard class(es)

ADR
Transport hazard class(es) (ADR) : Not regulated

IMDG
Transport hazard class(es) (IMDG) : Not regulated

IATA
Transport hazard class(es) (IATA) : Not regulated

ADN
Transport hazard class(es) (ADN) : Not regulated

RID
Transport hazard class(es) (RID) : Not regulated

14.4. Packing group

Packing group (ADR) : Not regulated
Packing group (IMDG) : Not regulated
Packing group (IATA) : Not regulated
Packing group (ADN) : Not regulated

Packing group (RID) : Not regulated

14.5. Environmental hazards

Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user

Overland transport
Not regulated

Transport by sea
Not regulated

Air transport
Not regulated

Inland waterway transport
Not regulated

Rail transport
Not regulated

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Not listed on REACH Annex XVII
Not listed on the REACH Candidate List
Not listed on REACH Annex XIV (Authorisation List)
Not listed on the PIC list (Regulation EU 649/2012)
Not listed on the POP list (Regulation EU 2019/1021)
Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

15.1.2. National regulations

Germany
Water hazard class (WGK) : WGK 1, Slightly hazardous to water (Classification according to AwSV; ID No. 57)
Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

Netherlands
SZW-lijst van kankerverwekkende stoffen : The substance is not listed
SZW-lijst van mutagene stoffen : The substance is not listed
SZW-lijst van reprotoxische stoffen – Borstvoeding : The substance is not listed
SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : The substance is not listed
SZW-lijst van reprotoxische stoffen – Ontwikkeling : The substance is not listed

15.2. Chemical safety assessment

A chemical safety assessment has been carried out
No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes:

Revision - See : *.

Indication of changes			
Section	**Changed item**	**Change**	**Comments**
1.2	Restrictions on use	Modified	
1.2	Function or use category	Removed	
1.2	Use of the substance/mixture	Added	
1.2	Use of the substance/mixture	Modified	
4.2	Symptoms/effects after inhalation	Added	
4.2	Symptoms/effects after skin contact	Added	
4.2	Symptoms/effects after ingestion	Added	
5.1	Suitable extinguishing media	Added	
5.2	Reactivity in case of fire	Added	
5.2	Hazardous decomposition products in case of fire	Modified	
5.3	Firefighting instructions	Added	
6.1	Emergency procedures	Added	
6.1	General measures	Added	
6.2	Environmental precautions	Added	
6.3	Other information	Added	
7.1	Precautions for safe handling	Added	
7.1	Hygiene measures	Added	
7.2	Storage conditions	Added	
7.2	Heat and ignition sources	Added	
7.3	Specific end uses	Added	
8.2	Respiratory protection	Modified	
8.2	Appropriate engineering controls	Added	
10.6	Hazardous decomposition products	Modified	
11.1	Reason for no classification	Added	
12.	Reason for no classification	Added	
12.6	Other adverse effects	Added	

Abbreviations and acronyms:	
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
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value

Abbreviations and acronyms:	
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

Full text of H- and EUH-statements:	
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H319	Causes serious eye irritation.

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.

Annex to the safety data sheet

Identified Uses	Es N°	Short title	Page
Use of citric acid as an intermediate.	1		**16**
Use of citric acid formulation into preparations/mixtures.	2		**19**
Use of citric acid in personal care products.	3		**22**
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Use of citric acid in paper industry.	5		**28**
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Use of citric acid in polymers and plastics.	7		**33**
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1. SE1 - Industrial; Use of citric acid as an intermediate.

1.1. Title section

Use of citric acid as an intermediate.	
ES Ref.: SE1 ES Type: Worker	Association ref code: Utilisation de l'acide citrique comme intermédiaire.

Environment		Use descriptors
	Contributing scenario controlling environmental exposure	ERC8a

Worker		Use descriptors
	Contributing scenario controlling worker exposure	PROC1, PROC2, PROC4, PROC8b

Assessment method	Management/supervision in place to check that RMMs on place are being used correctly and OCs followed Training staff on good practice Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure.

1.2. Conditions of use affecting exposure

1.2.1. Control of environmental exposure: Contributing scenario controlling environmental exposure (ERC8a)

ERC8a	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)

Product (article) characteristics	
Physical form of product	Liquid, Acids
Other product characteristics	Readily biodegradable, Partition coefficient n-octanol/water [log Kow], faint, Bioaccumulation unlikely

Technical and organisational conditions and measures	
Prevent liquid from entering sewers, watercourses, and soil.	
Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams	
Neutralize collected waste before discharge. Must undergo physico-chemical treatment prior to destruction	
Comply with local regulations for disposal	

1.2.2. Control of worker exposure: Contributing scenario controlling worker exposure (PROC1, PROC2, PROC4, PROC8b)

PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC4	Chemical production where opportunity for exposure arises
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities.

Product (article) characteristics	
Physical form of product	Liquid, Acids
Concentration of substance in product	User defined
Other product characteristics	Service life, User defined

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

Technical and organisational conditions and measures		
Handle all packages and containers carefully to minimise spills		
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure		
Ensure good ventilation of the work station		
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop		
Always wash your hands immediately after handling this product, and once again before leaving the workplace		
Training staff on good practice		
Regular cleaning of equipment and work area		
Use good personal hygiene practices		
Handle in accordance with good industrial hygiene and safety procedures		
Use special care to avoid static electric charges	Potential dust explosion hazard	
Provide adequate general and local exhaust ventilation.	Slight irritant by inhalation	

Conditions and measures related to personal protection, hygiene and health evaluation	
Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles	Causes serious eye irritation.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training	
By prolonged exposure : In case of insufficient ventilation, wear suitable respiratory equipment	Slight irritant by inhalation

1.3. Exposure estimation and reference to its source

Information for this exposure scenario:

As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed

1.3.1. Environmental release and exposure Contributing scenario controlling environmental exposure (ERC8a)

No information available

1.3.2. Worker exposure Contributing scenario controlling worker exposure (PROC1, PROC2, PROC4, PROC8b)

Information for contributing exposure scenario
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted

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

1.4.1. Environment

No data available

1.4.2. Health

No data available

2. SE2 - Industrial, Manufacture, Formulation; Use of citric acid formulation into preparations/mixtures.

2.1. Title section

Use of citric acid formulation into preparations/mixtures.	
ES Ref.: SE2 ES Type: Worker	Association ref code: Utilisation de la formulation d'acide citrique dans les préparations/ mélanges.

