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ACTIVON INC.
123 Commercial Drive
Beaver Dam, WI 53916

MATERIAL SAFETY DATA SHEET

Section I: PRODUCT IDENTIFICATION

Trade Name: EfferSan™ Multi-Purpose Disinfecting Tablets
Trade Name Synonyms: EfferSan™
Manufacturer's Name: Activon Inc.
Emergency Phone Number: 1-800-654-6911

Section II: COMPOSITION DATA

Product Composition:

Chemical Name:	Sodium dichloro-s-triazinetriene	CAS #2893-78-9
Hazardous per CFR 1910.1200:	Yes	
Exposure Standards:	None established	
Chemical Name:	Hexanedioic acid	CAS #124-04-9
Hazardous per CFR 1910.1200:	Yes	
Exposure Standards:	None established	
Chemical Name:	Sodium bicarbonate	CAS #144-55-8
Hazardous per CFR 1910.1200:	Yes	
Exposure Standards:	None established	
Chemical Name:	Sodium carbonate	CAS #497-19-8
Hazardous per CFR 1910.1200:	Yes	
Exposure Standards:	None established	

Section III: HANDLING & STORAGE PRECAUTIONS

Do not take internally. Avoid contact with skin, eyes and clothing. Upon contact with skin or eyes, wash off with water.

Storage Conditions: Do not store at temperatures above 60°C (140°F)

Product Stability and Compatibility: Shelf Life Limitations: At least eight months

Incompatible Materials for Packaging: Paper

Incompatible Materials for Storage or Transport: Flammable liquids, combustible materials, oxidizable materials, oxidizing or chlorinating agents, organic materials, ammonia, ammonium salts, hydrated salts, non-ionic surface active agents, acids and bases

Section IV: PHYSICAL DATA

Appearance: White tablet
Odor: Mild chlorine
Boiling Point: Not applicable
Vapor Pressure: None @ 25°C
Vapor Density: Not applicable
Decomposition Temperature: 76°C (170°F)
pH: 6.0 @ 25° C (1% solution)

Specific Gravity: 1.5 – 1.7
Solubility in Water: 25%
Percent Volatile: None
Evaporation Rate: Not applicable
Melting Point: 240-250°C (464-482°F)
Bulk Density: 0.9 – 1.0 g/cc

Section V: PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

Personal Protection for Processing & Manufacturing of Product:

Respiratory Protection: Wear a NIOSH/MSHA approved acid gas cartridge respirator with a dust/mist pre-filter.

Ventilation: Use local exhaust ventilation to minimize exposure.

Skin Protective Equipment: Wear gloves, chemical goggles, and aprons to avoid skin and eye contact.

Equipment Specifications (when applicable):

Respirator Type: Wear NIOSH/MSHA approved acid gas cartridge respirator with a dust/mist pre-filter.

Glove Type: Impervious

Apron Type: Impervious

Boot Type: Not normally needed

Protective Suit: Not normally needed

Section VI: FIRE AND EXPLOSION HAZARD INFORMATION

Flammability Data:

Flammable: No

Pyrophoric: No

Autoignition Temperature: Not determined

Flammable Limits at Normal Atmospheric Temperature and Pressure (Percent Volume in Air):

LEL: Not applicable

Combustible: No

Flash Point: Not applicable

NFPA Ratings: Not established

UEL: Not applicable

HMIS Ratings: Health = 3; Flammability = 1; Reactivity = 2; (Least = 0; Extreme = 4)

Fire Extinguishing Media: Not applicable

Fire-Fighting Techniques and Comments: Use water to cool containers exposed to fire. See Section XI for protective equipment for fire fighting. Use water in flooding quantities as fog. Toxic fumes may be generated during fire. See Section VII below.

Section VII: REACTIVITY INFORMATION

Conditions under which this product may be unstable:

Temperatures Above: 76°C (170°F)

Electrical (Static) Discharge: No data

Incompatible materials: Flammable liquids, combustible materials, oxidizable materials, oxidizing or chlorinating agents, organic materials, ammonia, ammonium salts, hydrated salts, non-ionic surface active agents, acids and bases

Hazardous Decomposition Products: Chlorine, carbon dioxide

Other Conditions to Avoid: Moisture, heat

Summary of Reactivity:

Oxidizer: Yes

Pyrophoric: No

Organic Peroxide: No

Water Reactive: No

Section VIII: FIRST AID

EYES: Immediately flush with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Call a physician at once.

