

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

Printing date 03/16/2017

Reviewed on 03/16/2017

1 Identification

- **Product identifier**
- **Trade name:** **Chloride-52**
- **Catalogue number:** 424272
- **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**



GHS06 Skull and crossbones

Acute Tox. 3 H311 Toxic in contact with skin.



GHS08 Health hazard

STOT RE 2 H373 May cause damage to the kidneys through prolonged or repeated exposure.



GHS09 Environment

Aquatic Acute 1 H400 Very toxic to aquatic life.

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



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H332 Harmful if inhaled.

- **Label elements**

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

- **Hazard pictograms**



GHS06



GHS08



GHS09

- **Signal word** Danger

- **Hazard-determining components of labeling:**

ethane-1,2-diol

mercury dithiocyanate

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Hazard statements

- H302+H332 Harmful if swallowed or if inhaled.
 H311 Toxic in contact with skin.
 H373 May cause damage to the kidneys through prolonged or repeated exposure.
 H400 Very toxic to aquatic life.
 H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

- P260 Do not breathe mist/vapours/spray.
 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/shower.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P312 Call a POISON CENTER/doctor if you feel unwell.
 P405 Store locked up.

Other hazards

- At long or repeated contact with skin it may cause dermatitis due to the degreasing effect of the solvent.
 CAS 107-21-1 / 592-85-8: Danger through skin absorption.
 Vapours of the product are heavier than air and may accumulate on the ground, in mines, drains or cellars with higher concentration.

* 3 Composition/information on ingredients

Chemical characterization: Mixtures**Composition and Information on Ingredients:**

The percent content of the mercury compound mentioned below refers to the amount of the pure mercury therein.

CAS: 107-21-1 EINECS: 203-473-3 Index number: 603-027-00-1 RTECS: KW 2975000	ethane-1,2-diol ⚠ STOT RE 2, H373; ⚠ Acute Tox. 4, H302	90-100%
CAS: 592-85-8 EINECS: 209-773-0 Index number: 080-002-00-6 RTECS: XL 1550000	mercury dithiocyanate ⚠ Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330; ⚠ STOT RE 2, H373; ⚠ Aquatic Acute 1, H400 (M=100); Aquatic Chronic 1, H410 (M=100)	0.25-≤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:**

- Personal protection for the First Aider.
 Immediately remove any clothing soiled by the product.
 Remove breathing apparatus only after contaminated clothing have been completely removed.

After inhalation:

- Supply fresh air or oxygen; call for doctor.
 In case of irregular breathing or respiratory arrest provide artificial respiration.

After skin contact:

- Immediately wash with water and soap and rinse thoroughly.
 Seek immediate medical advice.

• **After eye contact:** Rinse opened eye for several minutes (at least 15 min) under running water. Then consult a doctor.

After swallowing:

- Rinse out mouth and then drink 1-2 glasses of water.
 Induce vomiting, if person is conscious. Seek medical help.

Most important symptoms and effects, both acute and delayed

- after swallowing and inhalation:
 metallic taste
 sickness
 vomiting
 pain
 bloody diarrhoea
 drop in blood pressure
 CNS disorders
 ataxia (impaired locomotor coordination)
 fatigue

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- **Danger:**
 - Danger of pulmonary edema.
 - Danger of circulatory collapse.
 - Danger of disturbed cardiac rhythm.
- **Indication of any immediate medical attention and special treatment needed:**
 - Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
 - CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture**
 - Can burn in fire.
 - Can form explosive gas-air mixtures.
 - Formation of toxic gases is possible during heating or in case of fire.
 - In case of fire, the following can be released:
 - nitrous gases
 - mercury vapours
 - Hydrogen cyanide (prussic acid HCN)
 - Carbon monoxide (CO) and carbon dioxide (CO₂)
- **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.
 - 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.
 - Dilute with plenty of water.
- **Methods and material for containment and cleaning up:**
 - Ensure adequate ventilation.
 - Absorb with liquid-binding material (sand, diatomite, universal binders).
 - 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**
- **Advice on safe handling:**
 - Open and handle receptacle with care.
 - Work only in fume cabinet.
 - Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
 - Prevent formation of aerosols.
 - Keep ignition sources away - Do not smoke.

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- **Hygiene measures:**

Do not inhale gases / fumes / aerosols.
 Avoid contact with the skin.
 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.
 Protect from heat.

- **Information about storage in one common storage facility:**

Store away from oxidizing agents.
 Do not store together with acids.

- **Further information about storage conditions:**

Store under lock and key and with access restricted to technical experts or their assistants only.
 Store in cool, dry conditions in well sealed receptacles.
 Protect from heat and direct sunlight.
 Protect from exposure to the light.
 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.

* 8 Exposure controls/personal protection

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

CAS: 107-21-1 ethane-1,2-diol

TLV (USA)	Short-term value: NIC-127* NIC-10** mg/m ³ , NIC-50* ppm Long-term value: NIC-63.5* mg/m ³ , NIC-25* ppm Ceiling limit value: (100) mg/m ³ (H); *inh. fraction + vapor, P:**inh. fraction, H
EL (Canada)	Short-term value: 20** mg/m ³ Long-term value: 10** mg/m ³ Ceiling limit value: 100* mg/m ³ , 50*** ppm *Aerosol; **Particulate; ***Vapour
EV (Canada)	Ceiling limit value: 100 mg/m ³

- **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.

- **Personal protective equipment:**

- **Breathing equipment:** Use respiratory protective device against the effects of fumes/dust/aerosol.