Environment		Use descriptors
	Contributing scenario controlling environmental exposure	ERC1, ERC2, ERC3, ERC4

Worker		Use descriptors
	Contributing scenario controlling worker exposure	PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC13, PROC14, PROC15, PROC19

Assessment method	Management/supervision in place to check that RMMs on place are being used correctly and OCs followed Training staff on good practice Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure.

2.2. Conditions of use affecting exposure

2.2.1. Control of environmental exposure: Contributing scenario controlling environmental exposure (ERC1, ERC2, ERC3, ERC4)

ERC1	Manufacture of the substance
ERC2	Formulation into mixture
ERC3	Formulation into solid matrix
ERC4	Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

Product (article) characteristics	
Physical form of product	Liquid, Acids
Other product characteristics	Readily biodegradable, Partition coefficient n-octanol/water [log Kow], faint, Bioaccumulation unlikely

Technical and organisational conditions and measures	
Prevent liquid from entering sewers, watercourses, and soil.	
Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams	
Neutralize collected waste before discharge. Must undergo physico-chemical treatment prior to destruction	
Comply with local regulations for disposal	

2.2.2. Control of worker exposure: Contributing scenario controlling worker exposure (PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC13, PROC14, PROC15, PROC19)

PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC3	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
PROC4	Chemical production where opportunity for exposure arises
PROC5	Mixing or blending in batch processes
PROC7	Industrial spraying
PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities.
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities.
PROC9	Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC13	Treatment of articles by dipping and pouring
PROC14	Production of preparations or articles by tabletting, compression, extrusion, pelletisation
PROC15	Use as laboratory reagent
PROC19	Manual activities involving hand contact

Product (article) characteristics	
Physical form of product	Acids, Solid or liquid
Concentration of substance in product	User defined
Other product characteristics	Service life, User defined

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

Technical and organisational conditions and measures		
Handle all packages and containers carefully to minimise spills		
Professional use. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure		
Ensure good ventilation of the work station		
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop		
Always wash your hands immediately after handling this product, and once again before leaving the workplace		
Training staff on good practice		
Regular cleaning of equipment and work area		
Use good personal hygiene practices		
Handle in accordance with good industrial hygiene and safety procedures		
Use special care to avoid static electric charges	Potential dust explosion hazard	
Provide adequate general and local exhaust ventilation.	Slight irritant by inhalation	

Conditions and measures related to personal protection, hygiene and health evaluation	
Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles	Causes serious eye irritation.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training	
By prolonged exposure : In case of insufficient ventilation, wear suitable respiratory equipment	Slight irritant by inhalation

2.3. Exposure estimation and reference to its source

Information for this exposure scenario:
As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed

2.3.1. Environmental release and exposure Contributing scenario controlling environmental exposure (ERC1, ERC2, ERC3, ERC4)

No information available

2.3.2. Worker exposure Contributing scenario controlling worker exposure (PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC13, PROC14, PROC15, PROC19)

Information for contributing exposure scenario
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted

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

2.4.1. Environment

No data available

2.4.2. Health

No data available

3. SE3 - Industrial, Professional, Consumer; Use of citric acid in personal care products.

3.1. Title section

Use of citric acid in personal care products.	
ES Ref.: SE3 ES Type: Worker	Association ref code: Utilisation de l'acide citrique dans les produits de soins personnels.

Environment		Use descriptors
	Contributing scenario controlling environmental exposure	ERC1, ERC2, ERC3, ERC4

Worker		Use descriptors
	Contributing scenario controlling worker exposure	PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC13, PROC14, PROC15, PROC19

Assessment method	Management/supervision in place to check that RMMs on place are being used correctly and OCs followed Training staff on good practice Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure.

3.2. Conditions of use affecting exposure

3.2.1. Control of environmental exposure: Contributing scenario controlling environmental exposure (ERC1, ERC2, ERC3, ERC4)

ERC1	Manufacture of the substance
ERC2	Formulation into mixture
ERC3	Formulation into solid matrix
ERC4	Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

Product (article) characteristics	
Physical form of product	Liquid, Acids
Other product characteristics	Readily biodegradable, Partition coefficient n-octanol/water [log Kow], faint, Bioaccumulation unlikely

Technical and organisational conditions and measures	
Prevent liquid from entering sewers, watercourses, and soil.	
Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams	
Neutralize collected waste before discharge. Must undergo physico-chemical treatment prior to destruction	
Comply with local regulations for disposal	

3.2.2. Control of worker exposure: Contributing scenario controlling worker exposure (PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC13, PROC14, PROC15, PROC19)

PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC3	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
PROC4	Chemical production where opportunity for exposure arises
PROC5	Mixing or blending in batch processes
PROC7	Industrial spraying
PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities.
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities.
PROC9	Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC13	Treatment of articles by dipping and pouring
PROC14	Production of preparations or articles by tabletting, compression, extrusion, pelletisation
PROC15	Use as laboratory reagent
PROC19	Manual activities involving hand contact

Product (article) characteristics	
Physical form of product	Acids, Solid or liquid
Concentration of substance in product	User defined
Other product characteristics	Service life, User defined

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

Technical and organisational conditions and measures		
Handle all packages and containers carefully to minimise spills		
Professional use. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure		
Ensure good ventilation of the work station		
Use good personal hygiene practices		
Always wash your hands immediately after handling this product, and once again before leaving the workplace		
Handle in accordance with good industrial hygiene and safety procedures		

Conditions and measures related to personal protection, hygiene and health evaluation	
Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles	Causes serious eye irritation.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training	
By prolonged exposure : In case of insufficient ventilation, wear suitable respiratory equipment	Slight irritant by inhalation

3.3. Exposure estimation and reference to its source

Information for this exposure scenario:
As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed

3.3.1. Environmental release and exposure Contributing scenario controlling environmental exposure (ERC1, ERC2, ERC3, ERC4)

No information available

3.3.2. Worker exposure Contributing scenario controlling worker exposure (PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC13, PROC14, PROC15, PROC19)

Information for contributing exposure scenario
Long term exposure,Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted

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

3.4.1. Environment

No data available

3.4.2. Health

No data available

4. SE4 - Industrial, Professional, Consumer; Use of citric acid in detergents and cleaning products.

4.1. Title section

Use of citric acid in detergents and cleaning products.	
ES Ref.: SE4 ES Type: Worker	Association ref code: Utilisation de l'acide citrique dans les détergents et les produits d'entretien.

