PURIFIC

PURIFIC WATER DISINFECTANT

MATERIAL SAFETY DATA SHEET

July, 2018

Version 2.4

Note: It is important to note that this MSD sheet refers to the mass format handling of the material and does not reflect or refer to the specifications insofar as dosage is concerned.

1. PRODUCT AND COMPANY IDENTIFICATION:

Trade / Product Name:	**Purific Water Sanitizer**
Company Name:	**Purific**
Chemical Name:	**Corrosive solid, acidic, inorganic, N.O.S.**
UN No:	**3260**
ERG No:	**154**
Hazchem Code:	**4we**
EAC:	**0**

2. COMPOSITION:

OXIDIZER/SANITIZER:	**Proprietary blend of various inorganic persulfate salts, Ascorbic acid, Citric acid, Malic acid, Bioflavonoids.**

3. HAZARDS IDENTIFICATION:

- **Could cause minor irritation**
- **Contact with combustible material may cause fire**

4. FIRST AID MEASURES

FIRST AID SKIN	**Remove & isolate contaminated clothing and shoes** **For minor skin contact, avoid spreading material on unaffected skin** **Flush body with plenty of water for at least 20 minutes. Keep warm and quiet.**
FIRST AID EYES	**Flush eyes with water for 20 minutes** **Hold eyelids open while washing.**
FIRST AID INGESTED	**Do not induce vomiting** **Seek medical assistance**
FIRST AID INHALATION	**Move victim to fresh air. If not breathing give artificial respiration** **Do not use mouth-to-mouth, if victim has inhaled or ingested the substance,** **Induce artificial respiration with the aid of a pocket mask with a one-way valve.** **If breathing of victim is difficult administer oxygen. Effects of exposure may be delayed.**

5. FIRE FIGHTING MEASURES

Small Fires: **Dry chemical, CO2 or water spray.**
Large Fires: **Dry chemical, CO2, alcohol-resistant foam or water spray.**
Move containers from fire area if you can do it without risk.
Dike fire control water for later disposal: do not scatter the material.
Fire involving Tanks or Bulk Containers: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Do not get water inside containers. ALWAYS stay away from the ends of tanks.
Cool containers with flooding quantities of water until well after fire is out.
Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
Isolate spill or leak areas immediately for at least 25 to 50 meters (80 to 160 feet) in all directions.
Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate enclosed areas.

5. Fire Fighting Measures Continue

Wear positive pressure self-contained breathing apparatus (SCBA)
Wear chemical protective clothing, which is specifically recommended by the manufacturer.
Structural firefighters protective clothing is recommended for fire situations ONLY; it is not effective in spill situations.
If ROAD OR RAIL TANKER is involved in a fire, ISOLATE for 800 meters (1/2 Mile) in all directions;
Also, consider initial evacuation for 800 meters (1/2 Mile) in all directions.

6. ACCIDENTAL RELEASE MEASURES

General Information:	**Isolate defective containers immediately, if possible and safe to do** **Keep away from heat. Protect from moisture.**
Personal precautionary measures:	**Wear personal protective equipment; see section 8** **Keep unprotected persons at a distance.** **Keep unauthorized persons away.**
Procedure for cleaning / absorption	**Pour into clean dry plastic containers.** **Keep containers open: do not seal hermetically** **Avoid contact with incompatible substances. See section 10.** **Rinse away any residue with plenty of water.** **Dispose of absorbed material in accordance with regulation.** **See section 13.**
Additional information:	**Never return spilled product into its original container for re-use.** **(Risk of decomposition)**

7. HANDLING AND STORAGE

Handling:

