

BINARY IONIZATION TECHNOLOGY® (BIT™) PLUS

Safety Data Sheet

SECTION 1: IDENTIFICATION

Trade Names:

- Binary Ionization Technology®
- Binary Ionization Technology® (BIT™) Plus
- BIT™
- BIT™ Solution Ready-To-Use Hydrogen peroxide <8%
- SteraMist™ BIT™

Intended Use:

For use as a **Bacterial, Bacterial Spore, Viral, Mold Spore and Biological/Chemical Decontaminant** in healthcare, industrial, commercial, hospitality, and institutional settings (including production operations in pharmaceutical manufacturing including clean rooms, tissue labs, laboratories, animal research facilities, hotels rooms, cruise ships, and recreational facilities).

Details of the Supplier of the Safety Data Sheet

This Safety Data Sheet has been prepared in accordance with Regulation CLP Regulation (EC) No 1272/2008 and REACH Regulation (EC) No 1907/2006

Manufacturer/ Supplier:

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Emergency Telephone Numbers:

CHEMTREC (US): +1 800.424.9300 | +1 703.527.3887

POISON CONTROL: +1 800.222.1222

National emergency phone numbers:

Spain: Servicio de Información Toxicológica: +34 91 562 04 20

For other member states: <http://echa.europa.eu/web/guest/support/helpdesks/national-helpdesks/list-of-national-helpdesks>

SECTION 2: HAZARD(S) IDENTIFICATION

Classification according to Regulation (EC) No 1272/2008

Skin Irrit. 2 **H315** Causes skin irritation
Eye Dam. 1 **H318** Causes serious eye damage

Labelling according to Regulation (EC) No 1272/2008

Pictogram:



Signal Word: **Danger**

Hazard Statements:

- H302** Harmful if swallowed
- H315** Causes skin irritation
- H318** Causes serious eye damage
- H336** May cause drowsiness or dizziness

Precautionary Statements:

- P264** Wash hands, forearms and face thoroughly after handling
- P270** Do not eat, drink or smoke when using this product
- P280** Wear protective gloves/protective clothing/eye protection/face protection
- P301 + P310** If SWALLOWED: Immediately call a POISON CENTRE or doctor/physician
- P302 + P352** If on skin: Wash with plenty of water
- P305 + P351 + P338** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

For full list of precautionary statements see section 16

Note: This document has been prepared in accordance with standards for workplace safety, which require the inclusion of all known hazards of the product or its ingredients regardless of the potential risk. The precautionary statements and warnings included may not apply in all cases. Your needs may vary depending upon the potential for exposure in your workplace.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Weight %	EINECS	Classification according to Regulation (EC) No 1272/2008
Hydrogen peroxide	7722-84-1	<8	231-765-0	H302, H318
Propan-2-ol	67-63-0	<5	200-661-7	H225, H319, H336

The Full Text for all EU Classification and EU Risk Phrases is Displayed in Section 16. In accordance with 29 CFR 1910.1200(i), the specific chemical identity and/or percentage of composition of certain ingredients are being withheld as a trade secret.

SECTION 4: FIRST-AID MEASURES

- **Eyes:**
 - Hold eye open and rinse slowly and gently with water for 15-20 minutes.
 - Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
 - Call a Poison Control Center or doctor for treatment advice.

- **Skin:**
 - Take off contaminated clothing.
 - Rinse skin immediately with plenty of water for 15-20 minutes.
 - Call a Poison Control Center or doctor for treatment advice.

- **Ingestion:**
 - Rinse mouth with water.
 - Dilute by giving 1 or 2 glasses of water. Do not induce vomiting.
 - See a medical doctor immediately.
- **Inhalation:**
 - Remove to fresh air.
 - Consult doctor in case of symptoms.
- **Notes to Medical Doctor:**
 - Direct contact may be minimally irritating.
 - Treatment is by dilution and is symptomatic and supportive.

SECTION 5: FIRE FIGHTING MEASURES

- **Suitable Extinguishing Media:** Noncombustible - flood with water or agent suitable to environment.
- **Fire Fighting Procedures:** Any tank or container surrounded by fire should be flooded with water for cooling. Wear full protective clothing and self-contained breathing apparatus.

SECTION 6: ACCIDENTAL RELEASE MEASURES

- **Person-related Safety Precautions:** Wear protective equipment. Keep unprotected persons away when applying.
- **Measures for Environmental Protection:** Do not allow product to reach sewage system or water bodies.
- **Measures for Cleaning/Collecting:** Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust) or wipe with towel.
- **Additional Information:** No dangerous materials are released.

