Material Safety Data Sheet

**MSDS/SDS Number:** 00000001MSDS

**Latest Revision Date:** January 11, 2011

**Revision:** G

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE OR PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product Name:** Sanitization Chlorine Tablets.

**Catalogue Number(s):** See Section 16.

**Chemical Name:** Solid tablet containing [Troclosene Sodium, Dehydrate], Adipic Acid and Sodium Carbonate.

**Synonyms:** Autoclean Tablets, Sanitization Tablets and Chlorine Tablets.

**Intended Product Use:** Tablets for sanitizing water purification equipment.

| | | |
|---|---|---|
| **Manufacturer/Distributor:** | Millipore Corporation<br>(Corporate Headquarters) | Millipore S.A.S.<br>(European Headquarters) |
| **Postal Address:** | 290 Concord Road<br>Billerica MA, 01821 USA | Boite Postale 116<br>Molsheim Cedex, 67124 France |
| **Telephone Number:** | +1-978-715-1335 | +33(0)3 90 46 90 00 |
| **Hours of Operation:** | 9:00 am to 4:00 pm ET (GMT -4) | 9:00 am to 4:00 pm EU CT (GMT +1) |

**Worldwide Offices:** http://www.millipore.com/offices/cp3/officeshome

**Email:** msds@millipore.com

**CHEMTREC Emergency Telephone Number:** International +1-703-527-3887 (collect)
North America 1-800-424-9300 (toll free)

## SECTION 2 HAZARDS IDENTIFICATION

**Globally Harmonized System of Classification and Labeling of Chemicals (GHS):**

**Symbol:**

**Hazard Category:**

1: Hazardous To The Aquatic Environment, Long-Term Hazard
2A: Serious Eye Damage/Irritation
2: Skin Corrosion/Irritation
3: Specific Target Organ Toxicity, Single Exposure
4: Acute Toxicity, Oral

**Signal Word:** Warning

**Hazard Statement:** H410: Very toxic to aquatic life with long lasting effects.
H315+320: Causes skin and eye irritation.
H335: May cause respiratory irritation.
H302: Harmful if swallowed.

**GHS Precautionary Statements:**

**Prevention:** P261: Avoid breathing dust/mist/vapours.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P273: Avoid release to the environment.
P281: Use personal protective equipment as required.

**Response:** P308+P313: If exposed or concerned: Get medical advice/attention.
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330: Rinse mouth.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lens, if present and easy to do. Continue rinsing.
P302+P352: IF ON SKIN: Wash with plenty of soap and water.
P362: Take off contaminated clothing and wash before reuse.
P391: Collect spillage.

**Storage:** P403+P233: Store in a well ventilated place. Keep container tightly closed.
P405: Store locked up.

**Disposal** P501: Dispose of content/container in accordance with local regulations.

**Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH):**

**Symbol:**

**Symbol Letter:** Xn, N

**Hazard:** Harmful, Dangerous For The Environment

**Risk Phrase:** R22: Harmful if swallowed.
R31: Contact with acids liberates toxic gas.
R36/37: Irritating to eyes and respiratory system.
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

## SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

**Identification of Dangerous Components:** This product contains the substances listed below, which are defined as dangerous substances or hazardous chemicals as defined in European Community Directives 67/548/EEC or 1999/45/EC, and Hazard Communication Standard 29 CFR 1910.1200.

| Dangerous Component | EINECS or ELINCS No. | CAS No. | Content (weight percent) | EU Hazard Symbol Letters*† | R Phrases** † |
|---|---|---|---|---|---|
| Troclosene Sodium, Dehydrate: | 220-767-7 | 51580-86-0 | 50 - 100% | Xn<br>N | R22<br>R31<br>R36/37<br>R50/53 |
| Adipic Acid: | 204-673-3 | 124-04-9 | 2.5 - 10% | Xi | R36 |
| Sodium Carbonate: | 207-838-8 | 497-19-8 | 0.1 - 2.5 % | Xi | R36 |

* Symbol letters and categories of danger: **T+** = Very toxic, **T** = Toxic, **C** = Corrosive, **Xn** = Harmful, **X**i = Irritant**,** **E** = Explosive, **F+** = Extremely flammable, **F** = Very flammable, **N** = Dangerous for the environment, **O** = Oxidising.

