MILLIPORE

Environment, Health & Safety

MILLIPORE CHLORINE TABLETS

MATERIAL SAFETY DATA SHEET

MILLIPORE CHLORINE TABLETS

SECTION 1 – IDENTIFICATION OF THE SUBSTANCE/ PREPARATION and of THE COMPANY/ UNDERTAKING - CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Identification of the substance or preparation

Trade Name:	Millipore Chlorine Tablets
Catalogue Number:	ZWCL 01F 50
Chemical Name:	Sodium Dichloroisocyanurate, dihydrate with additives not classified as hazardous chemicals.
Product Use:	Tablets for sanitizing water purification equipment.
Other trade names & synonyms	Autoclean® tablets, Sanitization tablets, Chlorine tablets, Sodium Dichloro-S-triazinetrione dihydrate, Sodium Dichloroisocyanurate dihydrate; Chemical Abstract Name: 1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, 1,3-dichloro-, sodium salt, dihydrate

Manufacturer/ Distributor:	Millipore Corporation (Corporate Headquarters)	Millipore S.A.S. (European Headquarters)
Postal Address:	290 Concord Road Billerica MA USA	Boite Postale 116 67124 Molsheim Cedex France
Telephone Number:	978-715-1335	33(0)3 90 46 90 00

CHEMTREC Emergency Telephone Number:

International	**1-703-527-3887 (collect)**
North America	**1-800-424-9300**

MSDS/SDS No.:	**P34137aeH**
Issue Date:	19 December 1991
Rev. Date:	6 October 2006
Revision:	**H**

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

Component	EINECS or ELINCS No.	CAS No.	Content (weight percent)	Symbol letters*	R-phrases**
Sodium Dichloroisocyanurate, dihydrate	220-767-7	51580-86-0	>50	**Xn, N**	**R 22, R 31, R 36/37, R 50/53**
Additives not classified as dangerous per 1999/45/EC	----------	---------- ---	<50	none	none

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

** The full text of the phrase is listed under heading 16.

SECTION 3 - HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

Appearance: Bright white solid (tablet)

Classification: This product is classified as dangerous according to Directive 1999/45/EC.

Xn Harmful

N Dangerous for the environment

Adverse human health effects

Route of Entry	Potential Health Effects and Symptoms of Exposure
Eyes:	Causes severe eye irritation and or burns.
Ingestion	Causes severe digestive tract irritation and or burns.
Inhalation	Causes severe respiratory tract irritation.
Skin:	Causes severe skin irritation and or burns.
Target Organs:	None known.
Medical conditions aggravated by exposure:	No information is available.
Adverse environmental effects:	Sodium Dichloroisocyanurate is considered to be an environmental hazard, and is very toxic to aquatic organisms, including fish.
Adverse physicochemical effects:	Strong oxidizer. Contact with combustible materials may cause a fire.

SECTION 4 - FIRST AID MEASURES

Eyes: Wash eyes immediately with large amounts of water for at least 15 minutes. Occasionally lift the upper and lower lids. Get medical attention immediately

Ingestion: Seek immediate medical attention. Avoid inducing vomiting or giving bicarbonates or carbonates.

Inhalation: Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Skin: Immediately remove contaminated clothing and shoes. Wash with soap or mild detergent and large amounts of water for at least 10 minutes. Seek medical attention immediately.

SECTION 5 - FIRE FIGHTING MEASURES

Flash point and method: N/A

Autoignition Temperature: N/A

Flammability Limits: N/A

Suitable extinguishing media: Sodium dichlorocyanurate dihydrate is not a flammable material, but enhances combustion of other substances. In addition, thermal decomposition takes place at temperatures above 240^{o}C. This decomposition, with liberation of toxic vapors including chlorine, may be stopped by application of a water spray to cool the product. The following are also appropriate for fires involving this product: Non-ammonium dry chemical powder, alcohol-resistant foam, carbon dioxide.

Unsuitable extinguishing media: Do not use fire extinguishers containing ammonium compounds. ABC Dry chemical extinguishers contain ammonium compounds.

Special protective equipment for: Chemically resistant turn-out gear and full face self contained

fire fighters:	breathing apparatus.
Special exposure hazards:	Do not approach from the lee side if not fully protected as above. Under fire conditions, Sodium dichlorocyanurate dihydrate forms toxic and irritating gases and fumes. See section 10.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions

Small Spills:	Eliminate unnecessary traffic in area of the spill. Eliminate or extinguish all sources of ignition. See section 8 for personal protection equipment.
Large Spills:	Evacuate spill area! Maximize local ventilation by increasing exhaust system flow. Return to spill area only if using proper personal protective equipment as indicated in Section 8
Environmental precautions	Do not wash material into sewer, or industrial waste water systems. Sodium dichlorocyanurate dihydrate is toxic to aquatic organisms.
Clean up measures:	Clean up the spilled product as quickly as possible after the release to prevent decomposition due to contamination with other materials. Carefully sweep spilled substance into dry containers, using non-combustible tools and containers. Do not absorb in saw-dust or other combustible absorbents

SECTION 7- HANDLING AND STORAGE

Handling

Avoid contact with eyes and skin. DO NOT handle directly. Wear gloves and use scoop / tongs / tools.

