

MATERIAL SAFETY DATA SHEET

Date of issue:	09. 20. 2019	Page : 1
Product name:	Tablet of Citric acid	

1. Identification of the product and of the company

1.1	Product name	Tablet of Citric acid
	Forms of production	Tablet
	CAS Number / 77-92-9	
1.2	Use of the product	Disinfection for space in medical, veterinary, food industry, household use and other fields
1.3	Manufacturer identification	F334,45.JOJEONG-DAERO, HANAM CITY, GYEONGGI-DO, REPUBLIC OF KOREA
	Manufacturer trade name	F334,45.JOJEONG-DAERO, HANAM CITY, GYEONGGI-DO, REPUBLIC OF KOREA
	Manufacturer address	F334,45.JOJEONG-DAERO, HANAM CITY, GYEONGGI-DO, REPUBLIC OF KOREA
	Phone number	82 31 18339947
	Fax	82 070 40159947
1.4	Emergency phone	82 10 42364560

2. Composition, Information on Ingredients

Components					
Chemical name	Sodium Chlorite	Magnesium sulphate	Sodium bisulfate	Sodium carbonate	Citric acid
Number of CAS	7758-19-2	7487-88-9	7681-38-1	497-19-8	77-92-9
Number of ES (EINECS)	231-836-6	231-298-2	231-665-7	207-838-8	201-069-1

3. Hazard identification

3.1	Hazardous symbols	Xn O Oxidizing agent
	Risk Codes	R23/24/25 Toxic by inhalation / in contact with skin / if swallowed R29 Contact with water liberates toxic gas
	Safety Codes	S17 Keep away from combustible material S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice S36/37/39 Wear suitable protective clothing / gloves / eye and face protection S38 In case of insufficient ventilation, wear suitable respiratory equipment S45 In case of accident or if you feel unwell seek medical advice immediately (show container or label if possible)
3.2	Potential Health Effects	Irritating to eyes and skin Harmful if swallowed

MATERIAL SAFETY DATA SHEET

Date of issue:

09. 20. 2019

Page : 2

Product name:

Tablet of Citric acid

3.3	Potential Environmental Effects	Not harmful
3.4	Abusive treatment	Releases Chlorine dioxide in contact with water Contact with water only for designated use of the product
3.5	Other information	-
4. First-aid measures		
4.1	General information	In case of accident, contact with eyes or if you feel unwell, seek medical advice (show the label or this MSDS whenever possible)
4.2	Inhalation	Shut off source of exposure, if possible bring the victim to the fresh air; keep at rest; if necessary, seek medical attention
4.3	Skin contact	Wash thoroughly place of contact with water. Use protective cream on the skin. If necessary, seek medical attention.
4.4	Eye contact	Flush with large amounts of fresh water at least 10 minutes; seek medical attention.
4.5	Ingestion	Flush mouth with large amounts of fresh water and let victim drink 0.5 l of lukewarm water. Do not induce vomiting. Seek medical attention.
4.6	Other information	-
5. Fire-fighting measures		
5.1	Suitable extinguishing media	Dry chemicals extinguisher.
5.2	Extinguishing media which must not be used for safety reasons	Do not use hose nozzle
5.3	Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases	By thermal decomposition toxic gases can be released.
5.4	Special protective equipment for fire-fighters	Overall Wear a suitable respiratory system protection
5.5	Other information	Avoid release to the sewers and water courses.
6. Accidental release measures		
6.1	Personal precautions	Wear suitable protective equipment
6.2	Environmental precautions	Store the product in original, tightly closed containers. Avoid release to the sewers, water courses or environment
6.3	Methods for cleaning up and disposal	Collect spilled product and forward to waste utilization. Decontaminate environment with large amount of water. In case of accidental discharge of the product to the sewers or water courses notify local authorities according to local regulations.
6.4	Other information	-

MATERIAL SAFETY DATA SHEET

Date of issue:

09. 20. 2019

Page : 3

Product name:

Tablet of Citric acid

7. Handling and storage

7.1	Handling	Ensure sufficient ventilation at the workplace. Avoid contact with eyes, skin and clothes. Wear suitable protective equipment. Avoid release of concentrated product to the environment. Avoid dust swirling. Keep safety regulations at work.
7.2	Storage	Store the product in original, tightly closed containers. Keep away from food, drink and feed. Store the product in dry, weather-protected surrounding. Keep away from heat and direct sunlight. Storage temperature: from -50°C to $+30^{\circ}\text{C}$. The store temperature may temporarily increase up to 50°C but not longer than for 24 hours.
7.3	Specific use	-

