MSDS Report

Sample Description Chlorine Dioxide Tablet

Applicant Langfang Yuanmao Trading Co., Ltd.

Material Safety Data Sheet

According to: ST/SG/AC. 10/30/Rev.6 (GHS)
Disinfectant Tablet

Section 1 - Identification of the substance/preparation and of the company/undertaking

Product Identifier
Product name: Chlorine Dioxide Tablet
Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Disinfection sterilization
Details of the supplier of the safety data sheet
Applicant: Langfang Yuamao Trading Co, Ltd.
Supplier: Zhuolu Xiuyuan Bio Tech Co., Ltd.
Address: A-1-111, Fenghe Apartment, Guangyang District, Langfang City, Hebei Province
TEL: +86-316-5121271 **FAX:**/
E-mal: sales01@lymtrade.com **Emergency Phone:** +86-316-5121273

Section 2- Hazards Identification

Classification of the substance or mixture
Classification according to GHS

Oxidizing solids (Category 2)
Acute toxicity, lnhalation (Category 3)
Acute toxicity Dermal (Category 3)
Acute aquatic toxicity (Category 2)
toxicity-Repeated(Category 2)
Skin corrosion (Category 1B)
Acute toxicity, Oral (Category 4)
Serious eye damage (Category 1)
Specific target organ

GHS label elements:
Pictogram

Signal word Danger
Hazard statement(s)
H272 May intensify fire; oxidizer.
H302 Harmful if swallowed.
H311 Toxic in contact with skin
H314 Causes severe skin burns and eye damage.
H318 Causes severe eye damage.
H331 Toxic if inhaled.
H373 May cause damage to organs through prolonged or repeated exposure.
Precautionary statement(s)
P220 Keep/Store away from clothing/combustible materials.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection
P302+350 IF ON SKIN: Gently wash with soap and water.
P304+340 IF INHALED: Remove victim to fresh air and keep at rest in a position 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.
P309+ P311 IF exposed or you feel unwell: Call a POISON CENTER or doctor/physician.
P501 Dispose of contents/container in accordance with local/ regional/national/international regulations.
Other hazards
Physical and chemical hazards: See Section 10
Human health hazards: See Section 11
Environmental hazards: See Section 12

Section 3 - Composition Information on Ingredient

Chemical composition

Component	CAS No.	Formula	Composition	EC No.	GHS CLASS
Sodium hydrogen sulphate	7681-38-1	$NaHSO_4$	40%	231-665-7	Eye Dam. 1H318
Sodium chlorite	7758-19-2	$NaClO_2$	20%	231-836-6	Ox. Sol. 2 Acute Tox.3* Acute Tox.2* Acute Tox. 2* Skin Corr.1B STOT RE 2 Aquatic Acute 1 H272 H301 H310 H330 H314 H373 H400
Sodium chloride	7647-14-5	NaCl	10%	231-598-3	/
Sodium carbonate	497-19-8	Na_2CO_3	10%	207-838-8	Eye Irrit.2H319
Critic acid	77-92-9	$C_6H_8O_7$	10%	201-069-1	Eye Irrit.2H319
Magnesium sulfate	7487-88-9	MgSO4	10%	231-298-2	/

For the full text of H-Statements mentioned in this section, see section 16.

Section 4-First Aid Measures

Description of first aid measure
Eye Contact: Check for and remove any contact lenses. Immediately flush eyes with

plenty of water for at least15 minutes. Occasionally lifting the upper and lower eyelids. Get medical attention if irritation occurs.
Skin Contact: Immediately wash skin with soap and copious amounts of water. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation develops and persists, seek medical attention.
Ingestion: Get medical attention. Do not induce vomiting; Never give anything by mouth to an unconscious person. Wash out mouth with water. Loosen tight clothing such as a collar, tie, belt or waistband.
Inhalation: Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If not breathing, give artificial respiration. If breathing is difficult, give oxygen Seek medical attention if irritation develops or persists. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.
Personal protective equipment for first-aid responders:
No further relevant information available.
Most important symptoms/effects, acute and delayed:
No further relevant information available.
Indication of immediate medical attention and special treatment needed:
Treat symptomatically.

