TEMPO

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Revision date: 21/12/2023 Supersedes version of: 30/06/2016 Version: 6.0

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

1.1. Product identifier

Product form	:	Substance
Name	:	Citric acid
Trade name	:	TEMPO
EC-No.	:	201-069-1
CAS-No.	:	77-92-9
Formula	:	C6H8O7

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

Relevant identified uses

Use of the substance/mixture	:	Setting retarder for CNP PM NF quick setting cement, maximum dosage: 1% of binder weight

1.3. Details of the supplier of the safety data sheet

S.A. VICAT
Direction Commerciale Ciments et Liants Hydrauliques -
4 Rue Aristide Bergès
FR 38080 L'Isle d'Abeau
France
T +33 4 74 27 59 00 , F +33 4 74 18 41 15
fds.ciment@vicat.fr

1.4. Emergency telephone number

Country/Area	Organisation/Company	Address	Emergency number	Comment
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals-24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)	
Malta	Medicines & Poisons Info Office	Mater Dei Hospital Msida MSD 2090 Msida	112 +356 2545 6508	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Eye Irrit. 2	H319
STOT SE 3	H335

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

Adverse physicochemical, human health and environmental effects

Causes serious eye irritation. May cause respiratory irritation. Presents no particular risk to the environment, provided the disposal requirements (see section 13) and national or local regulations are complied with.

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.
H335 - May cause respiratory irritation.

Precautionary statements (CLP) : P261 - Avoid breathing dust.
P264 - Wash hands, forearms and face thoroughly after handling.
P280 - Wear protective gloves, eye protection, face protection.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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

Other hazards which do not result in classification : May cause skin irritation.

This substance does not meet the PBT criteria of REACH regulation, annex XIII
This substance does not meet the vPvB criteria of REACH regulation, annex XIII

The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Citric acid	CAS-No.: 77-92-9 EC-No.: 201-069-1	100	Eye Irrit. 2, H319 STOT SE 3, H335

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

Comments : Specific concentration limits LCS: not concerned
Multiplication factor M: not concerned
Acute toxicity estimate (ATE): not relevant
Nanoparticle material: no data available

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : In the event of exposure to high concentrations : Move the affected person to the fresh air, If irritation persists, consult a doctor.

First-aid measures after skin contact : Wash skin with mild soap and water. If case of redness or irritation, call a doctor.

First-aid measures after eye contact : Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 minutes minimum). Always consult an eye specialist, even if there are no immediate symptoms.

First-aid measures after ingestion : On ingestion in large quantities: Never attempt to induce vomiting. If swallowed, rinse mouth with water (only if the person is conscious). Immediately call a POISON CENTER/doctor.

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

Symptoms/effects after inhalation : Irritation to throat and respiratory system.

Symptoms/effects after skin contact : Skin irritation.

Symptoms/effects after eye contact : Eye irritation.

Symptoms/effects after ingestion : Irritation of mucous membranes. Vomiting.

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

Treat symptomatically. If possible show this sheet, if not available show packaging or label.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Dry powder. Foam. Carbon dioxide (CO2).
Unsuitable extinguishing media : High volume water jet.

5.2. Special hazards arising from the substance or mixture

Explosion hazard : Avoid raising powdered material due to explosion hazard.
Hazardous decomposition products in case of fire : Toxic and irritating fumes may be released. Carbon oxides (CO, CO2).

5.3. Advice for firefighters

Firefighting instructions : Cool down the containers exposed to heat with a water spray. Contain the extinguishing fluids by bunding.
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Ensure that there is a suitable ventilation system. Remove ignition sources.

For non-emergency personnel

Protective equipment : Avoid contact with skin and eyes. Do not breathe dust.

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

Do not allow product to spread into the environment. Do not discharge into drains or rivers. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Clean up TEMPO using methods that do not cause its dispersion into the air, for example: suction cleaners (portable industrial strength, equipped with an effective air particle filter (HEPA filter) or some other equivalent technique) . Place the recovered product in a closed container. Arrange for its collection before disposing of it as indicated in section 13.
Methods for cleaning up : Wash with plenty of water and detergent.
Other information : Dispose of contaminated materials in accordance with current regulations.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Remove ignition sources.
Precautions for safe handling : Avoid the formation or spread of dust in the atmosphere. Avoid contact with skin and eyes. Do not breathe dust. In case of insufficient ventilation, wear suitable respiratory equipment. Comply with instructions for use (refer to technical sheet). Prevent the build-up of electrostatic charge.

Hygiene measures	:	Do not eat, drink or smoke while handling TEMPO in order to avoid all contact with the skin or mouth. Wash your hands immediately after handling TEMPO or products containing it. Remove clothing, shoes, watches and other contaminated objects and wash them separately and thoroughly before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	:	Keep container tightly closed. Store in dry, cool, well-ventilated area.
Incompatible materials	:	Strong bases. Strong oxidizing agents. Metals. reducing materials.
Heat and ignition sources	:	Keep away from open flames, hot surfaces and sources of ignition.
Information on mixed storage	:	Keep away from food, drink and animal feeding stuffs.
Special rules on packaging	:	Store in original container.
Packaging materials	:	Polyethylene. Polypropylene.

7.3. Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls

Appropriate engineering controls:
Ensure good ventilation of the work station.