Environment		Use descriptors
	Contributing scenario controlling environmental exposure	ERC2, ERC4, ERC8a, ERC8d, ERC9a, ERC9b

Worker		Use descriptors
	Contributing scenario controlling worker exposure	PROC1, PROC2, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC19

Assessment method	Management/supervision in place to check that RMMs on place are being used correctly and OCs followed Training staff on good practice Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure.

4.2. Conditions of use affecting exposure

4.2.1. Control of environmental exposure: Contributing scenario controlling environmental exposure (ERC2, ERC4, ERC8a, ERC8d, ERC9a, ERC9b)

ERC2	Formulation into mixture
ERC4	Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
ERC8a	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
ERC8d	Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
ERC9a	Widespread use of functional fluid (indoor)
ERC9b	Widespread use of functional fluid (outdoor)

Product (article) characteristics	
Physical form of product	Liquid, Acids
Other product characteristics	Readily biodegradable, Partition coefficient n-octanol/water [log Kow], faint, Bioaccumulation unlikely

Technical and organisational conditions and measures	
Prevent liquid from entering sewers, watercourses, and soil.	
Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams	
Neutralize collected waste before discharge. Must undergo physico-chemical treatment prior to destruction	
Comply with local regulations for disposal	

4.2.2. Control of worker exposure: Contributing scenario controlling worker exposure (PROC1, PROC2, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC19)

PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC4	Chemical production where opportunity for exposure arises
PROC5	Mixing or blending in batch processes
PROC7	Industrial spraying
PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities.
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities.
PROC9	Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC10	Roller application or brushing
PROC11	Non industrial spraying
PROC13	Treatment of articles by dipping and pouring
PROC19	Manual activities involving hand contact

Product (article) characteristics	
Physical form of product	Acids, Solid or liquid
Concentration of substance in product	User defined, Formulation of preparations
Other product characteristics	Service life, User defined

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

Technical and organisational conditions and measures		
Handle all packages and containers carefully to minimise spills		
Professional use. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure		
Ensure good ventilation of the work station		
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop		
Always wash your hands immediately after handling this product, and once again before leaving the workplace		
Training staff on good practice		
Regular cleaning of equipment and work area		
Use good personal hygiene practices		
Handle in accordance with good industrial hygiene and safety procedures		

Conditions and measures related to personal protection, hygiene and health evaluation	
Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles	Causes serious eye irritation.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training	
By prolonged exposure : In case of insufficient ventilation, wear suitable respiratory equipment	Slight irritant by inhalation

4.3. Exposure estimation and reference to its source

Information for this exposure scenario:
As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed

4.3.1. Environmental release and exposure Contributing scenario controlling environmental exposure (ERC2, ERC4, ERC8a, ERC8d, ERC9a, ERC9b)

No information available

4.3.2. Worker exposure Contributing scenario controlling worker exposure (PROC1, PROC2, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC19)

Information for contributing exposure scenario
Short term exposure,Long term exposure,Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted

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

4.4.1. Environment

No data available

4.4.2. Health

No data available

5. SE5 - Industrial; Use of citric acid in paper industry.

5.1. Title section

Use of citric acid in paper industry.	
ES Ref.: SE5 ES Type: Worker	Association ref code: Utilisation de l'acide citrique dans l'industrie du papier.

Environment		Use descriptors
	Contributing scenario controlling environmental exposure	ERC4

Worker		Use descriptors
	Contributing scenario controlling worker exposure	PROC5, PROC8a

Assessment method	Management/supervision in place to check that RMMs on place are being used correctly and OCs followed Training staff on good practice Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure.

5.2. Conditions of use affecting exposure

5.2.1. Control of environmental exposure: Contributing scenario controlling environmental exposure (ERC4)

ERC4	Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

Product (article) characteristics	
Physical form of product	Liquid, Acids
Other product characteristics	Readily biodegradable, Partition coefficient n-octanol/water [log Kow], faint, Bioaccumulation unlikely

Technical and organisational conditions and measures	
Prevent liquid from entering sewers, watercourses, and soil.	
Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams	
Neutralize collected waste before discharge. Must undergo physico-chemical treatment prior to destruction	
Comply with local regulations for disposal	

5.2.2. Control of worker exposure: Contributing scenario controlling worker exposure (PROC5, PROC8a)

PROC5	Mixing or blending in batch processes
PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities.

Product (article) characteristics	
Physical form of product	Acids, Solid or liquid
Concentration of substance in product	User defined
Other product characteristics	Service life, User defined

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

Technical and organisational conditions and measures		
Handle all packages and containers carefully to minimise spills		
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure		
Ensure good ventilation of the work station		
Use good personal hygiene practices		
Always wash your hands immediately after handling this product, and once again before leaving the workplace		
Handle in accordance with good industrial hygiene and safety procedures		

Conditions and measures related to personal protection, hygiene and health evaluation	
Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles	Causes serious eye irritation.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training	
By prolonged exposure : In case of insufficient ventilation, wear suitable respiratory equipment	Slight irritant by inhalation

5.3. Exposure estimation and reference to its source

Information for this exposure scenario:
As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed

5.3.1. Environmental release and exposure Contributing scenario controlling environmental exposure (ERC4)

No information available

5.3.2. Worker exposure Contributing scenario controlling worker exposure (PROC5, PROC8a)

Information for contributing exposure scenario
Long term exposure,Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted

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

5.4.1. Environment

No data available

5.4.2. Health

No data available

6. SE6 - Industrial, Professional, Consumer; Use of citric acid in construction products.

6.1. Title section

Use of citric acid in construction products.	
ES Ref.: SE6 ES Type: Worker	Association ref code: Utilisation de l'acide citrique dans les produits de soins personnels.

Environment		Use descriptors
	Contributing scenario controlling environmental exposure	ERC5, ERC8c, ERC8f, ERC10a, ERC10b, ERC11a, ERC11b, ERC12a

Worker		Use descriptors
	Contributing scenario controlling worker exposure	PROC2, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC14, PROC19, PROC21, PROC24

Assessment method	Management/supervision in place to check that RMMs on place are being used correctly and OCs followed Training staff on good practice Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure.

