

Material Safety Data Sheet-Shock ClO₂



Alpha Tech Pet, Inc.

Your Animal Care Specialist

789 Massachusetts Avenue

Lexington, Massachusetts 02420

1.) PRODUCT CHEMICAL AND COMPANY IDENTIFICATION

Last Revision: 2/1/2009
Product Name: **KennelSol APS Shock ClO₂**
Synonyms: Solid Release Chlorine Dioxide
Chemical Name: Chlorine Dioxide (ClO₂); Dry Impregnate Precursors (Sodium Chlorite {Part A} & Ferric Chloride {Part B})
Product Application: Gas Release Broad Spectrum Application
Company Name: Alpha Tech Pet, Inc.
789 Massachusetts Avenue
Lexington, MA 02420

2.) PRODUCT COMPONENT/ COMPOSITION INFORMATION

<u>CHEMICAL NAME</u>	<u>PROPRIETARY</u>	<u>CAS NUMBER</u>	<u>WT. %</u>	<u>HAZARDOUS</u>
Part A Sodium Chlorite (impregnate)	YES	7758-19-2*	10%	NO*
Part B Ferric Chloride (impregnate)	YES	10025-77-1*	40%	NO*
COMPONENT C Zeolite	NO	12113-10-3*	70%	NO

According to 29 CFR 1910:1200 the identity and specific formulation of components has been withheld as CONFIDENTIAL and TRADE SECRET. Parts A & B shall be consistent formulation ingredients. Compound derivations thereof, are included in the formulation independently or in combination as integrated activation control substances.

*CAS numbers and derivative percentage weights are shown for the pre-processed materials. "Non-Hazardous" designation is pertinent to the manufactured impregnate since the components are not separable when shipped. The components as employed in their impregnated state are non-hazardous. Safety and handling procedures for Parts A & B should be considered as the same, unless otherwise noted. Individual MSDS' for the preprocessed material ingredients are available on request.

3.) HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance: (Components, Parts A&B) Granular white or off-white powder, solid crystalline structure
Properties: Strong oxidizer, 98% soluble in water
Odor: Slight chlorine odor

POTENTIAL HEALTH EFFECTS

INGESTION: **DANGER**, harmful if swallowed. May cause all of the following symptoms: nausea, vomiting, diarrhea or ulceration. Ingestion of large amounts may cause anemia and/or cardiovascular distress.

INHALATION: Respiratory and/or gastro-intestinal irritant, inhalation may cause irritation of the mucous membranes and respiratory system characterized by coughing, burning, and sneezing. Extreme overexposure may result in lung damage.

EYE: Irritant, direct contact may cause severe irritation characterized by itching, redness and tearing. Extreme overexposure may result in eye damage due to burns.

SKIN: Irritant, direct contact may cause severe irritation characterized by itching, redness and/or edema. Extreme overexposure may result in tissue damage due to burns.

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Other Chemical Interactions Which Enhance Toxicity: No known or reported interactions.

Existing Medical Conditions Aggravated By Exposure:

Eye irritation may result from prolonged exposure to low levels of dust. Prolonged dust inhalation may result in varying degrees of lung damage and/or mucous membrane irritation. Prolonged exposure of the skin may result in localized dermatitis, inflammation, and/or irritation. Prolonged exposure may aggravate allergies, pulmonary disorders and blood cell diseases.

OTHER HEALTH EFFECTS

Premature or accidental product activation, mishandling and/or improper storage of the package or the contact of package components with acids and/or reducing agents may result in the release of Chlorine Dioxide gas. Direct contact with or inhalation of Chlorine Dioxide gas may result in skin and/or eye irritation and/or inflammation of the respiratory system and/or mucous membranes. Extended inhalation of Chlorine Dioxide gas in high concentrations may lead to coughing, bronchitis, pulmonary edema and oxidative burns.

4). FIRST AID

INGESTION: **DO NOT** induce vomiting, if conscious have subject drink multiple glasses of water, **IMMEDIATELY** seek medical attention. Loosen any tight clothing. If the subject stops breathing begin mouth-to-mouth resuscitation. Examine face and oral cavity for soft tissue damage and indication of ingestion; irrigate any effected tissue thoroughly with water. **WARNING:** For cases involving ingested toxic, infectious, or corrosive materials administrating mouth-to-mouth resuscitation may be dangerous. **IMMEDIATELY** seek medical attention.

INHALATION: Evacuate subject to a well-ventilated safe area as soon as practical and loosen any tight clothing, **IMMEDIATELY** seek medical attention. The subject should minimize activity and rest in a well-ventilated area. If breathing is labored administer oxygen. If the subject stops breathing begin mouth-to-mouth resuscitation. **WARNING:** For cases involving inhaled toxic, infectious, or corrosive materials administrating mouth-to-mouth resuscitation may be dangerous. **IMMEDIATELY** seek medical attention.

