

BBC Biochemical

MATERIAL SAFETY DATA SHEET

Section 1. Chemical Product and Company Information

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| Common Name: Hydrogen Peroxide 30% | Code: DI0505005, DI0505002 |
| Supplier: BBC Biochemical | MSDS#: DI0505005, DI0505002 |
| Synonym: Peroxide, Hydrogen dioxide, Carbamide Peroxide, Urea Peroxide | Validation Date: 9-1-07 |
| Trade Name: Not Available | Print Date: 9-1-07 |
| Material Uses: Not Available | Responsible Name: Dr. B |
| Manufacturer: BBC Biochemical PO Box 1320 409 Eleanor Lane Mount Vernon, WA 98273 1-800-635-4477 | In Case of Emergency: 1-800-424-9300 Chemtrec USA 1-202-483-7616 Chemtrec Intrl 1-800-635-4477 |

Section 2. Composition and Information on Ingredients

| Name | CAS# | % by Weight | Exposure Limits |
|----------------------|-----------|-------------|-------------------|
| 1) Hydrogen Peroxide | 7722-84-1 | 20-40 | OSHA PEL 1ppm TWA |
| 2) Water | 7732-18-5 | 60-80 | |

Section 3. Hazards Identification

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| Physical State and Appearance | Clear, colorless liquid. |
| Emergency Overview | Danger, strong oxidizer. Contact with other material may cause a fire. Eye contact may result in permanent eye damage. Corrosive. Causes eye and skin irritation and possible burns. May be harmful if swallowed. May cause severe respiratory tract irritation with possible burns. May cause severe digestive tract irritation with possible burns. May cause blood abnormalities. Light sensitive. May cause central nervous system effects. |
| Routes of Entry | May be harmful by inhalation, ingestion or skin absorption. |
| Potential Acute Health Effects | |
| Eyes | Very hazardous in case of eye contact, corrosive causes severe burns. May cause corneal damage. |
| Skin | Very hazardous in case of skin contact. Causes severe irritation and possible burns. |
| Inhalation | Very hazardous in case of inhalation. Causes chemical burns to the respiratory tract. |
| Ingestion | Very hazardous in case of ingestion. Causes irritation with nausea, vomiting and diarrhea. May cause damage to red blood cells. Causes gastrointestinal tract burns. Ingestion may result in irritation of the esophagus, bleeding of the stomach and ulcer formation. |
| Potential Chronic Health Effects | Prolonged or repeated skin contact may cause dermatitis. Laboratory experiments have resulted in mutagenic effects. Repeated contact may cause cornea damage. |
| Medical Conditions Aggravated by Overexposure | Repeated or prolonged exposure is not known to aggravate medical condition. |
| Overexposure/ Signs/Symptoms | Loss of appetite, inability to concentrate. Headache, irritation of eyes, nose, throat. |

Section 4. First Aid Measures

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| Eye Contact | Immediately flush eyes with copious amounts of water for at least 15 minutes. |
| Skin Contact | Immediately wash skin with soap and copious amounts of water. |
| Inhalation | Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen. |
| Ingestion | Wash out mouth with water provided person is conscious. Loosen clothing such as a collar, tie, belt or waistband. Do Not induce vomiting. Provided person is conscious, have victim drink several glasses of water or milk. |
| Notes to Physician | Not available. |

Section 5. Fire Fighting Measures

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| Flammability of the Product | Noncombustible. |
| Auto-ignition Temperature | Noncombustible |
| Flash Points | Not available. |

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| Flammable Limits | Not available. |
| Products of Combustion | These products are carbon oxides (CO, CO ₂), nitrogen oxides (NO, NO ₂ ...), sulfur oxides (SO ₂ , SO ₃ ...). Some metallic oxides. |
| Fire Hazards in Presence Of Various Substances | Not available. |
| Explosion Hazards in Presence of Various Substances | Vapor may travel considerable distance to source of ignition and flash back. |
| Fire Fighting Media and Instructions | Use water only! Do NOT use carbon dioxide. Do NOT use dry chemical. Do NOT get water inside containers. Contact professional fire-fighters immediately. Cool containers with flooding quantities of water until well after fire is out. For large fires, flood fire area with large quantities of water, while knocking down vapors with water fog. |
| Protective Clothing (Fire) | Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. |
| Special Remarks on Fire Hazards | Emits toxic fumes under fire conditions. |
| Special Remarks on Explosion Hazards | Vapor may travel considerable distance to source of ignition and flash back. |