6.2. Conditions of use affecting exposure

6.2.1. Control of environmental exposure: Contributing scenario controlling environmental exposure (ERC5, ERC8c, ERC8f, ERC10a, ERC10b, ERC11a, ERC11b, ERC12a)

ERC5	Use at industrial site leading to inclusion into/onto article
ERC8c	Widespread use leading to inclusion into/onto article (indoor)
ERC8f	Widespread use leading to inclusion into/onto article (outdoor)
ERC10a	Widespread use of articles with low release (outdoor)
ERC10b	Widespread use of articles with high or intended release (outdoor)
ERC11a	Widespread use of articles with low release (indoor)
ERC11b	Widespread use of articles with high or intended release (indoor)
ERC12a	Processing of articles at industrial sites with low release

Product (article) characteristics	
Physical form of product	Liquid, Acids
Other product characteristics	Readily biodegradable, Partition coefficient n-octanol/water [log Kow], faint, Bioaccumulation unlikely

Technical and organisational conditions and measures	
Prevent liquid from entering sewers, watercourses, and soil.	
Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams	
Neutralize collected waste before discharge. Must undergo physico-chemical treatment prior to destruction	
Comply with local regulations for disposal	

6.2.2. Control of worker exposure: Contributing scenario controlling worker exposure (PROC2, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC14, PROC19, PROC21, PROC24)

PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC4	Chemical production where opportunity for exposure arises
PROC5	Mixing or blending in batch processes
PROC7	Industrial spraying
PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities.
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities.
PROC10	Roller application or brushing
PROC11	Non industrial spraying
PROC13	Treatment of articles by dipping and pouring
PROC14	Production of preparations or articles by tabletting, compression, extrusion, pelletisation
PROC19	Manual activities involving hand contact
PROC21	Low energy manipulation and handling of substances bound in/on materials or articles
PROC24	High (mechanical) energy work-up of substances bound in /on materials and/or articles

Product (article) characteristics	
Physical form of product	Acids, Solid or liquid
Concentration of substance in product	User defined
Other product characteristics	Service life, User defined

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

Technical and organisational conditions and measures		
Handle all packages and containers carefully to minimise spills		
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure		
Ensure good ventilation of the work station		
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop		
Always wash your hands immediately after handling this product, and once again before leaving the workplace		
Training staff on good practice		
Regular cleaning of equipment and work area		
Use good personal hygiene practices		
Handle in accordance with good industrial hygiene and safety procedures		
Use special care to avoid static electric charges	Potential dust explosion hazard	

Technical and organisational conditions and measures		
Provide adequate general and local exhaust ventilation.	Slight irritant by inhalation	

Conditions and measures related to personal protection, hygiene and health evaluation	
Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles	Causes serious eye irritation.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training	
By prolonged exposure : In case of insufficient ventilation, wear suitable respiratory equipment	Slight irritant by inhalation

6.3. Exposure estimation and reference to its source

Information for this exposure scenario:
As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed

6.3.1. Environmental release and exposure Contributing scenario controlling environmental exposure (ERC5, ERC8c, ERC8f, ERC10a, ERC10b, ERC11a, ERC11b, ERC12a)

No information available

6.3.2. Worker exposure Contributing scenario controlling worker exposure (PROC2, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC14, PROC19, PROC21, PROC24)

Information for contributing exposure scenario
Long term exposure,Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted

6.4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

6.4.1. Environment

No data available

6.4.2. Health

No data available

7. SE7 - Industrial; Use of citric acid in polymers and plastics.

7.1. Title section

Use of citric acid in polymers and plastics.	
ES Ref.: SE7 ES Type: Worker	Association ref code: Utilisation de la formulation d'acide citrique dans les préparations/ mélanges.

Environment		Use descriptors
	Contributing scenario controlling environmental exposure	ERC6b

Worker		Use descriptors
	Contributing scenario controlling worker exposure	PROC3, PROC5, PROC8a, PROC8b

Assessment method	Management/supervision in place to check that RMMs on place are being used correctly and OCs followed Training staff on good practice Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure.

7.2. Conditions of use affecting exposure

7.2.1. Control of environmental exposure: Contributing scenario controlling environmental exposure (ERC6b)

ERC6b	Use of reactive processing aid at industrial site (no inclusion into or onto article)

Product (article) characteristics	
Physical form of product	Liquid, Acids
Other product characteristics	Readily biodegradable, Partition coefficient n-octanol/water [log Kow], faint, Bioaccumulation unlikely

Technical and organisational conditions and measures	
Prevent liquid from entering sewers, watercourses, and soil.	
Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams	
Neutralize collected waste before discharge. Must undergo physico-chemical treatment prior to destruction	
Comply with local regulations for disposal	

7.2.2. Control of worker exposure: Contributing scenario controlling worker exposure (PROC3, PROC5, PROC8a, PROC8b)

PROC3	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
PROC5	Mixing or blending in batch processes
PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities.
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities.

Product (article) characteristics	
Physical form of product	Acids, Solid or liquid

Product (article) characteristics	
Concentration of substance in product	User defined
Other product characteristics	Service life, User defined

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

Technical and organisational conditions and measures		
Handle all packages and containers carefully to minimise spills		
Professional use. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure		
Ensure good ventilation of the work station		
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop		
Always wash your hands immediately after handling this product, and once again before leaving the workplace		
Training staff on good practice		
Regular cleaning of equipment and work area		
Use good personal hygiene practices		
Handle in accordance with good industrial hygiene and safety procedures		
Use special care to avoid static electric charges	Potential dust explosion hazard	
Provide adequate general and local exhaust ventilation.	Slight irritant by inhalation	

Conditions and measures related to personal protection, hygiene and health evaluation	
Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles	Causes serious eye irritation.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training	
By prolonged exposure : In case of insufficient ventilation, wear suitable respiratory equipment	Slight irritant by inhalation

7.3. Exposure estimation and reference to its source

Information for this exposure scenario:
As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed

7.3.1. Environmental release and exposure Contributing scenario controlling environmental exposure (ERC6b)

No information available

7.3.2. Worker exposure Contributing scenario controlling worker exposure (PROC3, PROC5, PROC8a, PROC8b)

Information for contributing exposure scenario
Long term exposure,Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted

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

7.4.1. Environment

No data available

7.4.2. Health

No data available

8. SE8 - Industrial; Use of citric acid in oil industry.

8.1. Title section

Use of citric acid in oil industry.	
ES Ref.: SE8 ES Type: Worker	Association ref code: Utilisation de l'acide citrique dans les produits de soins personnels.

Environment		Use descriptors
	Contributing scenario controlling environmental exposure	ERC8d

Worker		Use descriptors
	Contributing scenario controlling worker exposure	PROC3, PROC4, PROC5, PROC8a, PROC8b

Assessment method	Management/supervision in place to check that RMMs on place are being used correctly and OCs followed Training staff on good practice Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure.