Do not inhale dust or vapors.

May be fatal if swallowed.

Use personal protective equipment outlined in section 8.

Use with adequate ventilation

Minimize dust generation and accumulation

Avoid contact with clothing and other combustible materials

Storage

Store tightly closed container in a cool, dry, well-ventilated area away from combustible and other incompatible substances. See section 10.

Keep away from sources of ignition, such as heat, sparks, and flame

Store away from direct sunlight.

Packaging must be tightly closed after opening to prevent decomposition on contact with humid air.

SECTION 8 - EXPOSURE CONTROL AND PERSONAL PROTECTION

Specific Protection	Normal Handling Conditions	Emergency Response Conditions
Respiratory protection	None required	Full face Self-contained breathing apparatus.
Ventilation	General room ventilation	Local exhaust ventilation
Eye protection	Safety glass with side shields	Full face air purifying respirator, or face shield over half face air purifying respirator. Use cartridges with declared suitability for chlorine gas.
Skin protection	Neoprene, Polyvinyl chloride, or nitrile gloves, laboratory coat, synthetic apron	Chemically resistant jacket, pants, gloves, boots and head covering

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Bright white solid (tablet)
Odour:	Chlorine
Odour threshold:	0.08 ppm (Chlorine)
pH (aqueous solution):	Approximately 6
Melting point:	Decomposed at temperatures above 240°C.
Flash point:	Not applicable
Explosive properties:	Mixtures with sodium or calcium hypochlorite, cause explosive formation of nitrogen trichlorides.
Oxidising properties:	Strong oxidizing agent
Vapor pressure, 20 °C:	Not data found.
Specific Gravity (Water = 1.0):	1.6
Water solubility 20 °C:	500 g/l
Vapor Density (Air = 1.0)	Not applicable
Viscosity	Not applicable
Partition coefficient: n-octanol/water	Not applicable

SECTION 10 - STABILITY AND REACTIVITY

Chemical Stability:	Unstable in humid air, and in contact with water. Begins to lose water of hydration at temperatures in excess of 100°C, and decomposes with the release of toxic and irritating gases and fumes at temperatures in excess of 240°C.
Conditions to avoid	Avoid generating dust, temperatures above 90°C, high humidity.
Incompatible with:	Strong oxidizing agents, moisture, strong bases, ammonium salts, organic and combustible materials, hypochlorites, nitrogenous materials, oils and fats.
Hazardous Decomposition Products:	Chlorine, hydrogen chloride, hypochlorous acid, cyanuric acid, nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, nitrogen.
Hazardous Polymerization	Has not been reported.

SECTION 11 - TOXICOLOGICAL INFORMATION

Dangerous to health effects and symptoms relating to:

Eye contact:	Eye contact causes irritation and/or burns, with redness, swelling, possible cornea damage and permanent vision impairment.
Ingestion:	Ingesting sodium dichloroisocyanurate dihydrate causes gastrointestinal tract irritation and possible burning. Ingestion may result in nausea, abdominal irritation, pain and vomiting. Other acute toxic effects are salivation, lachrymation, dyspnea, weakness, lethargy, diarrhoea and coma.
Inhalation:	Inhaling sodium dichloroisocyanurate dihydrate causes nose, mouth, throat and lung irritation.
Skin contact:	Skin contact causes severe irritation and possible burns.
Carcinogenicity:	Sodium dichloroisocyanurate is not listed as carcinogenic by IARC, NTP, NIOSH or OSHA.
Chronic toxicity	Inhalation: Repeated and prolonged exposure to chlorine evolved from decomposition when wet is a severe respiratory irritant, corrosive and highly toxic. Delayed effects can include shortness of breath, violent headaches, pulmonary oedema and pneumonia. Skin: Repeated and prolonged exposure may produce nonallergic contact dermatitis, characterised by skin redness (erythema) and swelling (oedema) which may progress to vesiculation, scaling and thickening of the epidermis. Eyes: Repeated or prolonged exposure to the irritants generated by moisture contact may produce conjunctivitis.

Toxicology Data No toxicological data is available for this product as an entity.

Selected RTECS data for components:

Compound: 1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, 1,3-dichloro-, sodium salt, dihydrate (100%) - No relevant RTECS data found.

Compound: 1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, 1,3-dichloro-, sodium salt, (100%)
RTECS#: XZ1900000

LD_{50}, oral, rat:	1420 mg/kg
Standard Draize test, skin, rabbit, 500 mg:	Severity: Severe
Standard Draize test, eye, rabbit, 100 mg/24Hr:	Severity: Mild
Teratogenicity:	A teratogen in laboratory animals
Reproductive Effects:	Reproductive effects have been observed in laboratory animals

SECTION 12 - ECOLOGICAL INFORMATION

Sodium Dichloroisocyanurate is considered an environmental hazard, and is toxic to aquatic organisms. Fish LC_{50} reported to be greater than 0.1 mg/l.