Section 5- Fire Fighting Measures

Extinguishing media
Suitable Extinguishing Media:
Water in large amounts, water spray. NO carbon dioxide.
Special hazards arising from the substance or mixture:
Not combustible but enhances combustion of other substances. Gives off irritating or toxic fumes (or gases) in a fire. Risk of fire and explosion on contact with reducing agents and organic matter. This material in sufficient quantity and reduced particle size is capable of creating a dust explosion. Keep product and empty container away from heat and sources of ignition. This chemical has strong oxidizing soluble in water.
Advice for firefighters:
As in any fire, wear self-contained breathing apparatus pressure-demand. MSHA/NIOSH (approved or equivalent) and full protective gear.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures
Corrosive solid. If packages rupture. Ensure adequate ventilation. Use personal protective equipment. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Spilled or released at long industrial condition: Remove ignition sources, Keep away from heat and flame, evacuate area. Avoid dust formation. Avoid breathing dust. Shut off source of the leak only if it is easy to do so. Do not get water inside containers.
Environmental precautions

Take precautions to ensure product does not contaminate the ground or enter the drainage system surface water, sanitary sewer or ground water system. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

Sweep up and place in suitable containers for recycle or disposal according to local/national regulations (see section 13). Keep in suitable, closed containers for disposal.

Reference to other sections

See Section 7 for information on safe handling
See Section 8 for information on persona protection equipment.
See Section 13 for disposal information.

Section 7- Handling and Storage

Precautions for safe handling

Dust generated in handling of this product can be explosive if sufficient quantities are mixed in air. In accordance with good industrial practice, handle with care and avoid unnecessary personal contact. Wash thoroughly after handing. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Avoid breathing dust. Avoid physical damage to the container, ground and bond containers when transferring material. Take necessary action to avoid static electricity discharge. Do not eat, drink or smoke while handling the product. Keep away from heal. Keep away from sources of ignition. Keep away from incompatibles such as oxidizing agents, acids, alkalis. Use spark-proof tools and explosion proof equipment. Do not allow water 10 get into the container.

Conditions for safe storage, including any incompatibilities

Keep away from heat, sparks, and flame. Store in a cool, dry, well-ventilated away from incompatible substances and foodstuff containers. Separated from combustible and reducing substances, acids, and other incompatible materials. Corrosive materials should be stored in a separate safety storage cabinet or room. Don't and acidity material storage together. It is strictly prohibited to contact with water. To humidity sensitive. Keep out of the reach of children.

Specific end uses

No data available

Section 8 - Exposure Controls/Personal Protection

Control parameters

Exposure limits:

CAS# 7758-19-2: Russia-STEL: 1mg/ m^3, Skin
CAS# 77-92-9: Russia-STEL: 1mg/ m^3
CAS# 7487-88-9: Russia-STEL: 2mg/ m^3

Engineering Controls

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Personal Protective Equipment

Eyes Protection: Use chemical safety goggles and/or a full face shield.
Skin Protection: Wear appropriate protective gloves to prevent skin exposure.
Body Protection: Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Respirators Protection: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Other Protection: Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. To maintain good health habits.

Section 9 - Physical and Chemical Properties

Physical State	Flake
Colour	White
Odour	Chlorine taste
pH	No data available
Melting point/freezing point	No data available
Boiling point or initial boiling point and boiling range	No data available
Flash point	Not applicable
Flammability (solid, gas)	No data available
Lower and upper explosion limit/ flammability limit	No data available
Vapour pressure	No data available
Relative vapour density	No data available
Density/Relative density	No data available
Solubility	Soluble,strong oxidizing soluble in water.
Partition coefficient: n-octano/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Kinematic viscosity	No data available
Particle characteristics	No data available

Scetion 10- Stability and Rcactivity

Reactivity No data available
Chemical stability Stable under normal conditions.
Possibility of hazardous reactions

Hazardous Polymerization	Will not occur.
Hazardous Reactions	None under normal processing. The substance decomposes on heating to 200℃, producing toxic and corrosive fumes, causing fire and explosion hazard. The substance is a strong oxidant and reacts violently with combustible and reducing materials. Reacts violently with acids, ammonium compounds, phosphorus, sulfur, sodium dithionate, causing explosion hazard.