Section 6. Accidental Release Measures

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| Small Spill and Leak | Evacuate area. Shut off all sources of ignition. Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. |
| Large Spill and Leak | Evacuate area. Shut off all sources of ignition. Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete. |

Section 7, Handling and Storage

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| Handling | Avoid prolonged exposure or repeated exposure. See section 8. |
| Storage | Keep away from heat, sparks, and open flame. Store in a cool dry place. |

Section 8. Exposure Controls / Personal Protection

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| Engineering Controls | Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location. |
| Personal Protection | |
| Eyes | Safety goggles required. |
| Body | Protective clothing advised. Lab coat. |
| Respiratory | Wear appropriate NIOSH/MSHA-approved respirator. |
| Hands | Chemical resistant gloves. |
| Feet | Rubber boots advised. |
| Personal Protection in Case of a Large Spill | Same as above. |
| Product Name | Exposure Limits |
| 1) Hydrogen Peroxide 30% | ACGIH- 1ppm TWA NIOSH- 1ppm TWA OSHA- PEL 1ppm TWA |
| Consult Local authorities before acceptable exposure limits. | |

Section 9. Physical and Chemical Properties

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| Physical State and Appearance | Colorless liquid | Odor: | Slight acid odor |
| Molecular Weight | Not available. | Taste: | Not available. |
| Molecular Formula | Not available. | Color: | colorless |
| pH | 3.3 (30% Solution) | | |
| Boiling/Condensation Point | 108 deg C @ 760 mmHg | | |
| Melting/Freezing Point | -33 deg C | | |
| Critical Temperature | Not applicable. | | |
| Specific Gravity | 1.1-1.2 (30-50%) | | |
| Vapor Pressure | 23 mm Hg @ 30C | | |
| Vapor Density | 1.10 | | |
| Volatility | Not applicable. | | |
| Odor Threshold | Not available. | | |
| Evaporation Rate | >1.0 (Butyl acetate=1) | | |
| VOC | Not available. | | |
| Viscosity | 1.25 cP | | |
| Ionicity (in water) | Not available. | | |

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| Dispersion Properties | Not available. |
| Solubility | Miscible in water. |
| Physical Chemical Comments | Not available. |

Section 10. Stability and Reactivity

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| Stability and Reactivity | Decomposes slowly to release oxygen. Unstable when heated or contaminated with heavy metals, reducing agents, rust, dirt or organic materials. Stability is reduced when pH is above 4.0. |
| Conditions of Instability | Mechanical shock, incompatible materials, light, ignition sources, dust generation, excess heat, combustible materials, reducing agents, alkaline materials, strong oxidants, rust, dust, pH > 4.0. |
| Incompatibility with Various Substances | Strong oxidizing agents, strong reducing agents, acetic acid, acetic anhydride, alcohols, brass, copper, copper alloys, finely powdered metals, galvanized iron, hydrazine, iron, magnesium, nitric acid, sodium carbonate, potassium permanganate, cyanides (e.g. potassium cyanide, sodium cyanide), ethers (e.g. dioxane, furfuran, tetrahydrofuran (THF)), urea, chlorosulfonic acid, alkalies, lead, nitrogen compounds, triethylamine, silver, nickel, palladium, organic matter, charcoal, sodium borate, aniline, platinum, formic acid, cyclopentadiene, activated carbon, tert-butyl alcohol, hydrogen selenide, manganese dioxide, mercurous chloride, rust, ketones, carboxylic acids, glycerine, sodium fluoride, sodium pyrophosphate, soluble fuels (acetone, ethanol, glycerol), wood, wood, asbestos, hexavalent chromium compounds, salts of iron, copper, chromium, vanadium, tungsten, molybdeum, and platinum. |
| Hazardous Decomposition Products | Oxygen, hydrogen gas, water, heat, steam. |
| Hazardous Polymerization | Will not occur. |