8. Exposure controls / personal protection

8.1	Exposure limit value (for Chlorine Dioxide)	Permissible Exposure Limit (PEL) 0.3 mg/m^3 Below
8.2	Exposure controls	Not harmful
8.2.1	Occupation exposure controls	Keep handling and storage conditions. Ensure sufficient ventilation. Keep normal hygienic rules at work. Don't smoke, eat and drink at work. Wash hands at the end of working shift. Use protective cream on the skin.
	Respiratory protection	Ensure sufficient ventilation or wear suitable respiratory protection with a suitable filter (against dust or mechanical contaminants), optionally appropriate gas filter (according to character of the work).
	Hand protection	Rubber gloves
	Eye protection:	Wear suitable protective goggles or protective facial shield if contact with eyes is possible.
	Skin protection	Keep general hygienic rules at work. Wash hands with warm water and soap at the end of working shift. Remove contaminated clothes.
8.2.2	Environmental exposure controls	-

9. Physical and chemical properties

9.1	General information	
	Appearance (at 20°C)	Solid (Tablet)

MATERIAL SAFETY DATA SHEET

Date of issue:

09. 20. 2019

Page : 4

Product name:

Tablet of Citric acid

	Colour	White
	Odour	Characteristic (of Chlorine Dioxide)
9.2	Important health, safety and environmental information	Not harmful
	pH (0.1% water solution)	4.5 – 6.5
	Melting point	180°C
	Boiling point/range (°C)	100°C
	Flash point (°C)	250°C
	Flammability	Not harmful
	Auto-ignition temperature (°C)	Doesn't show
	Explosive properties	Not harmful
	Oxidising properties:	The product shows oxidising properties
	Vapour pressure (at 20°C)	no data
	Density (at 20°C)	no data
	Water solubility (18°C)	Soluble in water to formulate yellow-green gel.
	solubility in solvents	Well soluble
	Viscosity	No viscosity
	Vapour density	Good vapor density
	Evaporation rate	Fast evaporation rate
9.3	Other information	Chlorine dioxide: 0.05~0.1ppm wt.
10. Stability and reactivity		
	Stability	Stable at the storage temperature range
10.1	Conditions to avoid	High temperature, humidity, heating of the product. Long exposure to direct sunlight.
10.2	Materials to avoid	Reducing agents, cleaning agents, flammable liquids and flammable materials, nitrogen containing compounds, ammonia and ammonium salts, diluted, concentrated acids and acid substances
10.3	Hazardous decomposition products	sodium chlorite
11. Toxicological information		
	Acute toxicity	no data

MATERIAL SAFETY DATA SHEET

Date of issue:

09. 20. 2019

Page : 5

Product name:

Tablet of Citric acid

	- LD ₅₀ , oral, rat (mg.kg ⁻¹)	200
	Irritability	Skin (rabbit): irritable Eyes (rabbit): irritable
	Sensibilization	The product is not classified as sensibilizing
	Carcinogenicity	The product is not classified as cancerous.
	Mutagenicity	The product is not classified as mutagenic.
	Reproductive effects	The product is not classified as toxic for reproduction.
	Human experience	Irritant effects; Doesn't show narcotic effects.
	Animal tests	See part 11 and part 12 of this MSDS
	Other information	-
12. Ecological information		
12.1	Ecotoxicity	no data
	Acute toxicity to aquatic organisms Toxic for aquatic organisms	
	- LC ₅₀ , 48 h., dafnie (mg/l)	-
	- IC ₅₀ , 72 h., algae (mg.l)	Undefined
12.2	Mobility	-
12.3	Persistence and degradability	The product components are gradually biodegradable in the environment
12.4	Bioaccumulative	This product will not bioaccumulate
12.5	Other adverse effects	-
13. Disposal considerations		
	Disposal of product	The product should be disposed in accordance with local legislation. The contaminated absorbent should be disposed as a dangerous waste.
	Disposal of packaging	Contaminated containers with remaining quantities of the product should be disposed in accordance with local legislation.
	Other information	-
14. Transport information		
14	Land & Sea transport	

MATERIAL SAFETY DATA SHEET

Date of issue:	09. 20. 2019	Page : 6
Product name:	Tablet of Citric acid	

	<p>DOT Classification for Bulk Shipments (non bulk shipments may differ): Not a DOT controlled material (UnitedStates).</p> <p>.Proper Shipping Name: Notapplicable.</p> <p>.UN Number: Not applicable. .Packing Group: Not applicable.</p> <p>.Marine Pollutant: Not available. .Hazardous Substance Reportable Quantity: Not available.</p> <p>.TDG Classification: Not controlled under TDG (Canada).</p> <p>.ADR/RID Classification: Not controlled under ADR(Europe)</p> <p>.IMO/IMDG Classification: Not Controlled under IMDG.</p> <p>.ICAO/IATA Classification: Not controlled under IATA.</p>
--	---

15. Regulatory information

15.1	Hazardous symbols O Oxidizing agent	
	Risk Code	R23/24/25 Toxic by if swallowed R29 Contact with water liberates gas
	Safety Codes	S8 Keep container dry S17 Keep away from combustible material S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice S36/37/39 Wear suitable protective clothing / gloves / eye and face protection S38 In case of insufficient ventilation, wear suitable respiratory equipment S45 In case of accident or if you feel unwell seek medical advice immediately (show container or label if possible)
15.2	Specific information concerned with personal protection or environment	no data
15.3	Other information	

16. Other information

The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

PURE O2 Co.,