



PRODUCT SPECIFICATION

Product Name	Maxi Chlorine Tablets
Alternative Name	Trichloro-S-Triazinetrione
Product Grade	
Specification Reference	MACHTA/1 (10/06)

TYPICAL PROPERTIES

Appearance	White tablet with sharp chlorine like bleach odour
Decomposition Temperature	225°C (437°F)
Specific Gravity	>1 @ 20°C
Bulk Density	Tablets – 1.16 to 1.90 g/cc
pH of 1% Solution	2.7 – 2.9, 3-3.5 at 25°C
Solubility In Water	1/2% @ 25°C
Molecular Weight	232.5

200g Chlorine Tablets

Slow dissolving Chlorine Tablets for use in surface water skimmer baskets or floating containers. In private pools and circulatory feeder units for disinfection of public, school and hotel swimming pools

Pool Treatment

Test pool water daily using a suitable test kit. Dose rate – one tablet per 70m³ (15,000 gallons) pool water when used in a surface water skimmer. Three tablets per 100m³ (22,000 gallons) pool in floating containers. Adjust doses to maintain free chlorine level of 2 mg/litre (2 ppm) chlorine. Public, school, hotel and heated pools will require higher does rates

Application

For unheated pools, tablets may be placed in surface water skimmers. To avoid possible damage where heater is installed, it is advisable to dose 200g Chlorine Tablets using floating containers or in line Chlorinator. Do not place tablets directly onto plastic liners, fibre glass or paint surfaces, or allow localised chlorine concentrations to build up or bleaching may occur

Storage And Handling

Keep in a cool, dry, well ventilated place. Keep container upright and tightly closed. Store away from oxidising and reducing agents, petrol, oil solvents and organic materials, strong acids and alkali, and away from foodstuffs. Keep locked up and out of reach of children

First Aid

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. In case of fire and/or explosion, do not breathe fumes

Recommended Pool Water Conditions	Min	Max
pH	7.2	7.8
Total Alkalinity	100	200 mg/litre
Calcium Hardness	200	500 mg/litre
Cyanuric Acid	30	200 mg/litre
Total Dissolved Solids	less than	1500 mg/litre

NOTES

Exclusion of Liability

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Health and Safety

A Material Safety Data Sheet has been issued describing the health, safety and environmental properties of this product, identifying the potential hazards and giving advice on the handling precautions and emergency procedures. This must be consulted fully before handling, storage and use.



SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

1.1 Product Identifier

Trade Name	Chlorine tablets, Ficlор Maxi, Mini, Tri Tabs, Figard 90, Multifunctional Tablets, Trichloroisocyanuric Acid, Dry
Synonym(s)	Trichloroisocyanuric Acid; TCCA: Trichlor; Trichloro-s-triazinetrione, symclosene
CAS Number	0087-90-1
EINECS Number	201-782-8
Index No	613-031-00-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified use(s)	For formulation into end use products intended for disinfectants, sanitizers, fungicides, bactericides and algacides for pools, spas, hot tubs, industrial recirculating water cooling towers, air washers and evaporative condensers, sewerage treatment, food contact surfaces, laundry and egg sanitising.
Uses advised against	No information given

1.3 Details of the supplier of the safety data sheet

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Hazelbottom Road
Cheetham
Manchester
M8 0GR
Tel: 44(0)161 205 4454
Fax: 44(0) 161 203 4298
Email: msds@tennantsdistribution.com

1.4 Emergency telephone number

Tel: 44(0) 844 3350001 (24 hours)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 Regulation 1272/2008 (CLP)

Ox. Sol.2	H272	May intensify fire; oxidizer
Acute Tox. 4.	H302	Harmful if swallowed
Eye irrit. 2	H319	Causes serious eye irritation
STOT SE3	H335	May cause respiratory irritation
Aquatic Acute1	H400	Very toxic to aquatic life
Aquatic Chronic1	H410	Very toxic to aquatic life with long lasting effects

Additional information EUH031 – contact with acids liberates toxic gas

2.1.2 EEC Directive 67/548/EEC & Directive 1999/45/EC

O; R8	Contact with combustible material may cause fire
R31	Contact with acids liberates toxic gas
R36/37	Irritating to eyes and respiratory system
Harmful (X _n), R22	Harmful if swallowed
Dangerous for the environment; N R50	Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

2.2 Label elements

According to Regulation (EC) No. 1272/2008 (CLP).



Signal word(s)

Danger.