Section VIII: FIRST AID (Continued)

SKIN: Wash exposed area of skin with soap and warm water. If clothing becomes soiled with product, launder before reuse. Seek medical attention if irritation occurs.

INGESTION: Immediately drink large quantities of water. DO NOT induce vomiting. Call a physician at once. DO NOT give anything by mouth if the person is unconscious or if having convulsions.

INHALATION: If person experiences nausea, headache, or dizziness, person should stop work immediately and move to fresh air until these symptoms disappear. If breathing is difficult, administer oxygen, keep the person warm and at rest. Call a physician. In the event that an individual inhales enough vapor to lose consciousness, person should be moved to fresh air at once and physician should be called immediately. In all cases, ensure adequate ventilation and provide respiratory protection before the person returns to work.

Section IX: TOXICOLOGY AND HEALTH INFORMATION

Routes of Absorption: Oral, dermal, inhalation, eye contact

Warning Statements and Warning Properties: Harmful if inhaled or ingested. May cause severe irritation and/or burns to the skin or eyes.

Human Dose Response Data:

Odor and Irritation Threshold: There is no data available on the components or mixture. However, the product may show similar properties as chlorine, which has an odor threshold of approximately 1.7 mg/cubic meter (0.3 ppm) and an irritation threshold of approximately 0.5 ppm. **Toxic Dose and Effect:** There are no reports on the potential toxic effects in humans. **Immediately Dangerous to Life or Health:** No level has been established for the components or the product itself. The product may behave similarly to chlorine, which has an immediately dangerous to life and health concentration of 25 ppm.

Signs, Symptoms and Effects of Exposure (to product in solid, non-diluted form):

Acute Inhalation: Inhalation is irritating to the nose, throat, mucous membranes and respiratory tract. Symptoms may include coughing, wheezing, runny or bloody nose, or sneezing. High concentration may cause burns to the respiratory tract with possible lung edema (fluid in the lung), which can result in shortness of breath, wheezing, choking, chest pain, and impairment of lung function. In extreme situations, acute inhalation may cause permanent lung damage from this corrosive action on the lung. **Chronic Inhalation:** Repeated inhalation of high concentrations may cause impairment of lung function and, in extreme situations, permanent lung damage.

Acute Skin: Direct contact can cause severe irritation and/or burns characterized by redness, swelling, and scab formation. Prolonged contact may cause destruction of the outer skin layer with impairment of the skin and site of contact to repair or regenerate itself. **Chronic Skin:** Repeated contact would cause similar effects to single exposures. **Acute Eye:** Direct contact or high dust concentrations may cause severe irritation and/or burns. This may result in impairment of vision and permanent eye damage. **Acute Ingestion:** Irritation and/or burns may occur from ingestion of this product. This may result in burns to the mouth, throat, and gastrointestinal tract, nausea, vomiting, diarrhea, abdominal pain, bleeding and/or tissue destruction. **Chronic Ingestion:** There is no data available on the chronic ingestion of this product. Because of the potential corrosive effects from single exposures, it is highly unlikely to be repeatedly ingested.

Medical Conditions Aggravated by Exposure: Asthma, emphysema, and other respiratory diseases.

Interactions with Other Chemicals which Enhance Toxicity: None known or reported.

Animal Toxicity:

Acute Toxicity: Although there are no data available on the product, the following information is available on the major ingredient, sodium dichloroisocyanurate (aka sodium dichloro-s-triazinetriene):

Corrosive to skin and eyes
Oral LD₅₀ = 735 mg/kg (rat)
Dermal LD₅₀ > 2 g/kg (rabbit)
Inhalation LC₅₀ > 50 mg/L (rats, 1 hour exposure)

Section IX: TOXICOLOGY AND HEALTH INFORMATION (Continued)

Aquatic and Wildlife Toxicity: Although no data are available on the product, the following values are available on the major component, sodium dichlorisocyanurate (aka sodium dichloro-s-triazinetriene):

LC50 (96 hours) rainbow trout = 0.22 mg/L
LC50 (96 hours) bluegill sunfish = 0.28 mg/L
LC50 (24 hours) daphnia magna = 0.55 mg/L
LD50 bobwhite quail = 730 mg/kg
LD50 in diet (8 day exposure) bobwhite quail > 10,000 ppm
LD50 mallard duck = 3.3 g/kg
LD50 in diet (8 day exposure) mallard duck > 10,000 ppm

Acute Target Organ Effects: Toxicity studies in laboratory animals have demonstrated the irritating and corrosive action of the chemical (in solid, non-diluted form) on the tissues contacted (skin and eyes).