** The full text of each R phrase is listed in Section 15.

† Symbols letters and R Phrases are assigned to each dangerous component for the highest concentration range as defined in 67/548/EEC and 1999/45/EC.

## SECTION 4 FIRST AID MEASURES

| | Treatment Measures: | Symptoms of Exposure: |
|---|---|---|
| **Contact with Eyes:** | If the product contacts the eyes, promptly wash (irrigate) the eyes with large amounts of tepid water for at least 15 minutes, occasionally lifting the lower and upper lids. Seek medical attention immediately. | Possible eye irritation, redness, swelling, vision impairment and lacrimation. |
| **Ingestion:** | Seek medical attention immediately. Never give an unconscious person anything by mouth. Do not induce vomiting. If conscious give large quantities of water. | Possible gastrointestinal irritation, nausea, vomiting, bleeding and tissue destruction. |
| **Inhalation:** | If a person inhales large amounts of the product move the exposed person to fresh air at once. If breathing is difficult or stops seek immediate medical attention. | Possible respiratory tract and mucous membrane irritation, coughing, wheezing, runny or bloody nose, sneezing, lung edema, shortness of breath, wheezing, choking, chest pain, and impairment of lung function. |
| **Skin Contact:** | If the product contacts the skin, immediately flush the contaminated skin with mild soap and water. If this chemical penetrates clothing immediately remove the clothing and flush the skin with water. Seek medical attention immediately. | Possible skin irritation, redness, swelling, scab formation and dermatitis with repeated or prolonged exposure. |

## SECTION 5 FIRE FIGHTING MEASURES

**Suitable Extinguishing Media:** Use extinguishing media appropriate for the surrounding fire. This product is compatible with commercially available extinguishing media.

**Special Protective Equipment for Firefighters:** This product does not require the use of any additional fire fighting equipment beyond what is appropriate to the surrounding fire.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Wear chemical resistant boots, clothing, eye protection, and gloves to prevent skin contact. (See Section 8)

**Small Spills:** Identify the spilled material(s). Barricade the spill area and notify others in the surrounding areas. Control all sources of ignition if the substance is flammable. Don the appropriate personal protective equipment (See section 8). Control the movement of the spilled product (into drains, soil, across floors etc.) with absorbent spill materials. Collect contaminated spill material and place in container meeting appropriate U.N. packaging requirements. Decontaminate used equipment and affected spill area appropriately.

**Large Spills:** In addition to small spill precautions, determine personnel evacuation distances. Notify appropriate authorities if necessary.

**Environmental Precautions:** Collect and dispose of contaminated materials according to international, federal, state and local regulations. Keep away from surface and ground water, drains, and soil.

## SECTION 7 HANDLING AND STORAGE

**Handling:** Seek appropriate training to safely handle this product under normal conditions. Use the recommended personal protective equipment (See Section 8) to prevent chemical exposures. Wash hands with soap and water before eating, drinking, or touching common items (phone, computer, etc.) to prevent cross contamination. Use this product with adequate ventilation. See product technical data sheet for details.

**Storage:** See product technical data sheet for details.

**Specific use:** See product technical data sheet for details.

## SECTION 8 EXPOSURE CONTROL AND PERSONAL PROTECTION

| **Exposure Limit Values:** | OSHA PEL | NIOSH REL | ACGIH TLV | Other |
|---|---|---|---|---|
| Troclosene Sodium, Dehydrate: | TWA 5 mg/m$^3$ (Respirable) [PNOR]; TWA 15 mg/m$^3$ (Total Dust) [PNOR] | Not Listed | TLV 3 mg/m$^3$ (Respirable) [PNOS]; TLV 10 mg/m$^3$ (Inhalable) [PNOS] | None |
| Adipic Acid: | Not Listed | Not Listed | TWA 5 mg/m$^3$ | See Below |
| Belgium: | TWA 5 mg/m$^3$, MAR 2002 | | | |
| Denmark: | TWA 5 mg/m$^3$, OCT 2002 | | | |
| The Netherlands: | MAC-TGG 5 mg/m$^3$, 2003 | | | |
| Russia: | STEL 4 mg/m$^3$, JUN 2003 | | | |