Hazard statement(s)

H272 May intensify fire; oxidizer
H302 Harmful if swallowed
H319 Causes serious eye irritation
H335 May cause respiratory irritation
H410 Very toxic to aquatic life with long lasting effects
EUH031 Contact with acids liberates toxic gas

Precautionary statement(s)

P210 Keep away from heat / sparks / open flames / hot surfaces – no smoking
P280 Wear protective gloves / protective clothing / eye protection / face protection
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310 Immediately call a POISON CENTRE or a doctor / Physician

2.3 Other hazards None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

Trichloroisocyanuric Acid

CAS Number	EINECS Number	ECC Index Number	Classification according to Regulation 1272/2008	Classification according to Directive 67/548/EEC
0087-90-1	201-782-8	613-031-00-5	Ox. Sol. H272 Acute Tox. 4 H302 Eye Irrit. 2 H319 STOT SE3 H335 Aquatic Acute 1 H400 Aquatic Chronic 1 H410 EUH031 (in accordance with CLP 1272/2008)	O; R8 R31 Xi; R36/37 Xn; R22 N; R50/53

4. FIRST AID MEASURES

4.1 Description of first aid measures

General Advice

Never give an unconscious person anything to drink

Inhalation

In case of dust inhalation or breathing fumes released from heated material, remove person to fresh air. Keep them quiet and warm. Apply artificial respiration if necessary and get medical attention immediately.

Skin contact

Remove contaminated clothing. Wash skin thoroughly with mild soap and plenty of water for at least 15 minutes. Wash clothing before re-use. Get medical attention immediately.

Eye contact

Holding the eye lids apart, flush eyes promptly with copious flowing water for at least 20 minutes. Get medical attention immediately.

Ingestion

If swallowed, wash mouth thoroughly with plenty of water and give water to drink. Get medical attention immediately. NEVER GIVE AN UNCONSCIOUS PERSON ANYTHING TO DRINK

4.2 Most important symptoms and effects, both acute and delayed

Ocular – Severe irritation and / or burns can occur following eye exposure. Contact may cause impairment of vision and corneal damage.

Dermal – Dermal exposure can cause severe irritation and / or burns characterised by redness, swelling and scab formation. Repeated skin exposure may cause tissue destruction due to the corrosive nature of the product.

Inhalation – Irritation to the nose, mouth, throat and lungs. It may also cause burns to the respiratory tract with the production of lung oedema that can result in shortness of breath, wheezing, choking, chest pain, and impairment of lung function.

Ingestion - Irritation and / or burns can occur to the entire gastrointestinal tract, including the stomach and intestines, characterised by nausea, vomiting, diarrhoea, abdominal pain, bleeding and / or tissue ulceration.

4.3 Indication of any immediate medical attention and special treatment needed

Corrosive. In case of ingestion DO NOT induce vomiting. No specific antidote. Treat symptomatically and supportively.

Medical conditions aggravated by exposure

Asthma, respiratory and cardiovascular disease.



5. FIRE FIGHTING MEASURES

5.1 Extinguishing Media

Suitable extinguishing media: Water spray

5.2 Special hazards arising from the substance or mixture

When heated to decomposition, may release poisonous and corrosive fumes of nitrogen trichloride, chlorine, nitrous oxides, cyanates, carbon monoxide and carbon dioxide.

5.3 Advice for fire-fighters

Cool containers with water spray. Fire fighters should wear full protective clothing and self contained breathing apparatus (SCBA) in positive pressure mode.

On small fires, use water spray or fog.

On large fires, use heavy deluge or fog stream. Flooding amounts of water may be required before extinguishment can be accomplished.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For small spills in a well ventilated area, wear a NIOSH approved half-face of full face tight fitting respirator or a loose fitting powered air purifying respirator equipped with chlorine cartridges. Chemical goggles should be worn when using a half faced respirator. In addition to respiratory protection, wear coveralls, chemical resistant gloves, chemical resistant footwear and chemical resistant headgear for overhead exposure.

For cleanup of large spills in a confined area, wear full face respirator with chlorine cartridges or a positive pressure supplied air respirator. Additionally, body protection should be impervious clothing covering entire body to prevent personal contact with material.

If this material becomes damp / wet or contaminated in a container, the formation of nitrogen trichloride gas may occur and an explosive condition may exist.

6.2 Environmental precautions

Prevent entry into sewers and watercourses.

6.3 Methods and material for containment and cleaning up

Hazardous concentrations in air may be found in local spill area and immediately downwind.

If spill material is still dry, do not put water directly on this product as a gas evolution may occur.

Soil – Do not contaminate spill material with any organic materials, ammonia, ammonium salts or urea. Clean up all spill material with clean, dry dedicated equipment and place in a clean dry container.

Water – This material is heavier than and soluble in water. Stop flow of material into water as soon as possible. Begin monitoring for available chlorine and pH immediately.

In air – Vapours may be suppressed by the use of water fog.

6.4 Reference to other sections

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid bodily contact. Upon contact with skin or eyes, wash off with water.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area. Product has an indefinite shelf life limitation.

Do not store at temperatures above 60°C / 140°F

Available chlorine loss can be as little as 0.1% per year at ambient temperatures.

7.3 Specific end use(s)

Provided in sections 7.1, 7.2

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components	Trichloroisocyanuric acid 0087-90-1
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Weight	98 - 100
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ACHIH-TLV Data	Not determined
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UK (WEL) – TWA	Not determined
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Netherlands national MAC data	Not determined
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8.2 Exposure controls

Ventilation requirements

Use local exhaust ventilation to minimise dust and chlorine levels where industrial use occurs.

