Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 10/04/2017 Reviewed on 10/04/2017

1 Identification

· **Product identifier**

· **Trade name: Chloride T2**

· **Catalogue number:** 00515921, 515920BT, 515921BT, 00515920BT, 00515921BT, 4515920BT, 4515921BT, 00515929BT

· **Application of the substance / the mixture:** Reagent for water analysis

· **Manufacturer/Supplier:**
Tintometer Inc.
6456 Parkland Drive
Sarasota, FL 34243
USA
phone: (941) 756-6410
fax: (941) 727-9654
www.lovibond.us
Made in Germany

· **Emergency telephone number:** + 1 866 928 0789 (English, French, Spanish)

*
2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS05 Corrosion

Skin Corr. 1B	H314	Causes severe skin burns and eye damage.
Eye Dam. 1	H318	Causes serious eye damage.

GHS09 Environment

Aquatic Acute 1	H400	Very toxic to aquatic life.
Aquatic Chronic 1	H410	Very toxic to aquatic life with long lasting effects.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Hazard Communication Standard (HCS).
· **Hazard pictograms**

GHS05 GHS09

· **Signal word** Danger
· **Hazard-determining components of labeling:**
potassium monopersulfate
silver nitrate
· **Hazard statements**
H314 Causes severe skin burns and eye damage.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
· **Precautionary statements**

P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a doctor.

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P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Other hazards** No further relevant information available.

*
3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of organic and inorganic compounds
· **Composition and Information on Ingredients:**
Percent ranges are used due to the confidential product information.

CAS: 70693-62-8 EINECS: 274-778-7	potassium monopersulfate Skin Corr. 1B, H314; Eye Dam. 1, H318; Acute Tox. 4, H302	10–20%
CAS: 7761-88-8 EINECS: 231-853-9 Index number: 047-001-00-2	silver nitrate Ox. Sol. 2, H272; Skin Corr. 1B, H314; Aquatic Acute 1, H400 (M=1000); Aquatic Chronic 1, H410 (M=100); Acute Tox. 4, H302	1–≤2.5%

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** Supply fresh air or oxygen; call for doctor.
· **After skin contact:**
Immediately wash with polyethylene glycol 400.
Immediately rinse with plenty of water.
Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.
· **After eye contact:**
Rinse opened eye for several minutes (at least 15 min) under running water.
Call a doctor immediately.
· **After swallowing:**
Rinse out mouth and then drink 1-2 glasses of water.
Do not induce vomiting; immediately call for medical help.
· **Most important symptoms and effects, both acute and delayed**
after inhalation:
coughing
breathing difficulty
damage to the affected mucous membranes possible
after swallowing:
strong caustic effect
sickness
vomiting
cramps
cardiovascular disorders
· **Danger:**
Danger of impaired breathing.
Danger of gastric perforation.
· **Indication of any immediate medical attention and special treatment needed:**
If swallowed or in case of vomiting, danger of entering the lungs.
Later observation for pneumonia and pulmonary edema.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
· **Special hazards arising from the substance or mixture**
The product is not combustible.
Formation of toxic gases is possible during heating or in case of fire.
In case of fire, the following can be released:
nitrous gases
Sulfur oxides (SOx)
Nitrogen oxides (NOx)

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Oxygen (O_2)
Potassium oxide
Sodium oxide

· **Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
· **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
· **Advice for non-emergency personnel:**
Wear protective equipment. Keep unprotected persons away.
Avoid substance contact.
Ensure adequate ventilation
Use respiratory protective device against the effects of fumes/dust/aerosol.
· **Advice for emergency responders:** Protective equipment: see section 8
· **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
· **Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Pick up mechanically.
Dispose contaminated material as waste according to item 13.
· **Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Open and handle receptacle with care.
Prevent formation of dust.
Keep away from heat and direct sunlight.
· **Advice on safe handling:** No special precautions are necessary if used correctly.
· **Hygiene measures:**
Do not inhale dust / smoke / mist.
Do not get in eyes, on skin, or on clothing.
Take off immediately all contaminated clothing.
Wash hands before breaks and at the end of work.
Do not eat, drink or smoke when using this product.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store in a cool location.
· **Information about storage in one common storage facility:** Store away from flammable substances.
· **Further information about storage conditions:**
Protect from heat and direct sunlight.
Store in the dark.
Protect from exposure to the light.
Store in dry conditions.
Protect from humidity and water.
This product is hygroscopic.
· **Recommended storage temperature:** 20°C +/- 5°C (approx. 68°F)
· **Specific end use(s)** No further relevant information available.