EYES: If applicable, remove contact lenses. With open eyelids **IMMEDIATELY** irrigate eyes with cool or cold flowing water for at least 15 minutes. Do not use eye ointment of any type, flush with water **ONLY**. Seek medical attention **IMMEDIATELY**.

SKIN: In the case of direct contact, flush residual material and area of skin affected with generous amounts of cool or cold water for at least 15 minutes. Remove and launder any contaminated clothing prior to use. If irritation persists seek medical attention.

NOTE TO PHYSICIAN: Inhalation of Chlorine Dioxide potentially will damage the lungs, ingestion effects.

5). FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: Not applicable
AUTO IGNITION TEMPERATURE: Not applicable
FLAMMABLE LIMITS: Not applicable
EXTINGUISHING MEDIA: Not applicable; choose extinguishing media suitable for surrounding materials.

EXPLOSION HAZARDS: Not available; there is no specific information regarding the risk relative to explosion.

FIRE FIGHTING INSTRUCTIONS: Not applicable. Avoid fumes; approach fire from upwind. Use flooding quantities of water. Extinguish fire using agent suitable for surrounding combustible matter.

UNUSUAL EXPLOSION HAZARDS: Sodium Chlorite is a known oxidizer; avoid contact with organic matter. **KennelSol APS** product formulations are non-flammable. Premature or accidental mixture of **KennelSol APS** medias or direct contact of package or ingredients with acids and/or reducing agents may result in the release of Chlorine Dioxide gas. Chlorine Dioxide gas is not flammable, however, in a tightly enclosed environment Chlorine Dioxide gas that exceeds 10% concentration in air may be explosive. In the event of accidental premature release of Chlorine Dioxide gas apply flooding quantities of water to quench reaction, as practical, avoid use of pressurized water.

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LARGE SPILLS: Isolate hazard area and restrict access to necessary and protected personnel. Remove all sources of ignition and contain spill. Place contaminated material in a disposal container and thoroughly rinse spill area. Avoid material runoff into storm drains, ditches, or any pathways that lead to waterways. Never discharge into natural bodies of water.

SMALL SPILLS: Place all contaminated material in a disposal container and thoroughly rinse spill area with water.

PERSONAL PROTECTION: Dust and/or vapor respirator, full-face splashguard and/or goggles, and impervious gloves. In situations where ventilation is inadequate wear appropriate respirator. Use a NIOSH/MSHA acid approved respirator or equivalent. Remove and launder all contaminated clothing prior to reuse.

REACTION PRODUCT: Chlorine Dioxide Gas

SPILLS: Evacuate the area of unnecessary personnel. Remove the gas using a fine water spray. Wear self-contained breathing apparatus. Ventilate the area thoroughly.

PERSONAL PROTECTION: Air-purifying full face respirators. Eye wash facilities and emergency shower should be in close proximity.

7). HANDLING AND STORAGE

HANDLING: Except when in use, do not open individual packages to expose media components; keep bulk media containers tightly closed when not in use. Avoid media contact with skin, eyes or clothing. Do not generate media dust. Do not breathe media dust or vapors. Avoid personal exposure and contact with media components.

STORAGE: Store materials in a cool, dry, well-ventilated location. Storage temperature should not exceed 100 degrees F. Never open packages to expose media components. Keep bulk media containers tightly closed when not in use. Do not store in open, mislabeled or unlabeled containers. Do not deface or remove labels. Do not expose stored materials to heat, moisture or direct sun light.

SHELF LIFE LIMITATIONS: 12 months

INCOMPATIBLE MATERIALS FOR STORAGE: Acids, reducing agents, oxidizers, combustible materials, solvents, paints and sulfur.

8). EXPOSURE CONTROLS AND PERSONAL PROTECTION

ENGINEERING MEASURES: If use operations generate dust, fumes, or mists use local exhaust ventilation, process enclosures, or other control means to minimize airborne exposure. Otherwise, use general exhaust ventilation or other air circulation means.

PERSONAL PROTECTIVE EQUIPMENT:

EYE AND FACE PROTECTION: Use a chemical approved full-face splashguard and goggles or safety glasses. Strong recommendation: maintain an eyewash station, shower, and washing facilities in a location near the material work area.

SKIN PROTECTION: Impervious gloves are recommended, but not required. Strong recommendation: maintain an eyewash station, shower, and washing facilities in a location near the material work area.

RESPIRATORY PROTECTION: Maintain a well-ventilated work area or local forced exhaust system. If ventilation is not acceptable or if exposure to vapor, dust or mist is possible wear a NIOSH/MSHA approved acid vapor respirator and dust/mist pre-filter.

EXPOSURE GUIDELINES: There are no established exposure limits based on the systemic inhalation of Sodium Chlorite dust, the recommended 8 to 12 hour time weighted average (TWA) for an occupational exposure limit (OEL) for Sodium Chlorite dust is 1 mg/m³. In the event of accidental or premature release of Chlorine Dioxide gas the OSHA PEL and ACGIH TLV for Chlorine Dioxide gas is 0.1 PPM and 0.3-PPM STEL.