8.2. Conditions of use affecting exposure

8.2.1. Control of environmental exposure: Contributing scenario controlling environmental exposure (ERC8d)

ERC8d	Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)

Product (article) characteristics	
Physical form of product	Liquid, Acids
Other product characteristics	Readily biodegradable, Partition coefficient n-octanol/water [log Kow], faint, Bioaccumulation unlikely

Technical and organisational conditions and measures	
Prevent liquid from entering sewers, watercourses, and soil.	
Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams	
Neutralize collected waste before discharge. Must undergo physico-chemical treatment prior to destruction	
Comply with local regulations for disposal	

8.2.2. Control of worker exposure: Contributing scenario controlling worker exposure (PROC3, PROC4, PROC5, PROC8a, PROC8b)

PROC3	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
PROC4	Chemical production where opportunity for exposure arises
PROC5	Mixing or blending in batch processes
PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities.
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities.

Product (article) characteristics	
Physical form of product	Acids, Solid or liquid
Concentration of substance in product	User defined
Other product characteristics	Service life, User defined

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

Technical and organisational conditions and measures		
Handle all packages and containers carefully to minimise spills		
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure		
Ensure good ventilation of the work station		
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop		
Always wash your hands immediately after handling this product, and once again before leaving the workplace		
Training staff on good practice		
Regular cleaning of equipment and work area		
Use good personal hygiene practices		
Handle in accordance with good industrial hygiene and safety procedures		
Use special care to avoid static electric charges	Potential dust explosion hazard	
Provide adequate general and local exhaust ventilation.	Slight irritant by inhalation	

Conditions and measures related to personal protection, hygiene and health evaluation	
Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles	Causes serious eye irritation.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training	
By prolonged exposure : In case of insufficient ventilation, wear suitable respiratory equipment	Slight irritant by inhalation

8.3. Exposure estimation and reference to its source

Information for this exposure scenario:
As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed

8.3.1. Environmental release and exposure Contributing scenario controlling environmental exposure (ERC8d)

No information available

8.3.2. Worker exposure Contributing scenario controlling worker exposure (PROC3, PROC4, PROC5, PROC8a, PROC8b)

Information for contributing exposure scenario
Long term exposure,Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted

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

8.4.1. Environment

No data available

8.4.2. Health

No data available

9. SE9 - Industrial, Professional, Consumer; Use of citric acid in paints and coatings.

9.1. Title section

Use of citric acid in paints and coatings.	
ES Ref.: SE9 ES Type: Worker	Association ref code: Utilisation de l'acide citrique dans les produits de soins personnels.

Environment		Use descriptors
	Contributing scenario controlling environmental exposure	ERC5, ERC8c, ERC8f, ERC10a, ERC10b, ERC11a, ERC11b

Worker		Use descriptors
	Contributing scenario controlling worker exposure	PROC7, PROC8a, PROC8b, PROC10, PROC11, PROC19, PROC24

Assessment method	Management/supervision in place to check that RMMs on place are being used correctly and OCs followed Training staff on good practice Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure.

9.2. Conditions of use affecting exposure

9.2.1. Control of environmental exposure: Contributing scenario controlling environmental exposure (ERC5, ERC8c, ERC8f, ERC10a, ERC10b, ERC11a, ERC11b)

ERC5	Use at industrial site leading to inclusion into/onto article
ERC8c	Widespread use leading to inclusion into/onto article (indoor)
ERC8f	Widespread use leading to inclusion into/onto article (outdoor)
ERC10a	Widespread use of articles with low release (outdoor)
ERC10b	Widespread use of articles with high or intended release (outdoor)
ERC11a	Widespread use of articles with low release (indoor)
ERC11b	Widespread use of articles with high or intended release (indoor)

Product (article) characteristics	
Physical form of product	Liquid, Acids
Other product characteristics	Readily biodegradable, Partition coefficient n-octanol/water [log Kow], faint, Bioaccumulation unlikely

Technical and organisational conditions and measures	
Prevent liquid from entering sewers, watercourses, and soil.	
Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams	
Neutralize collected waste before discharge. Must undergo physico-chemical treatment prior to destruction	
Comply with local regulations for disposal	

9.2.2. Control of worker exposure: Contributing scenario controlling worker exposure (PROC7, PROC8a, PROC8b, PROC10, PROC11, PROC19, PROC24)

PROC7	Industrial spraying
PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities.
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities.
PROC10	Roller application or brushing
PROC11	Non industrial spraying
PROC19	Manual activities involving hand contact
PROC24	High (mechanical) energy work-up of substances bound in /on materials and/or articles

Product (article) characteristics	
Physical form of product	Acids, Solid or liquid
Concentration of substance in product	User defined, Formulation of preparations
Other product characteristics	Service life, User defined

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

Technical and organisational conditions and measures		
Handle all packages and containers carefully to minimise spills		
Professional use. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure		
Ensure good ventilation of the work station		
Use good personal hygiene practices		
Always wash your hands immediately after handling this product, and once again before leaving the workplace		
Handle in accordance with good industrial hygiene and safety procedures		

Conditions and measures related to personal protection, hygiene and health evaluation	
Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles	Causes serious eye irritation.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training	
By prolonged exposure : In case of insufficient ventilation, wear suitable respiratory equipment	Slight irritant by inhalation

9.3. Exposure estimation and reference to its source

Information for this exposure scenario:
As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed

9.3.1. Environmental release and exposure Contributing scenario controlling environmental exposure (ERC5, ERC8c, ERC8f, ERC10a, ERC10b, ERC11a, ERC11b)

No information available

9.3.2. Worker exposure Contributing scenario controlling worker exposure (PROC7, PROC8a, PROC8b, PROC10, PROC11, PROC19, PROC24)

Information for contributing exposure scenario
Short term exposure,Long term exposure,Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted

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

9.4.1. Environment

No data available

9.4.2. Health

No data available

10. SE10 - Professional, Consumer; Use of citric acid in photography products.

10.1. Title section

Use of citric acid in photography products.	
ES Ref.: SE10 ES Type: Worker	Association ref code: Utilisation de l'acide citrique dans les produits de soins personnels.

Environment		Use descriptors
	Contributing scenario controlling environmental exposure	ERC8a

Worker		Use descriptors
	Contributing scenario controlling worker exposure	PROC5, PROC13

Assessment method	Management/supervision in place to check that RMMs on place are being used correctly and OCs followed Training staff on good practice Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure.