SECTION 7: HANDLING AND STORAGE

This section provides guidance on the safe handling practices and conditions for safe storage of chemicals. The required information consists of:

- **Handling**
 - Information for safe handling: No special measures required.
 - Information about protection against explosions and fires: No special measures required.
- **Storage**
 - Requirements to be met by storerooms and containers: No special requirements.
 - Information about storage in one common storage facility: Store away from foodstuffs.
 - Further information about storage conditions: Do not store in direct sunlight.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

- **Personal Protective Equipment (general)**
 - General protective and hygienic measures: The usual precautionary measures for handling chemicals should be adhered to.
 - Breathing equipment: See below.
 - Protection of hands: See below.
 - Penetration time of glove material: The exact break through time will vary by manufacturer.

- Please refer to glove manufacturer data.
- **Eye protection:** Safety glasses recommended during refilling.
- **Handling BIT™ Solution:** long-sleeved shirt and long pants; socks and chemical resistant footwear; goggles safety or glasses with side shields, or face shield; chemical-resistant gloves such as barrier laminate, butyl rubber, nitrile, neoprene rubber, polyvinyl chloride, or Viton.
- **Handheld Unit Application:** Where airborne hydrogen peroxide concentrations are expected to exceed 1 ppm, air-purifying respirator with a full-face piece or hood in combination with an air-purifying cartridge recommended by the manufacturer specifically for hydrogen peroxide use.

● **Exposure Limits/ Components with Limit Values that Require Monitoring at the Workplace**

Chemical Name	CAS No	Value	Control Parameters	Basis
Hydrogen peroxide	7722-84-1	TWA	1 ppm 1.4 mg/m3	UK. EH40 WEL – Workplace Exposure Limits
Hydrogen peroxide	7722-84-1	STEL	2 ppm 2.8 mg/m3	UK EH40 WEL – Workplace Exposure Limits

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

MIXTURE (the following mixture data are for 5% Hydrogen Peroxide):

- **Appearance:** Clear, colorless liquid
- **Odor:** Odorless
- **pH:** 2.0 to 4.0
- **Freezing Point:** -3°C (27°F)
- **Boiling Point:** 101°C (214°F)
- **Flash Point and Method:** Noncombustible
- **Flammable Limits:** Noncombustible
- **Fire/Explosion Hazards:** Product is non-combustible. On decomposition releases oxygen which may intensify fire.
- **Vapor Pressure:** 31 mm Hg @ 30°C (86°F)
- **Vapor Density:** No data available
- **Solubility in Water:** 100%

- **Evaporation Rate:** > 1 (Butyl acetate = 1)
- **Specific Gravity:** 1.01 @ 20°C (68°F) (H2O = 1)
- **% Volatile:** 100%
- **Auto-ignition Temperature:** Noncombustible
- **Hazardous Decomposition Products:** Oxygen, which supports combustion
- **Sensitivity to Static Discharge:** No data available
- **Sensitivity to Impact:** No data available

HYDROGENPEROXIDE:

- **Molecular Formula:** H2-O2
- **Molecular Weight:** 34.01 g/mole
- **pH:** Weak acid; H2O2 concentration weight % = 35, 50, 70,90; corresponding true pH: 4.6, 4.3, 4.4,5.1

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- **Specific Gravity:** 1.4425 @ 25°C (77°F)
- **Melting Point:** -0.43°C (31°F)
- **Boiling Point:** 152°C (305.5°F)
- **Vapor Pressure:** 1.97 mm Hg @ 25°C (77°F)
- **Solubility:** Miscible with water; soluble in ether; insoluble in petroleum ether, soluble in alcohol.
- **Viscosity:** 1.245 cP (liquid)

SECTION 10: STABILITY AND REACTIVITY

- **Thermal decomposition/ conditions to be avoided:**
 - No decomposition if used and stored according to specifications.
- **Dangerous products of decomposition:** Possible in traces.