| | | | | |
|---|---|---|---|---|
| Sodium Carbonate: | TWA 5 mg/m$^3$ (Respirable) [PNOR]; TWA 15 mg/m$^3$ (Total Dust) [PNOR] | Not Listed | TLV 3 mg/m$^3$ (Respirable) [PNOS]; TLV 10 mg/m$^3$ (Inhalable) [PNOS] | None |

| | **Normal Handling Conditions** | **Emergency Response Conditions** |
|---|---|---|
| **Engineering Controls:** | General room ventilation is adequate for the use of this product. | Provide negative pressure ventilation. |
| **Respiratory Protection** | Use appropriate respiratory protection. | Use appropriate respiratory protection. |
| **Eye Protection:** | Safety glasses with side shields. | Chemical splash goggles or other face protection as appropriate. |
| **Skin Protection:** | Laboratory coat, adequate chemical-resistant gloves. | Chemically resistant boots, clothes, and impermeable gloves as appropriate. |
| **Environmental Exposure Controls:** | Not available. | Not available. |

**Other Equipment:** Safety shower, eyewash stations, and hand washing equipment should be available close to the work area as needed.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|---|---|---|
| **Appearance:** | White Tablets | |
| **Odor:** | Characteristic Chlorine Odor | |
| **Odor Threshold:** | 0.08 ppm | |
| **pH:** | 5.8 - 6.2 | |
| **Melting Point:** | 240 - 250°C (464 – 482°F) | |
| **Initial Boiling Point and Boiling Range:** | Not Available | |
| **Flash Point:** | Not Available | |
| **Evaporation Rate, 20 ºC:** | Not Available | |
| **Flammability (Solid):** | 250ºC | |
| **Explosive Limits:** | UEL: Not Available | LEL: Not Available |
| **Vapor Pressure:** | None @ 25°C | |
| **Vapor Density, 20 ºC:** | Not Available | |
| **Relative Density (Water = 1.0):** | 1.5 - 1.7 | |
| **Solubility:** | 500 g/L | |
| **Partition coefficient (n-octanol/water):** | Not Available | |
| **Auto Ignition Temperature (ASTM D1929):** | Not Available | |

**Decomposition temperature:** 76°C (170°F)

**Oxidizing Properties:** Mild Oxidizing Agent

**Viscosity, centipoise:** Not Available

## SECTION 10 STABILITY AND REACTIVITY

**Chemical Stability:** Product is stable under normal operating conditions and use as described in the product technical data sheet.

**Conditions to Avoid:** Avoid generating dust, temperatures above 76°C (170°F), moisture.

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

**Hazardous Decomposition Products:** Heating to decomposition temperature may produce carbon monoxide, carbon dioxide, chlorine gas and nitrogen oxides.

## SECTION 11 TOXICOLOGICAL INFORMATION

**Toxicology Data:** Toxicological information for this product as a whole does not exist, below is data for the individual components.

Troclosene Sodium, Dehydrate: RTECS #XZ1910000
Adipic Acid: RTECS #AU8400000
Sodium Carbonate: RTECS #VZ4050000

| | Toxicity Test | Exposure Route | Dose | Observed Effect |
|---|---|---|---|---|
| **Acute Toxicity:** | | | | |
| Troclosene Sodium, Dehydrate: | $LD_{50}$ (Rat) | Oral | 1,420 mg/kg | Behavioral: Somnolence (general depressed activity); Lung, Thorax, or Respiration: Acute pulmonary edema Liver: Other changes[1] |
| | $LD_{lo}$ (Human) | Oral | 3,570 mg/kg | Gastrointestinal: Ulceration or bleeding from stomach[1] |
| Adipic Acid: | $LD_{50}$ (Mouse) | Oral | 1,900 mg/kg | Gastrointestinal: Other changes[2] |
| | $LD_{50}$ (Mouse) | Intravenous | 680 mg/kg | Behavioral: Convulsions or effect on seizure threshold Blood: Hemorrhage[2] |
| Sodium Carbonate: | $LD_{50}$ (Rat) | Oral | 4,090 mg/kg | N/A[3] |
| | Lowest Published Lethal Concentration (Human) | Oral | 714 mg/kg | Behavioral: General anesthetic Gastrointestinal: Ulceration or bleeding from small intestine Gastrointestinal: Other changes[3] |