Otherwise, ensure good general ventilation.

Personal protective equipment.

Respiratory protection

When dusty conditions are encountered, wear a NIOSH / OSHA full-face respirator with chlorine cartridges for protection against gas and dust / mist pre-filter



Hand protection Neoprene gloves	
Eye protection Use chemical safety glasses to avoid eye contact. Where industrial use occurs, chemical goggles may be required.	
Skin protection Body covering clothes and boots.	
Hygiene Measures Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Safety shower and eye bath should be provided.	
9. PHYSICAL AND CHEMICAL PROPERTIES	
9.1 Information on basic physical and chemical properties	
Appearance	White granules or tablet form product
Colour	White
Odour	Sharp, chlorine-like bleach
Odour threshold	Not determined
pH in water solution	2.7 – 2.9 (1% solution)
Melting point / range	225 – 230°C (decomposes)
Boiling point/boiling range	Not applicable (decomposes)
Flash point	Not applicable
Evaporation rate (ether = 1)	Not applicable under standard conditions
Vapour Density	Not applicable under standard conditions
Vapour pressure	Not applicable under standard conditions
Specific gravity	> 1
Bulk Density	Granular – 0.89 – 1.1 g/cc Tablets – 1.6 – 1.9 g/cc
Water solubility	1.2g / 100ml at 25°C
Solubility in other solvents	Not available
Auto-ignition temperature	Not applicable
Decomposition temperature	225°C (437°C)
Viscosity, dynamic	No data available
9.2 Other information	
Oxidising potential	Oxidiser
Explosive properties	Not available
Particle size	Not available
10. STABILITY AND REACTIVITY	
10.1 Reactivity Contact with small amounts of water may result in exothermic reaction with the liberation of toxic fumes.	
10.2 Chemical stability Stable under normal conditions	
10.3 Possibility of hazardous reactions Hazardous polymerisation will not occur	
10.4 Conditions to avoid Heating above 225°C	
10.5 Incompatible materials Do not package in paper or cardboard. Organic materials, reducing agents, nitrogen containing materials, other oxidisers, acids, bases, oils, grease, sawdust, dry fire extinguishers containing monoammonium compounds.	
11. TOXICOLOGICAL INFORMATION	
11.1 Information on toxicological effects	
Components:	
Acute Toxicity	
-Rat Oral LD50	809 mg/kg
- Rabbit dermal LD50	>2000 mg/kg
Serious eye damage / irritation	Corrosive
Skin corrosion / irritation	Corrosive



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Respiratory or skin sensitization	Not a sensitizer
Mutagenicity	Not a mutagenic in five salmonella strains and one E.Coli strain with or without mammalian microsomal activation.
Carcinogenicity	Not classified by IARC, OSHA, EPA not included in NTP 11 th Report on carcinogens.
Reproductive toxicity	There are no known or reported effects on reproductive functions or foetal development. Toxicological investigation indicates it does not affect reproductive function or foetal development.
Specific Target Organ Toxicity (STOT) – Single exposure	No effects on specific target organs have been identified.
Specific Target Organ Toxicity (STOT) – Repeat exposure	Prolonged exposure may cause damage to the respiratory system. Chronic inhalation exposure may cause impairment of lung function and permanent lung damage
Aspiration hazard	Not expected to occur
Medical conditions aggravated by exposure	Asthma, respiratory and cardiovascular disease
12. ECOLOGICAL INFORMATION	
12.1 Toxicity	
Aquatic toxicity:	
96 hour – LC50, Fish	0.32 mg/l (Rainbow trout) 0.30 mg/l (Bluegill sunfish)
- 48 hour – LC50, Daphnia magna	0.21 mg/l
Avian Toxicity:	
- Oral LD50, Mallard Duck	1600 mg/kg
- Dietary LC50, Mallard Duck	> 10,000 ppm
- Dietary LC50, bobwhite quail	7422 ppm
12.2 Persistence and degradability	
No data	
12.3 Bio accumulative potential	
No data	
12.4 Mobility in soil	
No data	
12.5 Results of PBT and vPvB assessment	
No data	
12.6 Other adverse effects	
Germany, water endangering classes (WGK) 3	
13. DISPOSAL CONSIDERATIONS	
13.1 Waste treatment methods	
Dispose of in a safe manner in accordance with local / national regulations.	
14. TRANSPORT INFORMATION	
14.1 UN Number	2468
14.2 UN Proper Shipping Name	Trichloroisocyanuric Acid Dry
14.3 Transport hazard class	5.1 – Oxidising substances
14.4 Packing group	II
14.5 Environmental	Environmentally Hazardous Substance / Marine pollutant
14.6 Special precautions for users	None
15. REGULATORY INFORMATION	
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture	
EU	Reported in EINECS
15.2 Chemical safety assessment	
16. OTHER INFORMATION	
Source of key data used to compile the data sheet	
Supplier information	
Modifications from last revision	
The Safety Data Sheets have been revised throughout to conform to EC Directive 1907/2006 and amendments	
Date: 27/04/11	