

I. Product and Company Identification

1.1 Identification of the substance or preparation:

PURIFICO S.P.™

1.2 Company Identification: Odour Control Systems Limited
33A Castle Close,
Hawarden Industrial Park
Manor Lane,
Hawarden,
Deeside.
CH5 3PP.
Tel: 01244 536700 Fax: 01244 535184

II. Composition/Information on Ingredients

- 2.1 Chemical Composition: Preparation of Aqueous solution of stabilised buffered chlorine dioxide.
Inert ingredients.
Water
- 2.2 Risk Phrases: R8 - Contact with combustible materials may cause fire.
R22 - Harmful if swallowed
R32 - Contact with acids liberates very toxic gas.
- 2.3 Classification/Symbol: O - Oxidising
XN - Harmful

III. Hazards Identification

Adverse health effects

Mildly irritating to eyes, irritating to skin.
Harmful if swallowed.

Environmental effects

Toxic to aquatic organisms.

Physical and chemical

In contact with acids or when heated or under sunlight, may develop very toxic gas (chlorine dioxide) which may cause risk of explosion.
Contact with combustible materials (grease, fats, wood, cellulose, paper, etc) may cause fire.
Contact with reducing agents and sulphur containing substances causes violent exothermic reaction.

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IV. First Aid Measures

- 4.1 Eye contact: Immediately flush eyes with water for at least 15 minutes. Seek medical advice if symptoms persist.
- 4.2 Skin contact: Remove contaminated clothing and wash affected areas with soap & water. Soak contaminated clothing with water to prevent fire risk. Seek medical attention if irritation develops and persists.
- 4.3 Inhalation: Remove to fresh air. Seek medical attention. (If the patient is affected by activated fumes of chlorine dioxide, this requires urgent medical attention).
- 4.4 Ingestion: Rinse mouth with water and give water or milk to drink. Seek urgent medical attention if symptoms persist.

V. Fire Fighting Measures

- 5.1 Special fire/explosion hazard May decompose in fire producing toxic chlorine compounds. Strong oxidising agent will assist combustion. Risk of drums bursting.
- 5.2 Products of combustion Not combustible. Toxic chlorine compounds released in fire.
- 5.3 Fire Fighting procedures/ Wear S.C.B.A. for chlorine/Extinguishing media chlorine dioxide. Keep containers cool with water spray. Avoid dispersion in the water courses. Do not use carbon dioxide or organic material. In case of spreading avoid drying by dilution with plenty of water.

VI. Accidental Release Measures

- 6.1 Personal protection Wear goggles giving complete protection to eyes. Plastic (not rubber) gloves and boots. Eyewash facilities should be available.
- 6.2 Environmental precautions Do not allow to dry. If possible drench with water. Contain with inert material. Pump into a suitable container or otherwise absorb in sand. Do not absorb in sawdust or other combustible materials. If substance has entered a water course or sewer or contaminated soil or vegetation, advise police.
- 6.3 Methods of cleaning up: Flush away any residues with excess water.

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VII. Handling And Storage

- 7.1 Precautions during handling:
Technical measures Ventilation of the place, local exhaust of dust or vapours (in case of product decomposition).
- Precautions Avoid contact with eyes and skin and breathing of activated chlorine dioxide vapours. Wear personal protective equipment, maintain eye washer shower facilities and source of running water in the vicinity.
- Safe handling advice Handle product with care and avoid contamination.
- 7.2 Precautions during storage:
Storage conditions Store in a cool, clean, well ventilated area.
Do not store on wooden surfaces or flammable pallets.
Keep away from incompatible and combustible materials (especially acids), from direct sunlight and heating sources.
Provide water facilities, do not let any spilt product dry.
- 7.3 Packaging materials: Do not use common steel, aluminium, copper and its alloys, rubber.
Use stainless steel, glass, ceramics, polyethylene, PVC.

VIII. Exposure Controls/Personal Protection

- 8.1 Special protective measures
Respiratory: Ensure working room air concentrations are less than 0.1 ppm chlorine dioxide gas S.C.B.A. when chlorine dioxide gas is evolved.
- Hand: Plastic gloves.
- Eye: Goggles.
- Skin: Work suit preferable made of PVC, Neoprene, nitrile rubber.
Avoid leather, cotton or natural rubber due to fire risk.
- Exposure limits: For chlorine dioxide gas:-
ppm (0.3 mg/cu.m).
0.3 ppm (0.9 mg/cu.m). STEL.