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8 Exposure controls/personal protection

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
CAS: 70693-62-8 potassium monopersulfate	
TLV (USA)	Long-term value: 0.1 mg/m³ as Persulfates
EL (Canada)	Long-term value: 0.1 mg/m³ as persulfate
CAS: 7761-88-8 silver nitrate	
PEL (USA)	Long-term value: 0.01 mg/m³ as Ag
REL (USA)	Long-term value: 0.01 mg/m³ as Ag
TLV (USA)	Long-term value: 0.01 mg/m³ as Ag
EL (Canada)	Short-term value: 0.03 mg/m³ Long-term value: 0.01 mg/m³ as Ag

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Engineering measures:**
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.
See item 7.

· **Personal protective equipment:**
· **Breathing equipment:** Use respiratory protective device against the effects of fumes/dust/aerosol.
· **Recommended filter device for short term use:** Filter P2
· **Protection of hands:**
Protective gloves
Preventive skin protection by use of skin-protecting agents is recommended.
After use of gloves apply skin-cleaning agents and skin cosmetics.
· **Material of gloves**
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
· **Penetration time of glove material**
Value for the permeation: Level ≤ 1 (10 min)
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:** Tightly sealed goggles
· **Body protection:** Protective work clothing

· **Limitation and supervision of exposure into the environment:**
Do not allow product to reach sewage system or any water course.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **Appearance:**	
Form / Physical state:	Tablets
Color:	Whitish
· **Odor:**	Odorless
· **Odor threshold:**	Not applicable.
· **pH-value (12.9 g/l) at 20 °C (68 °F):**	2,2
· **Melting point/freezing point:**	Not determined.
· **Initial boiling point and boiling range:**	Not determined.
· **Flash point:**	Not applicable.
· **Flammability (solid, gas):**	The product is not combustible.
· **Decomposition temperature:**	Not determined.

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· **Auto-ignition temperature:**	Product is not self-igniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Flammability or explosive limits:**	
Lower:	Not applicable.
Upper:	Not applicable.
· **Oxidizing properties:**	CAS 70693-62-8 : Oxidizing potential
· **Vapor Pressure:**	Not applicable.
· **Density at 20 °C (68 °F):**	1,5 g/cm³ (12.52 lbs/gal)
· **Relative density:**	Not determined.
· **Vapor density:**	Not applicable.
· **Evaporation rate:**	Not applicable.
· **Solubility(ies)**	
Water:	Soluble.
· **Partition coefficient (n-octanol/water):**	Not applicable.
· **Viscosity:**	Not applicable.
· **Solvent content:**	
Organic solvents:	0,0 %
Solids content:	100,0 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** see section "Possibility of hazardous reactions"
· **Chemical stability**
Stable at ambient temperature (room temperature).
sensitivity to light
· **Possibility of hazardous reactions**
Reacts with alcohols.
Reacts with halogenated compounds.
Reacts with alkali (lyes).
Reacts with reducing agents.
· **Conditions to avoid** To avoid thermal decomposition do not overheat.
· **Incompatible materials:**
combustible materials
aluminum
steel
· **Hazardous decomposition products:**
sodium monoxide
In case of fire: see section 5.

* 11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:** Based on available data, the classification criteria are not met.

· **LD/LC50 values that are relevant for classification:**		
CAS: 70693-62-8 potassium monopersulfate		
Oral	LD50	1204 mg/kg (rat) (IUCLID)
Inhalative	LC50.	> 5 mg/l/4h (rat)
CAS: 7761-88-8 silver nitrate		
Oral	LD50	1173 mg/kg (rat) (RTECS)

· **Primary irritant effect:**
· **on the skin:** Causes severe skin burns.

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· **on the eye:**
Causes serious eye damage.
Risk of blindness!

· **Sensitization:** No sensitizing effects known.
· **Information on components:** CAS 70693-62-8: Sensitization possible in predisposed persons.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**	
CAS: 999-99-9	one or more ingredient(s) Group 3: Not classifiable as to carcinogenicity to humans

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

· **Other information:** see section 8 / 15

· **Synergistic Products:** None

· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):** The following statements refer to the mixture:
· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
· **Carcinogenicity** Based on available data, the classification criteria are not met.
· **Reproductive toxicity** Based on available data, the classification criteria are not met.

· **STOT (specific target organ toxicity) -single exposure** Based on available data, the classification criteria are not met.
· **STOT (specific target organ toxicity) -repeated exposure** Based on available data, the classification criteria are not met.
· **Aspiration hazard** Based on available data, the classification criteria are not met.