Conditions to avoid Incompatible materials. Dust generation, exposure to moist air or water, sources of ignition, excess heat.

Incompatible materials Strong reducing agents, Strong oxidizing agents, acids, Alkali, Amines, Potassium nitrate, Powdered metals, Phosphorus, Sulphur compounds, Zine, Ammonia, Organc ematerials.

Hazardous decomposition products May produce iritating and toxic fumes and gases, Carbon oxides, hydrogen chloride gas, sulphur oxides, metal oxides and so on.

Section 11- Toxicological Information

Information on toxicological ffects

Acute toxicity:

CAS# 7758-19-2:

Oral, mouse: LD50 = 350 mg/kg;

Oral. rat: LD50 = 165 mg/kg:

CAS# 7647-14-5:

Oral, rat: LD50 = 3.000 mg/kg;

Inhalation, rat: LC50> 42.000 mg/m/h;

Derinal, rabbit: LD50> 10.000 mg/kg;

CAS# 497-19-8:

Inhalation, mouse: LC50 = 1200 mg/m^3/ 2H;

inhalation, rat: LC50 = 2300 mg/m^3/2H;

Oral, mouse: LD50 = 6600 mg/kg;

Oral, rat: LD50 = 4090 mg/kg;

CAS# 77-92-9:

Oral, mouse: LD50=5040mg/kg;

Oral, rat: LD50=3mg/kg

Skin corrosion/irritation

CAS# 7758-19-2: Skin - rabbit - Corrosive

CAS# 497-19-8: Skin- rabbit- Mild skin iritation-24 h

Serious eye damage/eye irritation

CAS# 7758-19-2: Eyes - rabbit - Severe eye initation 24 h

CAS# 497-19-8: Eyes - rabbit - Moderate eye iritation-24 h

Respiratory or skin sensitization No data available

Germ cell mutagenicity No data available

Carcinogenicity

Sodium hydrogen sulphate - IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confimned human carcinogen by IARC.

Sodium chlorite - This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC. ACGIH, NTP, or EPA assiti IARC: 3 - Group 3: Not classiable as to its carcinogẹnicity to humans.

Sodium chloride - IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed hunan carcinogen by IARC.

Sodium carbonate - IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Citric acid- IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Magnesium sulfate-IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, poissible or confirmed human carcinogen by IARC.

Reproductive toxicity No data available

Specific target organ toxicity - single exposure No data available

Specifie target organ toxicity - repeated exposure

Sodium chlorite - May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard No data available

Potential Health Effects

Eye: Causes eye burns. Inflammation of the eye is characterized by redness, watering, and itching. Eye contactcan result in corneal damage.

Skin: May be harmful if absorbed through skin. Skin contact can produce inflamation (itching, reddening etc.) and blistering. Prolonged exposure may result in skin burns and ulcerations.

Ingestion: Ingestion is an unlikely route of exposure; no hazard in normal industrial use. May be harmful if swallowed. Causes gastrointestinal tract irritation and burns. Symptoms may include nausea and vomiting. May cause severe and permanent damage to the digestive tract.

Inhalation: Toxic if inhaled. It is destructive to the mucous membranes of the upper respiratory tract. Causes irritation and chemical burns to the respiratory tract with burning pain in the nose and throat, coughing, wheezing, shortness of breath, and pulmonary edema. Inhalation may be fatal as a result of spasm, inflammation, edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Severe over-exposure can result in death.

Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, buming sensation, cough,wheezing. laryngitis, shortness of breath, headache, nausea, vomiting. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information

RTECS#: CAS# 7681-38-1: VZ1860000/ CAS# 7758-19-2: VZ4800000/ CAS# 7647-14-5: VZ4725000/ CAS# 497-19-8: VZ4050000/ CAS#77-92-9: GE7350000/CAS# 7487-88-9: OM4500000

Section 12 - Ecological Informaton

Toxicity

CAS# 7758-19-2: Fish:Cyprinodon variegatus (sheepshead minnow): LC50 =75 mg/l/96 h;
Daphnia: Daphnia magna (Water flea): EC50 = 0.29 mg/l/48 h;