| | | | | |
|---|---|---|---|---|
| | $LC_{50}$ (Rat) | Inhalation | 2,300 $mg/m^3$/2 hour | Lung, Thorax, or Respiration: Dyspnea Gastrointestinal: Other changes[3] |
| **Skin Corrosion/Irritation:** | | | | |
| Troclosene Sodium, Dehydrate: | Skin Irritation (Rabbit) | Skin | 500 mg/24 hour | Moderate[1] |
| **Serious Eye Damage/Eye Irritation:** | | | | |
| Troclosene Sodium, Dehydrate: | Eye Irritation (Rabbit) | Eye | 100 mg/24 hour | Mild[1] |
| Adipic Acid: | Eye Irritation (Rabbit) | Eye | 20 mg/24 hour | Moderate[2] |
| Sodium Carbonate: | Eye Irritation (Rabbit) | Eye | 50 mg | Severe[3] |

**Respiratory or Skin Sensitization:** Not Available

**Germ Cell Mutagenicity:** Not Available

**Reproductive Toxicity:** Not Available

**STOST-Single Exposure:** Not Available

**STOST-Repeated Exposure:** Not Available

**Aspiration Hazard:** Not Available

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

**Carcinogenicity:** Carcinogenetic information for this product as a whole does not exist, below is data for the individual components.

| **Research Agency:** | OSHA: | NTP: | IARC: |
|---|---|---|---|
| Troclosene Sodium, Dehydrate: | Not Listed | Not Listed | Not Listed |
| Adipic Acid: | Not Listed | Not Listed | Not Listed |
| Sodium Carbonate: | Not Listed | Not Listed | Not Listed |

## SECTION 12 ECOLOGICAL INFORMATION

**Ecotoxicity:** Ecotoxicity information for this product as a whole does not exist, below is data for the individual components:

| | |
|---|---|
| Troclosene Sodium, Dehydrate: | $LC_{50}$ Lepomis Macrochirus 96 hours 460.0 ug/L[4] |
| | $LC_{50}$ Oncorhynchus Mykiss 96 hours 250.0 ug/L[4] |
| Adipic Acid: | $LC_{50}$ Pimephales Promelas 24 Hours 172,000 ug/L[5] |
| | $LC_{50}$ Pimephales Promelas 48 Hours 114,000 ug/L[5] |
| | $LC_{50}$ Pimephales Promelas 96 Hours 97,000 ug/L[5] |
| Sodium Carbonate: | $LC_{50}$ Gambusia Affinis 24 Hours 1,200,000 ug/L[6] |
| | $LC_{50}$ Gambusia Affinis 48 Hours 840,000 ug/L[6] |

$LC_{50}$ Gambusia Affinis 96 Hours 740,000 ug/L[6]

**Mobility:**

Adipic Acid: Terrestrial Fate: Based on a recommended classification scheme, an estimated Koc value of 26, determined from a measured log Kow of 0.08 and a recommended regression-derived equation, indicates that adipic acid is expected to have very high mobility in soil. Volatilization of adipic acid is not expected to be important from moist soil surfaces given an estimated Henry's Law constant of 4.7X10-12 atm-cu m/mole from its extrapolated vapor pressure, 7.4X10-7 at 30°C, and measured water solubility, 3.0X10+4 mg/l at 30°C. Adipic acid is not expected to volatilize from dry soil surfaces based on its extrapolated vapor pressure. Biodegradability screening tests indicate that adipic acid is readily biodegradable. An 84% conversion of adipic acid's carbon content to carbon dioxide was observed after 30 days aerobic incubation in soil biometer flasks at an initial adipic acid concentration of 1 mg/g soil.[7]

Aquatic Fate: Based on a recommended classification scheme an estimated Koc value of 26, determined from a measured log Kow of 0.08 and a recommended regression-derived equation indicates that adipic acid is not expected to adsorb to suspended solids and sediment in water. Adipic acid is not expected to volatilize from water surfaces based on an estimated Henry's Law constant of 4.7X10-12 atm-cu m/mole from its extrapolated vapor pressure, 7.4X10-7 mm Hg at 30°C, and measured water solubility, 3.0X10+4 mg/l at 30°C. Adipic acid's pKa's of 4.44 and 5.4 indicate that adipic acid will exist predominately in the ionized form under environmental pHs. Volatilization of the ionized form from water surfaces is not expected to be an important fate process. According to a classification scheme, an estimated BCF value of 0.68, from a measured log Kow, suggests that bioconcentration in aquatic organisms is low. Biodegradability screening tests indicate that adipic acid is readily biodegradable. Adipic acid was rapidly degraded in a river die-away test using Main River (Germany) water; 50% and 90% degradation being achieved in 3.5 and 7 days, respectively, at concentration levels of 700 mg/l.[7]