Chemical Target Organ Effects: A repeated inhalation study in rats (four week exposure) showed that very high concentrations of sodium dichloroisocyanurate dihydrate (32 mg/cubic meter) may cause effects on the respiratory tract. These effects included labored breathing, rales (an unusual sound upon breathing) and nasal discharge.

Effects on Reproduction: There are no known or reported effects on reproductive function or fetal development. Both reproductive and teratology studies have been performed on sodium isocyanurate and neither study showed effects on reproductive function or fetal development. It is felt that these studies would apply to the chlorinated isocyanurates.

Carcinogenicity: This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA. Carcinogenicity studies have been performed on sodium isocyanurate which are applicable to this product. These studies did not show an increase in tumors following lifetime exposure to the test material.

Mutagenicity: This product is not known or reported to be mutagenic.

Section X: TRANSPORTATION INFORMATION

This material is not regulated as a DOT hazardous material.

Section XI: SPILL AND LEAKAGE PROCEDURES

For all transportation accidents call CHEMTREC at 1-800-424-9300.

Reportable Quantity: Not applicable, per 40 CFR 302.4.

Spill Mitigation Procedures: Do not pet water directly on this product as gas evolution may increase. Remove all sources of ignition.

Air Release: Vapors may be suppressed by the use of a water fog. Contain all water for treatment and proper disposal.

Water Release: This material is heavier than water. This material is semi-soluble. Stop spill materials from entering water source if safe to do so. Check all water for available chlorine content and notify all downstream users of possible contamination.

Land Spill: Clean up spill material using clean, dry equipment and place in a clean plastic bag or container free of oil, grease, or organic materials. Reseal original container and remove both to an outside well-ventilated area for later treatment and/or disposal.

Spill Residues: Wash down spill area with large amounts of water and decontaminate all clothing, equipment and fire apparatus as soon as possible. Dispose of per guidelines under **Section XII, Waste Disposal**. This material may be neutralized for disposal; you are requested to contact OCEAN at 1-800-OLIN-911 before beginning any such operation.

Personal Protection for Emergency Spill and Fire-Fighting Situations: Response to this material requires the use of self-contained breathing apparatus (SCBA). For a spill, additional protective clothing must be worn to prevent personal contact with this material. Those items include, but are not limited to, boots, gloves (see below for compatible materials) and splash-proof goggles. Compatible materials for response to this material are:

**Neoprene, Chlorinated Polyethylene, Polyvinyl Chloride, Butyl Rubber,
Viton, Polyvinyl Alcohol, Saranex**

Section XII: WASTE DISPOSAL

If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under 40 CFR 351, in that it does not exhibit the characteristics of hazardous waste of Subpart C, nor is it listed as a hazardous waste under Subpart D. As a nonhazardous solid waste it should be disposed of in accordance with local, state, and Federal regulations by treatment in a wastewater treatment system. *Care must be taken to prevent environmental contamination from the use of this material. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state, and Federal laws and regulations regarding treatment, storage, and disposal for hazardous and nonhazardous wastes.*

Section XIII: ADDITIONAL REGULATORY STATUS INFORMATION

Toxic Substances Control Act: This substance is regulated under FIFRA, therefore it is exempt from TOSCA.
Superfund Amendments and Reauthorization Act Title III: Hazard Categories, Per 40 CFR 370.2:

Health: Immediate (Acute), **Physical:** Fire, Reactivity

Emergency Planning and Community Right to Know: Per 40 CFR 355, Appendix A: Extremely hazardous substance – threshold planning quantity not established.

OSHA Hazard Classification: Corrosive, skin and eye hazard; lung toxin

Supplier Notification Requirements: Per 40 CFR 372.45: None established.

Revised 1/15/2014

The information provided herein was believed to be accurate at the time of preparation and prepared from a compilation of sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information, to comply with all laws and procedures applicable to the safe handling and use of this product and to determine the suitability of the product for its intended use. It is a violation of Federal law to use this product in a manner inconsistent with its labeling.