CAS# 7647-14-5: Fish: Lepomis macrochirus: LC50= 1.294,6 mg/l/96 h;
Daphnia: Daphnia magna (Water flea): EC50 =1.661 mg/l/48 h;
CAS# 497-19-8: Fish: Leuciscus idus: LC50 = 440-760 mg/L/96h;
Daphnia: Daphnia magna (Water flea): EC50= 300 mg/l/96h;
CAS# 77-92-9: Fish: Leuciscus idus: LC50=440-760mg/L/48h
Daphnia: Daphnia magna (Water flea): EC50=14mg/L/15min;

Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Results of PBT and vPvB assessment	No data available
Other adverse effects	Do not empty into drains

Section 13 - Disposal Considerations

Waste treatment methods

Waste from Residues / Unused Produets: Chemica waste generators must determine whether a discarded chemical is classified as a hazardous waste. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate cassification.

Contaminated packaging: Contaminated packaging material should be treated equivalent to residual chemical.Clean packaging material should be subjected to waste management schemes (recovery recycling, reuse)according to local legislation.

Section 14- Transport Information

	IATA	IMDG	RID/ADR
Proper shipping name	Corrosive solid, n.o.s. (Disinfectant Tablet)	Corrosive solid, n.o.s. (Disinfectant Tablet)	Corrosive solid, n.o.s. (Disinfectant Tablet)
Hazard class	8	8	8
Un number	UN1759	UN1759	UN1759
Packing group	Ⅱ	Ⅱ	Ⅱ

Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specifi for the substance or mixture

Regulatory information: Reference to the local, national, US, EU, CA and international regulations.

Canada

All the components of this material are listed on Canada's DSL.

US Federal

Toxic Substance Control Act (TSCA)

All the components of this material are listed on the TSCA Inventory.

China

Inventory of Existing Chemical Substances Produced or Imported in China (IECSC)

All the components of this material are listed on the IECSC Inventory.

Section 16 – Additional Information
MSDS Creation Date: Jul 18, 2019

The above information is based on the data of which we are aware and is believed to the correct as of the data hereof. Since this information may be applied under conditions beyond our control and with which may be unfamiliar and since data made available subsequent to the data hereof may suggest modifications of the information, we do not assueme any resposibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Text of H-code(s) mentioned in Section 3

Ox. Sol. 2: Oxidizing solids (Category 2)

Skin Corr. 1B: Skin corrosion (Category 1B)

Acute Tox. 3*: Acute toxicity, Oral (Category 3)

Acute Tox. 2*: Acute toxicity, Inhalation (Category 2)

Acute Tox. 2*: Acute toxicity, Dermal (Category 2)

Aquatic Acute 1: Acute aquatic toxicity (Category 1)

Eye Irit. 2: Eye iritat(ategtor 2)

Eye Dam. 1: Serious eye damage (Category 1)

STOT RE 2: Specific target organ toxicity - Repeated(Category 2)

H272 May intensify fire; oxidiser.

H301 Toxic if swallowed.

H310 Fatal in contact with skin.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

H319 Causes serious eye irrtion.

H330 Fatal if inhaled.

H373 May cause damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

Other Information:

ACGIH:(American Conference of Governmental Industrial Hygienists); CAS:(Chemical Abstracts Service); DSL:(the Domestic Substances List of Canada); EC:(European Commission); IARC: (International Agency for Research on Cancer);IATA:(International Air Transport Association); IMDG: Intemational Maritime Dangerous Goods); ADR: (European Agreement Concerning the International Carriage of Dangerous Goods by Road); RID: (Regulations Concerning the International Carriage of Dangerous Goods by Road); LD50: (Lethal dose, 50 percent kill) ; NDSL: (the Non-domestic Substances List of Canada) ; NIOSH: (US National Institute for Occupational Safety and Health ;NTP:(US National Toxicology Program) ;OSHA: (US Occupational Safety and Health) ; PEL: (Permissible Exposure Level); REL:(Recommended Exposure Limit); RTECS: (Registry of Toxic Effects of Chemical Substances);STEL:(Short Term Exposure Limit) ;TDG: (Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations) ;

TSCA: (Toxic Substances Control Act of USA) ; lECSC: (Inventory of Existing Chemical Substances Produced or Imported in China) ;TWA: (Time Weighted Average) ;TLV: (Threshold Limit Value)