10.2. Conditions of use affecting exposure

10.2.1. Control of environmental exposure: Contributing scenario controlling environmental exposure (ERC8a)

ERC8a	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)

Product (article) characteristics	
Physical form of product	Liquid, Acids
Other product characteristics	Readily biodegradable, Partition coefficient n-octanol/water [log Kow], faint, Bioaccumulation unlikely

Technical and organisational conditions and measures	
Prevent liquid from entering sewers, watercourses, and soil.	
Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams	
Neutralize collected waste before discharge. Must undergo physico-chemical treatment prior to destruction	
Comply with local regulations for disposal	

10.2.2. Control of worker exposure: Contributing scenario controlling worker exposure (PROC5, PROC13)

PROC5	Mixing or blending in batch processes
PROC13	Treatment of articles by dipping and pouring

Product (article) characteristics	
Physical form of product	Acids, Solid or liquid
Concentration of substance in product	User defined, Formulation of preparations
Other product characteristics	Service life, User defined

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

Technical and organisational conditions and measures		
Handle all packages and containers carefully to minimise spills		
Professional use. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure		
Ensure good ventilation of the work station		
Use good personal hygiene practices		
Always wash your hands immediately after handling this product, and once again before leaving the workplace		
Handle in accordance with good industrial hygiene and safety procedures		

Conditions and measures related to personal protection, hygiene and health evaluation	
Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles	Causes serious eye irritation.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training	
By prolonged exposure : In case of insufficient ventilation, wear suitable respiratory equipment	Slight irritant by inhalation

10.3. Exposure estimation and reference to its source

Information for this exposure scenario:
As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed

10.3.1. Environmental release and exposure Contributing scenario controlling environmental exposure (ERC8a)

No information available

10.3.2. Worker exposure Contributing scenario controlling worker exposure (PROC5, PROC13)

Information for contributing exposure scenario
Short term exposure,Long term exposure,Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted

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

10.4.1. Environment

No data available

10.4.2. Health

No data available

11. SE11 - Industrial; Use of citric acid in textiles.

11.1. Title section

Use of citric acid in textiles.	
ES Ref.: SE11 ES Type: Worker	Association ref code: Utilisation de l'acide citrique dans les produits de soins personnels.

Environment		Use descriptors
	Contributing scenario controlling environmental exposure	ERC4

Worker		Use descriptors
	Contributing scenario controlling worker exposure	PROC8a, PROC8b, PROC10, PROC13, PROC22

Assessment method	Management/supervision in place to check that RMMs on place are being used correctly and OCs followed Training staff on good practice Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure.

11.2. Conditions of use affecting exposure

11.2.1. Control of environmental exposure: Contributing scenario controlling environmental exposure (ERC4)

ERC4	Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

Product (article) characteristics	
Physical form of product	Liquid, Acids
Other product characteristics	Readily biodegradable, Partition coefficient n-octanol/water [log Kow], faint, Bioaccumulation unlikely

Technical and organisational conditions and measures	
Prevent liquid from entering sewers, watercourses, and soil.	
Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams	
Neutralize collected waste before discharge. Must undergo physico-chemical treatment prior to destruction	
Comply with local regulations for disposal	

11.2.2. Control of worker exposure: Contributing scenario controlling worker exposure (PROC8a, PROC8b, PROC10, PROC13, PROC22)

PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities.
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities.
PROC10	Roller application or brushing
PROC13	Treatment of articles by dipping and pouring
PROC22	Manufacturing and processing of minerals and/or metals at substantially elevated temperature

Product (article) characteristics	
Physical form of product	Acids, Solid or liquid
Concentration of substance in product	User defined
Other product characteristics	Service life, User defined

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

Technical and organisational conditions and measures		
Handle all packages and containers carefully to minimise spills		
Professional use. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure		
Ensure good ventilation of the work station		
Always wash your hands immediately after handling this product, and once again before leaving the workplace		
Use good personal hygiene practices		
Handle in accordance with good industrial hygiene and safety procedures		
Use special care to avoid static electric charges	Potential dust explosion hazard	
Provide adequate general and local exhaust ventilation.	Slight irritant by inhalation	

Conditions and measures related to personal protection, hygiene and health evaluation	
Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles	Causes serious eye irritation.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training	
By prolonged exposure : In case of insufficient ventilation, wear suitable respiratory equipment	Slight irritant by inhalation

11.3. Exposure estimation and reference to its source

Information for this exposure scenario:

As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed

11.3.1. Environmental release and exposure Contributing scenario controlling environmental exposure (ERC4)

No information available

11.3.2. Worker exposure Contributing scenario controlling worker exposure (PROC8a, PROC8b, PROC10, PROC13, PROC22)

Information for contributing exposure scenario
Long term exposure,Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted

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

11.4.1. Environment

No data available

11.4.2. Health

No data available

12. SE12 - Industrial; Use of citric acid in laboratory agents.

12.1. Title section

Use of citric acid in laboratory agents.	
ES Ref.: SE12 ES Type: Worker	Association ref code: Utilisation de l'acide citrique dans les produits de soins personnels.

Environment		Use descriptors
	Contributing scenario controlling environmental exposure	ERC4, ERC7

Worker		Use descriptors
	Contributing scenario controlling worker exposure	PROC1, PROC2, PROC3, PROC4, PROC8a

Assessment method	Management/supervision in place to check that RMMs on place are being used correctly and OCs followed Training staff on good practice Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure.

12.2. Conditions of use affecting exposure

12.2.1. Control of environmental exposure: Contributing scenario controlling environmental exposure (ERC4, ERC7)

ERC4	Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
ERC7	Use of functional fluid at industrial site

Product (article) characteristics	
Physical form of product	Liquid, Acids
Other product characteristics	Readily biodegradable, Partition coefficient n-octanol/water [log Kow], faint, Bioaccumulation unlikely

Technical and organisational conditions and measures	
Prevent liquid from entering sewers, watercourses, and soil.	
Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams	
Neutralize collected waste before discharge. Must undergo physico-chemical treatment prior to destruction	
Comply with local regulations for disposal	

12.2.2. Control of worker exposure: Contributing scenario controlling worker exposure (PROC1, PROC2, PROC3, PROC4, PROC8a)

PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC3	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
PROC4	Chemical production where opportunity for exposure arises
PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities.