Section 11. Toxicological Information

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| Toxicity to Animals | LD50/LC50: CAS# 7722-84-1: Draize test, rabbit, eye: 1 mg Severe; Inhalation, rat: LC50 = 2 gm/m ³ /4H; Inhalation, rat: LC50 = 2000 mg/m ³ ; Oral, mouse: LD50 = 2000 mg/kg; Oral, rabbit: LD50 = 820 mg/kg; Oral, rat: LD50 = 1518 mg/kg; Oral, rat: LD50 = 910 mg/kg; Oral, rat: LD50 = 376 mg/kg; Oral, rat: LD50 = 4050 mg/kg; Skin, rat: LD50 = 3 gm/kg; Skin, rat: LD50 = 4060 mg/kg; |
| Chronic Effects on Humans | May be harmful by inhalation, ingestion, or skin absorption. |
| Other Toxic Effects on Humans | To the best of our knowledge, the chemical, physical, and toxicological properties have not be thoroughly investigated. |
| Special Remarks on Toxicity to Animals | Not available. |
| Special Remarks on Chronic Effects on Humans | Not available. |
| Special Remarks on Other Toxic Effects on Humans | CAS#: 7722-84-1 Mutation in Microorganisms: Salmonella typhimurium = 100 ug/plate.; Hyman, embryo = 50 umol/L.; Cytogenetic Analysis: Human, embryo = 20 umol/L. Mutation in Mammalian Somatic Cells: Hamster, lung = 1mmol/L. |

Section 12. Ecological Information

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| Ecotoxicity | Fish: Carp: LC50 = 42 mg/L; 48 Hr; Unspecified Fish: Fathead Minnow: LC50 = 16.4 mg/L; 96 Hr; Fresh water Fish: Fathead Minnow: NOEC = 5 mg/L; 96 Hr; Fresh water Water flea Daphnia: EC50 = 2.4 mg/L; 48 Hr; Fresh water Fish: Channel catfish: LC50 = 37.4 mg/L; 96 Hr; Fresh water No data available. |
| BODS and COD | Not available. |
| Biodegradable/OEDC | Not available. |
| Mobility | Not available. |
| Toxicity of the Products of Biodegradation | The product itself and its products of degradation are not toxic. |
| Special Remarks on The Products of Biodegradation | Not available. |

Section 13. Disposal Considerations

Waste Information Not available.

Waste Stream Not available.

Consult your local or regional authorities.

Section 14. Transport Information

DOT Classification Hydrogen Peroxide, Aqueous Solutions
Hazard Class 5.1
UN2014
Packing Group II

Marine Pollutant Not available.

Hazardous Substances Reportable Quantity Not available.

Special Provisions for Transport Not applicable.

TDG Classification Not available

ADR/RID Classification Not available

IMO/IMDG Classification Not available

ICAO/IATA Classification Not available

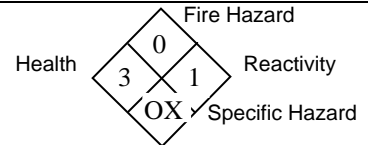
Section 15. Other Information

Label requirements HIGHLY FLAMMABLE LIQUID AND VAPOR, VAPOR MAY CAUSE FLASH FIRE. CONTAINS MATERIAL WHICH MAY CAUSE BLOOD, NERVOUS SYSTEM, REPRODUCTIVE SYSTEM, LIVER, RESPIRATORY TRACT, SKIN, EYES DAMAGE.

Hazardous Material Information System (U.S.A.)

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| Health | 3 |
| Fire Hazard | 0 |
| Reactivity | 1 |
| Personal Protection | a |

National Fire Protection Association (U.S.A.)



References

Other Special Considerations

Notice to Reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.