Atmospheric Fate: According to a model of gas/particle partitioning of semivolatile organic compounds in the atmosphere, adipic acid, which has an extrapolated vapor pressure of 7.4X10-7 mm Hg at 30°C, will exist in both the vapor and particulate phases in the ambient atmosphere. Vapor-phase adipic acid is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be about 2.9 days. Particulate-phase adipic acid may be physically removed from the air by wet and dry deposition.[7]

**Persistence and Degradation:**

Adipic Acid: Adipic acid is readily biodegradable. In four biodegradability screening tests that were designed as models for degradability in surface water, the results ranged from 92% of theoretical BOD in 14 days to 83% in 30 days. In 5 tests designed to simulate treatment plants, results ranged from 99% DOC removal in 1 day to 92% of theoretical BOD in 14 days. A screening procedure that was systematically applied to a large number of organic chemicals typified adipic acid as being "completely biodegraded in a short time by general microorganisms". After a 5-10 hr lag, 50-75% of theoretical BOD was obtained in 90-100 hr. Adipic acid was rapidly degraded in a river die-away test using Main River (Germany) water; 50% and 90% degradation being achieved in 3.5 and 7 days, respectively, at concentration levels of 700 mg/l. A test designed to simulate degradation in polluted river water, the AFNOR test, gave a 5 day BOD of 36% of theoretical. Adipic acid, present at a concentration of 100 mg/l, reached 68 to 90% of its theoretical BOD in 2 weeks using an activated sludge inoculum.[7]

**Bio Accumulative Potential:**

| | |
|---|---|
| Adipic Acid: | An estimated BCF value of 0.68 was calculated for adipic acid, using a measured log Kow of 0.08 and a recommended regression-derived equation. According to a classification scheme, this BCF value suggests that bioconcentration in aquatic organisms is low.[7] |
| **Results of PBT Assessment:** | Not Available. |
| **Other adverse effects:** | Not Available. |

## SECTION 13 DISPOSAL INFORMATION

| | |
|---|---|
| **Substance:** | Dispose of unused contents in accordance with international, federal, state, and local regulations. |
| **Contaminated Packaging:** | Dispose of container in accordance with international, federal, state and local requirements. |

## SECTION 14 TRANSPORTATION INFORMATION

| | |
|---|---|
| **UN Number:** | UN3077. |
| **Class:** | 9. |
| **Proper Shipping Name:** | Environmentally hazardous substances, solid, n.o.s. |
| **Packing Group:** | III. |
| **Marine Pollutant:** | Not Listed. |
| **Other Applicable Information:** | Special Provisions: 8, 146, B54,IB8, IP3, N20, T1, TP33. |

## SECTION 15 REGULATORY INFORMATION

| | | |
|---|---|---|
| **Australia:** | Hazchem Code: | 2ZE. |
| | Poisons Schedule Number: | S2. |
| **California:** | Proposition 65 Listed: | Not Listed. |
| **Canada:** | WHMIS: | C, D2A, D2B. |
| **European Union:** | REACH: | Chemical Safety Assessment for the substance or substances in the preparation not required. |
| | Substances of Very High Concern (SVHC) – January 13, 2010: | This product does not contain SVHC's in concentrations above 0.1% weight/weight. |
| | Category of Danger: | Xn: Harmful.<br>Xi: Irritant.<br>N: Dangerous for the environment. |
| | Risk Phrases: | R22: Harmful if swallowed.<br>R31: Contact with acids liberates toxic gas.<br>R36: Irritating to eyes.<br>R36/37: Irritating to eyes and respiratory system.<br>R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |

| | | |
|---|---|---|
| | Safety Phrases: | S7/9: Keep container tightly closed and in a well-ventilated place.<br>S20/21: When using do not eat, drink or smoke.<br>S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.<br>S27/28: After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of soap and tepid water.<br>S29/35: Do not empty into drains; dispose of this material and its container in a safe way.<br>S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.<br>S45: In case of accident or if you feel unwell, seek medical advice immediately. |
| | OECD/High Production Volume (HPV) Chemicals: | Adipic Acid and Sodium Carbonate. |
| | RoHS: | This product does not contain RoHS listed substances in concentrations above the established thresholds. |
| **Japan:** | Poisonous and Deleterious Substances Control Law: | Not Listed. |