Product (article) characteristics	
Physical form of product	Acids, Solid or liquid
Concentration of substance in product	User defined, Formulation of preparations
Other product characteristics	Service life, User defined

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

Technical and organisational conditions and measures		
Handle all packages and containers carefully to minimise spills		
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure		
Ensure good ventilation of the work station		
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop		
Always wash your hands immediately after handling this product, and once again before leaving the workplace		
Training staff on good practice		
Regular cleaning of equipment and work area		
Use good personal hygiene practices		
Handle in accordance with good industrial hygiene and safety procedures		

Conditions and measures related to personal protection, hygiene and health evaluation	
Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles	Causes serious eye irritation.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training	
By prolonged exposure : In case of insufficient ventilation, wear suitable respiratory equipment	Slight irritant by inhalation

12.3. Exposure estimation and reference to its source

Information for this exposure scenario:
As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed

12.3.1. Environmental release and exposure Contributing scenario controlling environmental exposure (ERC4, ERC7)

No information available

12.3.2. Worker exposure Contributing scenario controlling worker exposure (PROC1, PROC2, PROC3, PROC4, PROC8a)

Information for contributing exposure scenario
Short term exposure,Long term exposure,Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted

12.4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

12.4.1. Environment

No data available

12.4.2. Health

No data available

13. SE13 - Industrial; Use of citric acid in water treatment.

13.1. Title section

	Use of citric acid in water treatment.
ES Ref.: SE13 ES Type: Worker	Association ref code: Utilisation de l'acide citrique dans le traitement de l'eau.

Environment		Use descriptors
	Contributing scenario controlling environmental exposure	ERC6a

Worker		Use descriptors
	Contributing scenario controlling worker exposure	PROC1, PROC2, PROC4, PROC8b

Assessment method	Management/supervision in place to check that RMMs on place are being used correctly and OCs followed Training staff on good practice Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure.

13.2. Conditions of use affecting exposure

13.2.1. Control of environmental exposure: Contributing scenario controlling environmental exposure (ERC6a)

ERC6a	Use of intermediate

Product (article) characteristics	
Physical form of product	Acids, Solid or liquid
Other product characteristics	Readily biodegradable, Partition coefficient n-octanol/water [log Kow], faint, Bioaccumulation unlikely

Technical and organisational conditions and measures	
Prevent liquid from entering sewers, watercourses, and soil.	
Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams	
Neutralize collected waste before discharge. Must undergo physico-chemical treatment prior to destruction	
Comply with local regulations for disposal	

13.2.2. Control of worker exposure: Contributing scenario controlling worker exposure (PROC1, PROC2, PROC4, PROC8b)

PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC4	Chemical production where opportunity for exposure arises
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities.

Product (article) characteristics	
Physical form of product	Acids, Solid or liquid

Product (article) characteristics	
Concentration of substance in product	User defined
Other product characteristics	Service life, User defined

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

Technical and organisational conditions and measures		
Handle all packages and containers carefully to minimise spills		
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure		
Ensure good ventilation of the work station		
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop		
Always wash your hands immediately after handling this product, and once again before leaving the workplace		
Training staff on good practice		
Regular cleaning of equipment and work area		
Use good personal hygiene practices		
Handle in accordance with good industrial hygiene and safety procedures		
Use special care to avoid static electric charges	Potential dust explosion hazard	
Provide adequate general and local exhaust ventilation.	Slight irritant by inhalation	

Conditions and measures related to personal protection, hygiene and health evaluation	
Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles	Causes serious eye irritation.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training	
By prolonged exposure : In case of insufficient ventilation, wear suitable respiratory equipment	Slight irritant by inhalation

13.3. Exposure estimation and reference to its source

Information for this exposure scenario:
As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed

13.3.1. Environmental release and exposure Contributing scenario controlling environmental exposure (ERC6a)

No information available

13.3.2. Worker exposure Contributing scenario controlling worker exposure (PROC1, PROC2, PROC4, PROC8b)

Information for contributing exposure scenario
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted

13.4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

13.4.1. Environment

No data available

13.4.2. Health

No data available

14. SE14 - Industrial; Use of citric acid in treatment of metals & surfaces.

14.1. Title section

Use of citric acid in treatment of metals & surfaces.	
ES Ref.: SE14 ES Type: Worker	Association ref code: Utilisation de l'acide citrique dans le traitement des métaux et des surfaces.

Environment		Use descriptors
	Contributing scenario controlling environmental exposure	ERC4, ERC7

Worker		Use descriptors
	Contributing scenario controlling worker exposure	PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC18, PROC20, PROC25

Assessment method	Management/supervision in place to check that RMMs on place are being used correctly and OCs followed Training staff on good practice Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure.

14.2. Conditions of use affecting exposure

14.2.1. Control of environmental exposure: Contributing scenario controlling environmental exposure (ERC4, ERC7)

ERC4	Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
ERC7	Use of functional fluid at industrial site

Product (article) characteristics	
Physical form of product	Acids, Solid or liquid
Other product characteristics	Readily biodegradable, Partition coefficient n-octanol/water [log Kow], faint, Bioaccumulation unlikely

Technical and organisational conditions and measures	
Prevent liquid from entering sewers, watercourses, and soil.	
Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams	
Neutralize collected waste before discharge. Must undergo physico-chemical treatment prior to destruction	
Comply with local regulations for disposal	

14.2.2. Control of worker exposure: Contributing scenario controlling worker exposure (PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC18, PROC20, PROC25)

PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC3	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

PROC4	Chemical production where opportunity for exposure arises
PROC7	Industrial spraying
PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities.
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities.
PROC9	Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC10	Roller application or brushing
PROC13	Treatment of articles by dipping and pouring
PROC18	General greasing /lubrication at high kinetic energy conditions
PROC20	Use of functional fluids in small devices
PROC25	Other hot work operations with metals

Product (article) characteristics	
Physical form of product	Acids, Solid or liquid
Concentration of substance in product	User defined
Other product characteristics	Service life, User defined

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

Technical and organisational conditions and measures		
Handle all packages and containers carefully to minimise spills		
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure		
Ensure good ventilation of the work station		
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop		
Always wash your hands immediately after handling this product, and once again before leaving the workplace		
Training staff on good practice		
Regular cleaning of equipment and work area		
Use good personal hygiene practices		
Handle in accordance with good industrial hygiene and safety procedures		
Use special care to avoid static electric charges	Potential dust explosion hazard	
Provide adequate general and local exhaust ventilation.	Slight irritant by inhalation	

Conditions and measures related to personal protection, hygiene and health evaluation	
Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles	Causes serious eye irritation.

Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training	
By prolonged exposure : In case of insufficient ventilation, wear suitable respiratory equipment	Slight irritant by inhalation

14.3. Exposure estimation and reference to its source

Information for this exposure scenario:
As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed

14.3.1. Environmental release and exposure Contributing scenario controlling environmental exposure (ERC4, ERC7)

No information available

14.3.2. Worker exposure Contributing scenario controlling worker exposure (PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC18, PROC20, PROC25)

Information for contributing exposure scenario
Short term exposure,Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted

14.4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

14.4.1. Environment

No data available

14.4.2. Health

No data available

15. SE15 - Industrial, Professional, Consumer; Use of citric acid agricultural applications.

15.1. Title section

Use of citric acid agricultural applications.	
ES Ref.: SE15 ES Type: Worker	Association ref code: Utilisation des applications agricoles de l'acide citrique.

Environment		Use descriptors
	Contributing scenario controlling environmental exposure	ERC4, ERC7

Worker		Use descriptors
	Contributing scenario controlling worker exposure	PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC18, PROC20, PROC25

Assessment method	Management/supervision in place to check that RMMs on place are being used correctly and OCs followed Training staff on good practice Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure.

15.2. Conditions of use affecting exposure

15.2.1. Control of environmental exposure: Contributing scenario controlling environmental exposure (ERC4, ERC7)

ERC4	Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
ERC7	Use of functional fluid at industrial site

Product (article) characteristics	
Physical form of product	Acids, Solid or liquid
Other product characteristics	Readily biodegradable, Partition coefficient n-octanol/water [log Kow], faint, Bioaccumulation unlikely

Technical and organisational conditions and measures	
Prevent liquid from entering sewers, watercourses, and soil.	
Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams	
Neutralize collected waste before discharge. Must undergo physico-chemical treatment prior to destruction	
Comply with local regulations for disposal	

15.2.2. Control of worker exposure: Contributing scenario controlling worker exposure (PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC18, PROC20, PROC25)

PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC3	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
PROC4	Chemical production where opportunity for exposure arises

PROC7	Industrial spraying
PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities.
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities.
PROC9	Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC10	Roller application or brushing
PROC13	Treatment of articles by dipping and pouring
PROC18	General greasing /lubrication at high kinetic energy conditions
PROC20	Use of functional fluids in small devices
PROC25	Other hot work operations with metals

Product (article) characteristics	
Physical form of product	Acids, Solid or liquid
Concentration of substance in product	User defined
Other product characteristics	Service life, User defined

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

Technical and organisational conditions and measures		
Handle all packages and containers carefully to minimise spills		
Professional use. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure		
Ensure good ventilation of the work station		
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop		
Always wash your hands immediately after handling this product, and once again before leaving the workplace		
Training staff on good practice		
Regular cleaning of equipment and work area		
Use good personal hygiene practices		
Handle in accordance with good industrial hygiene and safety procedures		
Use special care to avoid static electric charges	Potential dust explosion hazard	
Provide adequate general and local exhaust ventilation.	Slight irritant by inhalation	

Conditions and measures related to personal protection, hygiene and health evaluation	
Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles	Causes serious eye irritation.

Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training	
By prolonged exposure : In case of insufficient ventilation, wear suitable respiratory equipment	Slight irritant by inhalation

15.3. Exposure estimation and reference to its source

Information for this exposure scenario:
As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed

15.3.1. Environmental release and exposure Contributing scenario controlling environmental exposure (ERC4, ERC7)

No information available

15.3.2. Worker exposure Contributing scenario controlling worker exposure (PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC18, PROC20, PROC25)

Information for contributing exposure scenario
Short term exposure,Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted

15.4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

15.4.1. Environment

No data available

15.4.2. Health

No data available

16. SE16 - Industrial, Consumer; Use of citric acid in medical devices.

16.1. Title section

	Use of citric acid in medical devices.	
	ES Ref.: SE16 ES Type: Worker	Association ref code: Utilisation de l'acide citrique dans les dispositifs médicaux.

Environment		Use descriptors
	Contributing scenario controlling environmental exposure	ERC8d

Worker		Use descriptors
	Contributing scenario controlling worker exposure	PROC1

Assessment method	Management/supervision in place to check that RMMs on place are being used correctly and OCs followed Training staff on good practice Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure.

16.2. Conditions of use affecting exposure

16.2.1. Control of environmental exposure: Contributing scenario controlling environmental exposure (ERC8d)

ERC8d	Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)

Product (article) characteristics	
Physical form of product	Liquid, Acids
Other product characteristics	Readily biodegradable, Partition coefficient n-octanol/water [log Kow], faint, Bioaccumulation unlikely

Technical and organisational conditions and measures	
Prevent liquid from entering sewers, watercourses, and soil.	
Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams	
Neutralize collected waste before discharge. Must undergo physico-chemical treatment prior to destruction	
Comply with local regulations for disposal	

16.2.2. Control of worker exposure: Contributing scenario controlling worker exposure (PROC1)

PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Product (article) characteristics	
Physical form of product	Acids, Solid or liquid
Concentration of substance in product	User defined
Other product characteristics	Service life, User defined

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

Technical and organisational conditions and measures		
Handle all packages and containers carefully to minimise spills		
Professional use. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure		
Ensure good ventilation of the work station		
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop		
Always wash your hands immediately after handling this product, and once again before leaving the workplace		
Training staff on good practice		
Regular cleaning of equipment and work area		
Use good personal hygiene practices		
Handle in accordance with good industrial hygiene and safety procedures		
Use special care to avoid static electric charges	Potential dust explosion hazard	
Provide adequate general and local exhaust ventilation.	Slight irritant by inhalation	

Conditions and measures related to personal protection, hygiene and health evaluation	
Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles	Causes serious eye irritation.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training	
By prolonged exposure : In case of insufficient ventilation, wear suitable respiratory equipment	Slight irritant by inhalation

16.3. Exposure estimation and reference to its source

Information for this exposure scenario:

As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed

16.3.1. Environmental release and exposure Contributing scenario controlling environmental exposure (ERC8d)

No information available

16.3.2. Worker exposure Contributing scenario controlling worker exposure (PROC1)

Information for contributing exposure scenario
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted

16.4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

16.4.1. Environment

No data available

16.4.2. Health

No data available