· **Additional toxicological information:**
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**	
CAS: 70693-62-8 potassium monopersulfate	
NOEC	32 mg/l/96h (zebrafish) (IUCLID)
CAS: 7761-88-8 silver nitrate	
LC50	0.00022 mg/l/48h (Daphnia magna) (OECD 202) (Merck, Ag-Ion)
EC10	0.0021 mg/l (Daphnia magna) (21) (Registrant, ECHA)
NOEC	0.00037 mg/l (fathhead minnow) (OECD 210) (Merck)
LC50	0.0012 mg/l/96h (fathhead minnow) (US-EPA) (Merck, Ag-Ion)

· **Bacterial toxicity:** sulfates toxic > 2.5 g/l
· **Other information:**
Toxic for fish:
sulfates > 7 g/l
· **Persistence and degradability** No further relevant information available.
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Other adverse effects**
Depending on the concentration, phosphorus and/or nitrogen compounds may contribute to the eutrophication of water supplies.
Avoid transfer into the environment.

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13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Hand over to hazardous waste disposers.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· **UN-Number**	
· **DOT, IMDG, IATA**	UN3260
· **UN proper shipping name**	
· **DOT**	Corrosive solid, acidic, inorganic, n.o.s. (potassium monopersulfate triple salt, Silver nitrate)
· **IMDG**	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (potassium monopersulfate triple salt, SILVER NITRATE), MARINE POLLUTANT
· **IATA**	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (potassium monopersulfate triple salt, SILVER NITRATE)
· **Transport hazard class(es)**	
· **DOT**	
· **Class**	8 Corrosive substances
· **Label**	8
· **IMDG**	
· **Class**	8 Corrosive substances
· **Label**	8
· **IATA**	
· **Class**	8 Corrosive substances
· **Label**	8
· **Packing group**	
· **DOT, IMDG, IATA**	II
· **Environmental hazards:**	Product contains environmentally hazardous substances: silver nitrate
· **Marine pollutant:**	Yes Symbol (fish and tree)
· **Special precautions for user**	Warning: Corrosive substances
· **Danger code (Kemler):**	80
· **EMS Number:**	F-A,S-B
· **Segregation groups**	Acids

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· **Stowage Category**	B
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **DOT**	
· **Quantity limitations**	On passenger aircraft/rail: 15 kg On cargo aircraft only: 50 kg
· **Limited quantity (LQ):**	1 kg
· **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· **IMDG**	
· **Limited quantities (LQ)**	1 kg
· **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g

* 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· **Section 355 (Extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

CAS: 7761-88-8	silver nitrate

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **New Jersey Right-to-Know List:**

CAS: 7761-88-8	silver nitrate

· **New Jersey Special Hazardous Substance List:**

CAS: 7761-88-8	silver nitrate	CO

· **Pennsylvania Right-to-Know List:**

CAS: 7757-82-6	sodium sulphate
CAS: 7761-88-8	silver nitrate

· **Pennsylvania Special Hazardous Substance List:**

CAS: 7757-82-6	sodium sulphate	E
CAS: 7761-88-8	silver nitrate	E

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **Information about limitation of use:** Employment restrictions concerning young persons must be observed.

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· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

* 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**
H272 May intensify fire; oxidizer.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

· **Date of preparation / last revision** 10/04/2017 / 8

· **Abbreviations and acronyms:**
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organisation
ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
EC50: effective concentration, 50 percent (in vivo)
OECD: Organisation for Economic Co-operation and Development
STOT: specific target organ toxicity
SE: single exposure
RE: repeated exposure
EC50: half maximal effective concentration
IC50: hallf maximal inhibitory concentration
NOEL or NOEC: No Observed Effect Level or Concentration
ACGIH® - American Conference of Governmental Industrial Hygienists
•A1 - Confirmed human carcinogen
•A2 - Suspected human carcinogen
•A3 - Confirmed animal carcinogen with unknown relevance to humans
•A4 - Not classifiable as a human carcinogen
•A5 - Not suspected as a human carcinogen
IARC - International Agency for Research on Cancer
•Group 1 - Carcinogenic to humans
•Group 2A - Probably carcinogenic to humans
•Group 2B - Possibly carcinogenic to humans
•Group 3 - Not classifiable as to carcinogenicity to humans
•Group 4 - Probably not carcinogenic to humans
NTP - National Toxicology Program, U.S. Department of Health and Human Services
•Group K - Known to be Human Carcinogens
•Group R - Reasonably Anticipated to be Human Carcinogens
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Ox. Sol. 2: Oxidizing solids – Category 2
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

· **Sources**
Data arise from safety data sheets, reference works and literature.
GESTIS- Stoffdatenbank (Substance Database, Germany)
ECHA: European CHemicals Agency http://echa.europa.eu
IUCLID (International Uniform Chemical Information Database)
RTECS (Registry of Toxic Effects of Chemical Substances)

· *** Data compared to the previous version altered.**