SECTION 13- DISPOSAL INFORMATION

European Union:
Millipore Chlorine Tablets must not be disposed with ordinary trash. Incineration at a facility equipped with acid vapor capture equipment is the preferred method of disposal, if this is consistent with national, state, and local regulations. When disposal is required, Millipore Chlorine Tablets should be considered according to the European Waste catalogue (European commission decision of 03/05/01 modifying directives 94/3/CE and 75/442/CE) as part of the following category: 16 09 04.

United States:
Sodium Dichloroisocyanurate dihydrate (CAS # 51580-86-0) is not listed as a RCRA F, P, or U Series hazardous waste. Users, with the assistance of their hazardous waste disposal contractor, should determine if the chemical meets the definition of a waste oxidizer such as D001 (USA) under local regulations. Wastes containing Millipore Chlorine Tablets should be disposed of in a manner consistent with federal, state and local regulations.

SECTION 14 - TRANSPORTATION INFORMATION

The transportation of Millipore Chlorine Tablets, containing sodium dichloroisocyanurate dihydrate, is not regulated by IMDG (sea), ADR (road), RID (rail), ICAO/IATA (air), or USDOT. It should not be confused with Dichloroisocyanuric acid salts, UN2465, which is a Dangerous Goods (Hazardous Material).

SECTION 15 - REGULATORY INFORMATION

Australia:
Hazchem Code: 2ZE
Poisons Schedule Number: S2

California:
No significant Risk Level: Dichloroisocyanuric acid, sodium salt, dihydrate, CAS # 51580-86-0, is not listed

Canada:

This product has a WHMIS classification of **C, D2B**

European Union:

Label health, safety and environmental information (Directives: 67/548/EEC and 1999/45/EC)

Symbols:	**Xn, N**	
Category of danger	Harmful, Dangerous for the environment	
Safety Phrases:	**S 2**	Keep out of the reach of children.
	S 26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	S 41	In case of fire and/or explosion do not breathe fumes.
	S 46	If swallowed, seek medical advice immediately and show this container or label.
	S 8	Keep container dry.
	S 60	This material and its container must be disposed of as hazardous waste.
	S 61	Avoid release to the environment. Refer to special instructions/safety data sheets.

OECD/High Production Volume (HPV) chemicals: The anhydrous salt, sodium dichloroisocyanurate, troclosene sodium, CAS# 2893-78-9, is listed as a high production volume chemical

Japan

Sodium dichloroisocyanurate is not listed under the Poisonous and Deleterious Substances Control Law

United States

Toxic Substances Control Act. 1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, 1,3-dichloro-, sodium salt, CAS# 2893-78-9, is listed on the EPA Toxic Substances Control Act (TSCA) Inventory

Occupational Exposure Limits: No occupational exposure limits have been established for Sodium dichloroisocyanurate

Occupational Exposure Limits: Chlorine

Jurisdiction	Occupational exposure limit, ppm
Belgium, Finland, Sweden (NGV, TGV), United Kingdom	0.5 TWA, 1.0 STEL
ACGIH TLV, Argentina, Austria (MAK), Bulgaria, Columbia, Denmark, Germany (MAK), Jordan, Korea, New Zealand, Norway, Singapore, Vietnam	0.5 TWA
Arab Republic of Egypt, Australia, Japan, The Netherlands (MAC-TGG), The Philippines, Thailand, Turkey.	1.0 TWA
India, Poland	1.0 TWA, 3.0 STEL
United States (OSHA PEL)	1.0 Ceiling
France (VLE), Hungary	1.0 STEL

SECTION 16- ADDITIONAL INFORMATION

Risk phrases referred to under Section 2:

R 22	Harmful if swallowed
R 31	Contact with acids liberates toxic gas.
R 36/37	Irritating to eyes and respiratory system.
R 50/53	Very toxic to aquatic organisms may cause long-term adverse effects in the aquatic environment.

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.
MAC-TGG	Occupational exposure limit, 8 hr. time weight average (The Netherlands)
MAK	Maximum Concentration Values in the Workplace (Austria, Germany(
NGV	8 hours time weighted average exposure limit (Sweden)
NIOSH	National Institute of Occupational Safety and Health (US)
NTP	National Toxicology Program (US)
OSHA	United States Occupational Safety and Health Administration
PEL	Permissible Exposure Limit (US)
RID	International regulations concerning the international carriage of dangerous goods by rail.
RTECS	Registry of Toxic Effects of Chemical Substances (US)
TGV	15 minute short term exposure limit (Sweden)
TLV	Threshold Limit Value
WHMIS	Workplace Hazardous Materials Information System (Canada)

This safety data sheet is revised in order to add content satisfying the requirements of European Union Directive 2001/58/EC and ANSI Z400.1-1998.

The chemical, physical and toxicological properties of this product have not been thoroughly investigated.