Directions for safe handling:	**Avoid contact with impurities, decomposition catalysts,** **Incompatible substances. See section 10** **Wear personal protective equipment. See section 8** **Avoid contact with the eyes, skin and clothing.** **Remove contaminated or saturated clothing.** **Avoid production of dust.** **If dust occurs: wear dust mask and eye protectors** **No eating, drinking, smoking or snuffing tobacco at work.** **Wash face and / or hands before break and end of work.**
Prevention skin protection recommended:	**Do not re-use spilled or soiled product** **Never return spilled product into its original container for re-use** **(Risk of decomposition)**
Additional guidelines:	**Provide for installation of emergency shower and eye bath.** **Production of safety guides and operating instructions.** **(Relating to the workplace)**
Directions on fire and explosion safety:	**Avoid sun rays, heat, heat effect.** **Keep away from combustible material.** **Product itself is not combustible.**
Storage:	**Store in cool and dry place. Protect from sources of heat.**
Requirement for storage rooms:	**Cool, dry, clean, lockable.**
Requirements for containers:	**Use only suitable materials for transportation, storage and handling.**
Suitable materials are:	**Polyvinyl chloride (PVC)** **Polyethylene** **Polypropylene** **Glass** **Ceramics**
	Always close container tightly after removal of product. **Do not keep the container sealed** **Store in a cool and dry place.**
Directions on storing materials together:	**Do not store together with: metallic, salts, alkalis, reducing agents.** **(Risk of decomposition)** **Combustible substances (danger of fire)** **Further information on storage conditions** **See section 15**

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits	**No Exposure Limits Established**
Controls:	**The control measures appropriate for a particular worksite depend on how this material is used and on the extent of exposure.** **The best protection is to enclose operations and / or provide local**

	exhaust ventilation at the site of chemical release. **Use a non-sparking, grounded ventilation system separate from other exhaust ventilation systems. Exhaust directly to the outside.** **Supply sufficient replacement air to make up for air removed.** **Have a safety shower/eye wash fountain readily available in the immediate work area.**
Personal Protection:	**Personal protective equipment.**
Measures for general protection and hygiene:	**Avoid contact with skin and eyes.** **If there is the possibility of skin/eye contact the indicated hand/eye/body protection should be used.** **The workplace related airborne concentrations have to be below the indicated exposure limits.** **If the limits at the workplace are exceeded and/or larger amounts are released (leakage, spillage, dust) the indicated respiratory protection should be used.** **No eating, drinking, smoking or snuffing tobacco at work.** **Wash face and/or hands before break and end of work.** **Preventive skin protection recommended.**
Respiratory protective equipment:	**If dust occurs: wear dust mask** **If necessary, wear nose and mouth mask with P2 particle filter.**
Hand protection	**Wear protective gloves made of the following materials:** **PVC, rubber**
Eye Protection:	**If dust occurs, wear basket shaped glasses.**
Body protection:	**Wear suitable protective clothing** **Avoid contaminating clothes with product.** **Remove contaminated or saturated clothing Wash contaminated clothing immediately with water.**

9. PHYSICAL & CHEMICAL PROPERTIES

White salt, crystalline, free flowing, odourless

Alteration in conditions	
Melting point/range	**not applicable** **>70` decomposition)**
Boiling point/range	**not applicable**
Flashpoint	**not applicable**
Inflammability	**not applicable**
Ignition temperature	**not applicable**
Spontaneous ignition	**not applicable**
Explosion limits	
Dust explosion	**not applicable**
Vapor pressure	**no applicable**
Bulk density	**950 – 1250 kg/m³**
Active oxygen content	**approx. 4.5%**
Solubility	**approx. 250g/l (20°C)** **approx. 330g/l (70°C)**
Medium	**water**
PH value	**approx. 2 (30g/l)**
Medium	**water (25°C)**
Additional information	**oxidizing**

10. STABILITY AND REACTIVITY

Conditions to Avoid	**Product is an oxidizing agent** **Product is stable** **Risk of decomposition when exposed to heat** **Exothermic decomposition at 70ºC** **Product itself is not combustible**
Condition to avoid:	**Avoid sunrays, heat, heat effect and humidity**
Incompatible Materials	**Substances to be avoided** **Impurities, metal ions, metallic salts** **Alkalis, reducing agents – reducing agents (risk of decomposition)** **Combustible substances (danger of fire)** **Dangerous products of decomposition** **Under conditions of thermal decomposition** **Sulphur dioxide (low) and oxygen.**