Personal protection equipment

Eye and face protection

Eye protection:
Safety glasses. (ISO 16321-1)

Skin protection

Skin and body protection:
Handling large quantities of product: Protective clothing, Boots

Hand protection:
Nitrile-rubber protective gloves. The gloves are efficient only if the particles of TEMPO do not penetrate between gloves and skin. The protective gloves to be used must comply with the specifications of the regulation 2016/425 and the resultant standard ISO 374-1. Breakthrough time : refer to the recommendations of the supplier

Respiratory protection

Respiratory protection:
In the event of insufficient ventilation: Dust mask FFP2. (EN 143)

Environmental exposure controls

Environmental exposure controls:
Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Colour	:	White.
Appearance	:	Crystalline powder.
Molecular mass	:	192.12 g/mol
Odour	:	None.

Odour threshold	:	Not applicable
Melting point	:	153 °C (1013 hPa)
Freezing point	:	Not applicable
Boiling point	:	Not determined
Flammability	:	Not determined
Explosive properties	:	No data available.
Oxidising properties	:	Non oxidizing material according to EC criteria.
Lower explosion limit	:	Not applicable
Upper explosion limit	:	Not applicable
Flash point	:	Not applicable
Auto-ignition temperature	:	345 °C
Decomposition temperature	:	> 170 °C
pH	:	1.8 (5% aqueous solution - 25°C)
pH solution	:	Not available
Viscosity, kinematic	:	Not applicable
Viscosity, dynamic	:	Not determined
Solubility	:	Water: 61.8 % (25°C) Ethanol: 38.3 % (25°C)
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Partition coefficient n-octanol/water (Log Pow)	:	-1.6 – -1.8
Vapour pressure	:	0 Pa (25 °C)
Vapour pressure at 50°C	:	Not available
Density	:	850 – 950 g/cm³ (Apparent specific gravity) - 1.665 g/cm³ (Absolute specific gravity)(20°C)
Relative density	:	Not determined
Relative vapour density at 20°C	:	Not determined
Particle size	:	Not available

9.2. Other information

Other safety characteristics

Relative evaporation rate (butylacetate=1)	:	Not determined

SECTION 10: Stability and reactivity

10.1. Reactivity

To our knowledge, the product does not present any particular risk, under normal conditions of use.

10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

10.3. Possibility of hazardous reactions

Dust may form explosive mixture in air.

10.4. Conditions to avoid

Avoid dust formation. Avoid the build-up of electrostatic charge.

10.5. Incompatible materials

Strong bases. Strong oxidizing agents. Metals. reducing materials.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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 (77-92-9)	
LD50 oral rat	4500 – 6400 mg/kg bodyweight (OECD 401 method)
LD50 dermal rat	> 2000 mg/kg bodyweight (OECD 402 method)

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met)
pH: 1.8 (5% aqueous solution - 25°C)

Additional information : Repeated or prolonged contact may cause slight irritation to the skin

Serious eye damage/irritation : Causes serious eye irritation.
pH: 1.8 (5% aqueous solution - 25°C)

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)

Additional information : Ames test (with and without metabolic activation) : negative
(Published data)

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 : May cause respiratory irritation.

STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met)

Aspiration hazard : Not classified (Not applicable)

Citric acid (77-92-9)	
Viscosity, kinematic	Not applicable

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : To our knowledge, the product does not present any particular risk, under normal conditions of use.

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 (77-92-9)	
LC50 fish	440 – 760 mg/l/48 h (Leuciscus idus melanotus)
EC50 Daphnia	> 50 mg/l/48 h (Dreissena polymorphia)

12.2. Persistence and degradability

Citric acid (77-92-9)	
Persistence and degradability	Readily biodegradable.
Biochemical oxygen demand (BOD)	0.526 g O2/g substance
Chemical oxygen demand (COD)	0.728 g O2/g substance
Biodegradation	100 % (19 days) (OECD 301F method)

12.3. Bioaccumulative potential

Citric acid (77-92-9)	
Partition coefficient n-octanol/water (Log Pow)	-1.6 – -1.8

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Citric acid (77-92-9)
This substance does not meet the PBT criteria of REACH regulation, annex XIII
This substance does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of in accordance with relevant local regulations. Clean up with detergents.
Product/Packaging disposal recommendations : Reuse or recycle following washing.
Additional information : The user's attention is drawn to the possible existence of specific european, national or local regulations regarding disposal.

SECTION 14: Transport information

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

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
Not regulated for transport				
14.2. UN proper shipping name				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated

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

EU-Regulations

REACH Annex XVII (Restriction List)

Not listed on REACH Annex XVII

REACH Annex XIV (Authorisation List)

Not listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Not listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Not listed on the PIC list (Regulation EU 649/2012)

POP Regulation (Persistent Organic Pollutants)

Not listed on the POP list (Regulation EU 2019/1021)

Ozone Regulation (2024/590)

Not listed on the Ozone Depletion list (Regulation EU 2024/590)

Council Regulation (EC) for the control of dual-use items

Not listed on the COUNCIL REGULATION (EC) of dual-use items.

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.2. Chemical safety assessment

No information available

SECTION 16: Other information

Indication of changes:
This sheet was updated (refer to the date at the top of this page). SDS EU format according to COMMISSION REGULATION (EU) 2020/878.

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
LC50	Median lethal concentration
LD50	Median lethal dose
ED	Endocrine disruptor
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods

Abbreviations and acronyms:	
PBT	Persistent Bioaccumulative Toxic
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
vPvB	Very Persistent and Very Bioaccumulative

Data sources : ECHA (European Chemicals Agency).

Full text of H- and EUH-statements:	
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

Safety Data Sheet (SDS), EU

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.