9). CHEMICAL AND PHYSICAL PROPERTIES

APPEARANCE:

FORM:	Solid irregular shaped granules
COLOR:	Off white, light tan to burnt orange
ODOR:	Mild bleach/pool odor
CHEMICAL FORMULA:	Proprietary
MOLECULAR WEIGHT:	Proprietary
MELTING POINT:	Not applicable
BOILING POINT:	Not applicable
pH:	Range: 6 to 8 at 25°C
BULK DENSITY:	Range: 80 to 110 lbs/ft ³ packed
SOLUBILITY IN WATER:	Range: 1% to 10% at 25°C
DECOMPOSITION TEMPERATURE:	Range: 250 to 300°C
VOLATILES, % BY VOLUME:	Range: 1% to 25%

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10). REACTIVITY AND STABILITY

- STABILITY: Stable material. CONDITIONS TO AVOID: Avoid ignition sources and extended exposure to heat, moisture and ultraviolet light.
- COMPATIBILITY: SPECIFIC MATERIALS TO AVOID, reactive with reducing agents, acids, oxidizers, solvents, paints, combustible materials and sulfur.
- REACTIVITY: Chlorine Dioxide gas may be generated upon contact with reducing agents, acids and/or oxidizers or mishandling of packages or improper storage of packages.
- POLYMERIZATION: Will not occur

11). TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

INHALATION: Inhalation may cause irritation of the mucous membranes and respiratory system characterized by coughing, burning, and sneezing. Extreme overexposure may result in lung damage.

CHRONIC TOXICITY

INHALATION: No data available on any chronic effects.

INGESTION: Chronic Sodium Chlorite (Part A precursor) ingestion in drinking water concentrations of 100 PPM and greater has resulted in minor suppression of thyroid function and mild anemia in laboratory animals. After cessation of treatments all symptoms were reversible. Clinical studies of human populations using drinking water disinfected with Sodium Chlorite yielded no adverse effects.

CARCINOGENICITY: According to NTP, OSHA, EPA and IARC Sodium Chlorite (Part A precursor), including all other product components and the product as a whole, does NOT contain known carcinogens, (i.e. cancer causing agents).

MUTAGENICITY:

Orally administered Sodium Chlorite in animal studies has not been found to be mutagenic. Human health effects of Sodium Chlorite are unclear. Human health data for the product as a whole is not available.

REPRODUCTIVE SYSTEM TOXICITY:

In animal studies Sodium Chlorite has not been found to be teratogenic in drinking water concentrations up to 100 PPM. No additional information related to teratogenic effects for the product, as a whole is available. Male rats chronically exposed to Sodium Chlorite concentrations of 100 PPM or greater in drinking water have exhibited slight suppression of sperm mobility. At any dose level similar animal studies have not produced any meaningful adverse reproductive treatment effects. No information related to the reproductive system for the product, as a whole is available.

12). ECOLOGICAL INFORMATION

- AQUATIC TOXICITY:** Sodium Chlorite is toxic to fish and aquatic organisms. No further information related to aquatic toxicity for the product as a whole is available.
- ECO TOXICITY:** Sodium Chlorite in the diet of Mallard Ducks and Bobwhite Quail was not acutely toxic during dietary eight day LC₅₀ at more than 10,000 PPM. For Rainbow Trout Acute four day LC₅₀ : 290 mg/l, acute TL₅₀ : 50.6 mg/l.
- ENVIRONMENTAL FATE:** Sodium Chlorite in water and soil will degrade to Sodium Chloride salt (NaCl).

13). DISPOSAL CONSIDERATIONS

All disposal of Sodium Chlorite must comply with local, state and Federal regulations, EPA waste designation: D001. Product components, as shipped, are not listed as RCRA hazardous waste and are considered inert. State and local disposal regulations may differ from federal disposal regulations. Characterization of waste and compliance with disposal regulations are the responsibility of the waste generator.

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14). TRANSPORT INFORMATION

Parts A & B are non-hazardous for shipping purposes.

15). REGULATORY INFORMATION

US FEDERAL REGULATIONS

REPORTABLE QUANTITY:

None

TOXIC SUBSTANCES CONTROL ACT:

Sodium Chlorite is listed on TSCA Inventory

SARA TITLE III:

Sodium Chlorite is not subject to reporting requirements of Section 313 of Title III of the 1986 Superfund Amendments and Reauthorization Act (SARA) and 40 CFR Part 372.

SARA HAZARD CATEGORIES (40 CFR 370.2):

Health: Immediate (Acute), Delayed (Chronic) Physical: Fire

16). OTHER INFORMATION

See *KennelSol APS* product data sheets for further information on product applications, use instructions, health, safety, transport, storage, environmental, and disposal. For any other information contact Alpha Tech Pet, Inc.

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