IX. Physical and Chemical Properties

- 9.1 Physical State: Pale yellow-green solution
- 9.2 Odour: Ozone like
- 9.3 Temperature Characteristics: Boiling point :< 214 deg F. Freezing point :< minus 4 deg C.
- 9.4 pH: 8.8 - 9.3
- 9.5 Solubility:
In water Completely miscible
In solvents Not soluble
- 9.6 Vapour pressure: Similar to water
- 9.7 Density: 1.14 - 1.16
- 9.8 Flammability: Not combustible
Flash point
Autoignition temperature
Flammable limited

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X. Stability and Reactivity

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| 10.1 Stability | Min. 6 months in unopened containers |
| 10.2 Conditions/materials to avoid | Avoid exposure to direct sunlight and heat. Decomposed by heating, acids and organic and combustible matter. |
| 10.3 Decomposition temperature | May decompose to produce chlorine and dangerous products dioxide gas which can cause released overpressure and burst in confined spaces. Toxic chlorine compounds may be released. |

XI. Toxicological Information

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| 11.1 Acute toxicity: | LD50 orl.rat (by feeding-m/f): 2.5 gm kg. Category III LD50 dermal.rbt : => no dermal irritation on prolonged contact. |
| 11.2 Local effects | Skin contact : not irritating (patch test, rabbit, 4h)
Eyes : mild irritant to eyes (Draiza test rabbit). |
| 11.3 Sensitisation: | No data. |
| 11.4 Chronic Toxicity: | Acute, subacute and chronic (organs & systems) effects.
Acute subacute and chronic toxicity tests in mice by oral feeding were performed with 5% stabilised chlorine dioxide in several dilutions.
Conclusions:
A) Undiluted 5% stabilised chlorine dioxide was toxic to mice when fed 0.5ml directly from gavage.
B) Dilutions ranging from 1:10 to 1:240 were found to be non toxic when fed by stomach trocar.
C) Chronic feeding tests by gavage and in drinking water of 5% stabilised chlorine dioxide solution was non-toxic. |
| 11.5 Long term toxicity: | Carcinogenicity ; No carcinogenic potential. |
| 11.6 Experience in humans: | No significant effect after application in drinking water for up to 12 weeks. Continued inhalation of decomposition products may cause lung oedema. |

XII. Biological Information

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| 12.1 Mobility | Will disperse through aqueous systems. |
| 12.2 Persistence and Degradability | Will degrade. |
| 12.3 Bioaccumulative potential: | Not known. |

XIII. Disposal Considerations

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| 13.1 Disposal of product: | Dispose of through approved waste disposals operatives. |
| 13.2 Disposal of packaging: | Rinse empty containers thoroughly before disposal. |

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XIV. Transport Information

- 14.1 UN No: 3139.
- 14.2 UK Road:
Hazchem code:
Classification: Harmful substance
Packing group: II
- 14.3 Spillage: Larger than 25 litres, decontaminate with sodium sulphate solution with a contact time of at least 10 mins, then dilute with water & flush to foul drain.

XV. Regulatory Information

- 15.1 The chemicals (Hazard Information and Packaging for Supply) Regulations 1994:
EINECS No: 231-836-6
Index No: Not Listed
Risk Phrases: R8 - Contact with combustible materials may cause fire
R22 - Harmful if swallowed
R32 - Contact with acids liberates very toxic gas
Safety phrases: S14 - Keep away from acids
S17 - Keep away from combustible materials
S36/ - Wear suitable protective
37/39 clothing, gloves and eye/face protection.
Classification Symbols: O - Oxidizer
Xn - Harmful
- 15.2 Exposure Limits: For chlorine dioxide gas:-
0.1 ppm (0.3 mg/cu.m).
0.2 ppm (0.9 mg/cu.m). STEL.

XVI. Other Information

- 17.1 Recommended uses: Industrial Odour Control Compound and Biocide.

This information is given in good faith and is based on information and tests believed to be reliable. The suitability of this product for any particular use is not suggested or implied. This document is not a specification and properties shown are not guaranteed.

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Always READ material safety data sheet before use.

preserving the environment

Odour Control Systems Ltd
33a Castle Close, Manor Lane
Hawarden Industrial Park
Hawarden, Flintshire CH5 3QX

Phone: +44 (0)1244 536700
Fax: +44 (0)1244 535184
E-mail: mail@odourcontrolsystems.ltd.uk
Web: www.odourcontrolsystems.ltd.uk



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