SECTION 11: TOXICOLOGICAL INFORMATION

MIXTURE (the following mixture data are for BITTM Hydrogen Peroxide 7.5% Ready-To-Use):

- **Eye Effects:** Corrosive irritant (rabbit)
- **Skin Effects:** Mild or slightly irritating after 14 days (rabbit); No perceptible reaction (guinea pig)
- **Dermal LD50:** > 2,000 mg/kg (rabbit)
- **Oral LD50:** > 5,000 mg/kg (rat)
- **Inhalation LC50:** > 2.77 mg/L (rat)

HYDROGEN PEROXIDE:

- **Eye Effects:** 5% hydrogen peroxide: Minimally irritating (rabbit) [FMC Study Number: I86-0949]
- **Skin Effects:** 10% hydrogen peroxide: Mildly irritating after 4-hour exposure (rabbit) [FMC Study Number: I89-1078]
- **Dermal LD50:** 35% hydrogen peroxide: > 2,000 mg/kg (rabbit) [FMC Study Number: I83-746]
- **Oral LD50:** 10% hydrogen peroxide: > 5,000 mg/kg (rat) [FMC Study Number: I89-1077]
- **Inhalation LC50:** 50% hydrogen peroxide: > 0.17 mg/L (rat) [FMC Study Number: I89-1080]
- **Acute Effects from Overexposure:** Minimally irritating to the eyes, skin, nose, throat, and lungs.
- **Chronic Effects from Overexposure:** The International Agency for Research on Cancer (IARC) has concluded that there is inadequate evidence for carcinogenicity of hydrogen peroxide in humans, but limited evidence in experimental animals (Group 3 - not classifiable as to its carcinogenicity to humans). The American Conference of Governmental Industrial Hygienists (ACGIH) has concluded that hydrogen peroxide is a 'Confirmed Animal Carcinogen with Unknown Relevance to Humans' (A3).
- **Carcinogenicity:** ACGIH Listed (A3, Animal carcinogen)

SECTION 12: ECOLOGICAL INFORMATION (NON-MANDATORY)

ECOTOXICOLOGICAL INFORMATION (Data from toxicity tests - **7722-84-1 hydrogen peroxide solution**):

- Channel catfish 96-hour LC50 = 37.4 mg/L
- Fathead minnow 96-hour LC50 = 16.4 mg/L
- Daphnia magna 24-hour EC50 = 7.7 mg/L
- Daphnia pulex 48-hour LC50 = 2.4 mg/L
- Freshwater snail 96-hour LC50 = 17.7 mg/L
- For more information refer to ECETOC "Joint Assessment of Commodity Chemicals No. 22, Hydrogen Peroxide." ISSN-0773-6339, January 1993

CHEMICAL FATE INFORMATION: Hydrogen peroxide in the aquatic environment is subject to various reduction or oxidation processes and decomposes into water and oxygen. Degrades in the atmosphere within the light spectrum with hydroxyl radicals in the gas phase and subsequent photolysis.

SECTION 13: DISPOSAL CONSIDERATIONS (NON-MANDATORY)

Product:

- Recommendation: Smaller quantities can be disposed with household garbage.

Uncleaned Packaging:

- Recommendation: Disposal must be made in accordance with applicable local regulations.
- Recommended cleaning agent: Water

SECTION 14: TRANSPORT INFORMATION (NON-MANDATORY)

The following refers to all modes of transportation unless specified below.

- Not regulated for transport under USDOT, EUADR, IATA, ICAO, or IMDG regulations.

SECTION 15: REGULATORY INFORMATION (NON-MANDATORY)

OSHA Label:

- Non-hazardous in accordance with international standards for workplace safety.

SECTION 16: OTHER INFORMATION

Hazard Statements:

- H315** Causes skin irritation
H318 Causes serious eye damage
H336 May cause drowsiness or dizziness

Precautionary Statements:

- P261** Avoid breathing fumes/vapors/spray
P264 Wash hands, forearms and face thoroughly after handling
P270 Do not eat, drink or smoke when using this product
P280 Wear protective gloves/protective clothing/eye protection/face protection

- P301 + P310** If SWALLOWED: Immediately call a POISON CENTRE or doctor/physician
P302 + P352 If on skin: Wash with plenty of water
P304 + P340 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.
P321 Specific treatment (see supplemental first aid instruction on this label)
P332 + P313 If skin irritation occurs: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.
P403 + P233 Store in a well ventilated place. Keep cool.
P405 Store locked up
P501 Dispose of contents/container to local/regional/national/international regulations

Protection = H (Safety goggles, gloves, apron, the use of a supplied air or SCBA respirator is required in lieu of a vapor cartridge respirator)

NFPA = National Fire Protection Association (During Application)

Health 0 = Insignificant

Flammability 0 = Insignificant

Reactivity 0 = Insignificant

Special None No special requirements

Revision Summary:

This SDS was generated July 2016. The above data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. TOMI[™] Environmental, Inc. believes that the information contained in this Safety Data Sheet is accurate, and, while it is provided in good faith, it is without a warranty of any kind, expressed or implied.

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