## SECTION 16 ADDITIONAL INFORMATION

| **Product Number:** | **Product Name:** |
|---|---|
| 5874316024 | Sanitization Tablets - US Only, 24/PK |
| ZWCL01F50 | Sanitization Chlorine Tablets, 45/PK |
| PF01912 | Sanitization Chlorine Tablets 50/PK |
| PF01873 | Sanitization Chlorine Tablets, Bulk |

**Training Advice:** Seek effective chemical handling training to reduce the hazards associated with this product prior to use.

**Technical Contact:** http://www.millipore.com/support

**Abbreviations Used**

| | |
|---|---|
| ACGIH | American Conference of Government Industrial Hygienists |
| ADR | European agreement on the international carriage of dangerous goods on road |
| CAS | Chemical Abstract Service |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| EPA | United States Environmental Protection Agency |
| IARC | International Agency for Research in Cancer. |
| IATA | International Air Transport Association |
| ICAO | International Civil Aviation Organization |
| IMDG | Regulations regarding the transportation of dangerous goods on ocean-going vessels issued by the International Maritime Organization. |
| $LC_{50}$ | Lethal Concentration 50% is the concentration of a chemical which kills 50% of a sample population |

| | |
|---|---|
| $LD_{50}$ | Lethal Dose 50% is the dose of a chemical which kills 50% of a sample population. |
| $LD_{Lo}$ | Lowest observed lethal dose |
| LEL | Lower Explosive Limit |
| MSFU | Manufacture, Formulation, Supply and Use (Section 13) |
| NIOSH | National Institute of Occupational Safety and Health (US) |
| NTP | National Toxicology Program (US) |
| OSHA | United States Occupational Safety and Health Administration |
| PNOR | Particulate Not Otherwise Regulated |
| PNOS | Particulate Not Otherwise Specified |
| RID | International regulations concerning the international carriage of dangerous goods by rail. |
| RTECS | Registry of Toxic Effects of Chemical Substances (US) |
| STOST | Specific Target Organ Systemic Toxicity |
| UEL | Upper Explosive Limit |
| WHMIS | Workplace Hazardous Materials Information System (Canada) |

This safety data sheet has been prepared to comply with the requirements of the European Union regulation on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) 1906/2006 and ANSI standard Z400.1-1998.

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[1] Centers for Disease Control and Prevention, 1600 Clifton Rd, Atlanta, GA 30333, USA, National Institute for Occupational Health and Safety (NIOSH), Registry of Toxic Effects of Chemical Substances (RTECS) File #XZ1910000, 2009.

[2] Centers for Disease Control and Prevention, 1600 Clifton Rd, Atlanta, GA 30333, USA, National Institute for Occupational Health and Safety (NIOSH), Registry of Toxic Effects of Chemical Substances (RTECS) File # AU8400000, 2009.

[3] Centers for Disease Control and Prevention, 1600 Clifton Rd, Atlanta, GA 30333, USA, National Institute for Occupational Health and Safety (NIOSH), Registry of Toxic Effects of Chemical Substances (RTECS) File #VZ4050000, 2009.

[4] Office of Pesticide Programs, Pesticide Ecotoxicity Database (Formerly: Environmental Effects Database (EEDB)), Environmental Fate and Effects Division, U.S.EPA, Washington, D.C., 2000.

[5] Mattson, V.R., J.W. Arthur, and C.T. Walbridge, Acute Toxicity of Selected Organic Compounds to Fathead Minnows, EPA-600/3-76-097, U.S.EPA, Duluth, MN :12 p., 1976.

[6] Wallen, I.E., W.C. Greer, and R. Lasater, Toxicity to Gambusia affinis of Certain Pure Chemicals in Turbid Waters, Sewage Ind.Wastes 29(6):695-711, 1957.

[7] http://toxnet.nlm.nih.gov/cgi-bin/sis/search/r?dbs+hsdb:@term+@rn+@rel+124-04-9, U.S. National Library of Medicine, 8600 Rockville Pike, Bethesda, MD 20894, 2010.