11. TOXICOLOGICAL INFORMATION

Acute toxicity	**LD/LC 50 values relevant for classification**
Acute oral toxicity	**LD 50 = 1204 mg/kg, rat, literature**
Acute dermal toxicity	**LD 50 > 11000 mg/kg, rabbit, literature**
Acute inhalation toxicity	**LC 50 > 5 mg/1/4h, rat, literature**
Primary irritating effect	**Primary irritating effect to skin: corrosive, rabbit, OECD 404** **Primary irritating effect to the eyes: highly irritating** **, rabbit, literature**
Sensitization	**Maximization test, guinea pig, not sensitizing, OECD 406**
Genotoxicity	**Ames test, salmonella typhimurium, negative, literature**
Sub-acute toxicity	**Rat, inhalative (dust), duration: 2 weeks** **No effect level (NOEL): 0.043mg/l, target organ** **Eye (irritating effect)** **Body weight development negative**
Experiences with human beings	**Irritation and occasion caustic effects to the skin and mucous membranes (eyes, respiratory channels, in the stomach/intestinal tracts after swallowing) are to be expected from local contact.** **Allergic reactions are possible.**

12. ECOLOGICAL INFORMATION

Data on elimination (Persistence and degradability)	**Medium: water/soil** **A biotic degradation because of hydrolysis, reduction**
Behavior in environmental fields	**Under ambient condition quick hydrolysis, decomposition or reduction occurs.** **Hydrolyzed following 5h to 50% (23ºC, pH7)** **The following substances are formed: oxygen and sulphate.**

	Mobility and bioaccumulation potential **Bioaccumulation: none** **Hydrolysis, decomposition, reduction** **The following substances are formed: oxygen, and sulphate.** **Mobility and bioaccumulation potential** **Bioaccumulation: none** **Hydrolysis, decomposition, reduction** **The following substances are formed: oxygen, and sulphate**
Eco-toxic effects	**Aquatic toxicity** **Fish toxicity:** **LC50 (96h) > 32 mg/l <56 mg/l, Brachydanio rerio, OECD 203** **Toxicity to crustaceans:** **Acute water flea toxicity:** **EC 50 (24h) = 5.3 mg/l. Daphnia magna, OECD 202** **Acute water flea toxicity:** **NOEC (24h) = 1.8 mg/l, Daphnia magna OECD 202** **Behavior in water treatment plants:** **Hydrolysis, decomposition, reduction** **The following substances are formed: oxygen and sulphate**
Bacteria toxicity	**Pseudomonas putida, EC 10 (18h) = 108 mg/l** **DEV, DIN 38412, T, 8**
Further ecological information	**Chemical oxygen demand:** **COD value: not applicable (inorganic product)** **Biochemical oxygen demand:** **BOD5 value: not applicable (inorganic product)** **AOX information:** **The product does not contain any organically bonded halogen**

13. DISPOSAL CONSIDERATION

Disposal Method Product	**This product must be disposed of as an inorganic laboratory** **Chemical in accordance with the regulations issued by the appropriate local authorities** **Recommendation** **Return residue and solutions that cannot be re-used to a recognized waste disposal company** **If necessary, contact the relevant authorities**
Disposal Method Packaging	**Recommendation** **Do not re-use empty containers and dispose of in accordance with the regulations issued by the appropriate local authorities** **Take decontaminated packaging to local recycling center** **Recommended cleaning agent: WATER**

14. TRANSPORT INFORMATION

Hazchem Code:	**4we**
EAC	**0**
IMDG-Shipping Name	**CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.**
IMDG Code	**000000**
Marine Pollutant	**No**
Class	**CALSS: 8 Corrosive Group: I/II/III**
Subsidiary Risks	**None**

tony@purific.co.za

Tremcard Number

15. REGULATORY INFORMATION

EEC Hazard Classification	**8**
Risk Phrases	**R 8-22-34**
Safety Phrases	**S-Phrases**
	S 26-36/37/39-45
	In case of contact with eyes, rinse immediately with plenty of water seek medical advice **Wear suitable protective clothing, gloves and eye/face protection** **In case of accident or if you feel unwell, seek medical advice immediately** **(show the label where possible)**
	If substance is freely available (public product), the following additional **Safety advice is required:** **S ½**
National Legislation	**Keep locked up and out of reach of children**

16. OTHER INFORMATION

Further information on properties and safe handling of product can be obtained from the Owner:

tony@purific.co.za
Tony Schlebusch
+27 84 382 8113

The information contained herein based on the present state of our knowledge
It characterizes the product with regard to the appropriate safety precautions.
It does not represent a guarantee of the properness of the product.