- **Recommended filter device for short term use:** Combination filter A-P3

- **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:** Safety glasses

- **Body protection:** Protective work clothing

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- **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:	Fluid
Color:	Colorless
· Odor: Sweetish	
· Odor threshold: Not determined.	
· pH-value at 20 °C (68 °F): 5.1	
· Melting point/freezing point: Not determined.	
· Initial boiling point and boiling range: Not determined.	
· Flash point: 111 °C (232 °F) (CAS107-21-1, c.c.)	
· Flammability (solid, gas): Not determined.	
· Decomposition temperature: > 110 °C (> 230 °F) (CAS 592-858)	
· Auto-ignition temperature: Product is not self-igniting.	
· Danger of explosion: Product is not explosive. However, formation of explosive air/vapor mixtures are possible.	
· Flammability or explosive limits:	
Lower:	3.2 Vol % (CAS 107-21-1)
Upper:	15.3 Vol % (CAS 107-21-1)
· Oxidizing properties: none	
· Vapor Pressure: Not determined.	
· Density at 20 °C (68 °F): 1.11 g/cm ³ (9.263 lbs/gal)	
· Relative density: Not determined.	
· Vapor density: Not determined.	
· Evaporation rate: Not determined.	
· Solubility(ies)	
Water:	Fully miscible.
· Partition coefficient (n-octanol/water): Not determined.	
· Viscosity: Not determined.	
· Solvent content:	
Organic solvents:	> 90 %
Solids content:	< 2.5 %
· Other information No further relevant information available.	

* 10 Stability and reactivity

- **Reactivity** Fumes can combine with air to form an explosive mixture.
- **Chemical stability** Stable at ambient temperature (room temperature).
- **Possibility of hazardous reactions**
Contact with acids releases toxic gases.
Reacts with acids, alkalis and oxidizing agents.
Reacts with peroxides.
- **Conditions to avoid** strong heating
- **Incompatible materials:**
aluminum
various plastics
- **Hazardous decomposition products:**
Flammable gases/vapors
Toxic metal compounds

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see section 5

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*11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:** Classification according to calculation procedure.

· Acute toxicity estimate (ATE_(MIX)) - Calculation method:

Oral	GHS ATE _(MIX)	439 mg/kg (.)
Dermal	GHS ATE _(MIX)	336 mg/kg (.)
Inhalative	GHS ATE _(MIX)	3.4 mg/l/4h (aerosol)

· LD/LC50 values that are relevant for classification:

CAS: 107-21-1 ethane-1,2-diol

Oral	LD50	500 mg/kg (ATE)
	LD50	4700 mg/kg (rat) (IUCLID)
	LDLo	786 mg/kg (hmn) (RTECS)
Dermal	LD50	9530 mg/kg (rabbit)
Inhalative	LC50	> 2.5 mg/l/6h (rat) (Aerosol) (Registrant, ECHA)

CAS: 592-85-8 mercury dithiocyanate

Oral	LD50	46 mg/kg (rat) (RTECS)
Dermal	LD50	5 mg/kg (ATE)
Inhalative	LC50	0.05 mg/l/4h (ATE)

- **Primary irritant effect:**
- **on the skin:** Based on available data, the classification criteria are not met.
- **on the eye:** Based on available data, the classification criteria are not met.

· Information on components:

CAS: 107-21-1 ethane-1,2-diol

Irritation of skin	OECD 404	(rabbit: no irritation)
Irritation of eyes	OECD 405	(rabbit: no irritation)

- **Sensitization:** Based on available data, the classification criteria are not met.

· Information on components:

CAS: 107-21-1 ethane-1,2-diol

Sensitization	Patch test (human)	(negative)
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· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

CAS: 592-85-8	mercury dithiocyanate	3
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· 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 (carcinogenicity, 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**

May cause damage to the kidneys through prolonged or repeated exposure.

- **Aspiration hazard** Based on available data, the classification criteria are not met.

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- **Information on components:**

CAS 107-21-1: Did not show carcinogenic effects in animal experiments.

CAS: 107-21-1 ethane-1,2-diol	
OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test) (Escheria coli / Salmonella typhimurium)

- **Additional toxicological information:**

Mercury compounds have a cytotoxic and protoplasmatoxic effect.

The principal signs manifest themselves in the CNS.

- **Experience with humans:**

CAS 592-85-8: Can cause liver damage.

CAS 592-85-8 / 107-21-1: Can cause kidney damages.

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

CAS: 107-21-1 ethane-1,2-diol	
LC50	> 100 mg/l/48h (Daphnia magna) (OECD 202)
EC5	> 10000 mg/l (Entosiphon sulcatum) (72h)
LC50	> 18500 mg/l/96h (rainbow trout)
CAS: 592-85-8 mercury dithiocyanate	
EC50	0.0052 mg/l/48h (Daphnia magna)
IC50	0.162 mg/l/96 h (Desmodesmus subspicatus) (Merck; Ankistrodesmus falcatus)
LC50	0.15 mg/l/96h (fathhead minnow)

- **Bacterial toxicity:**

CAS: 107-21-1 ethane-1,2-diol	
EC5	> 10000 mg/l (Pseudomonas putida) (DIN 38412, 16h)
EC50	> 10000 mg/l (Pseudomonas putida) (16h)

- **Persistence and degradability**

CAS: 107-21-1 ethane-1,2-diol	
OECD 301 A	100% / 10d (.) (Die-Away Test)
OECD 301 C	83-96% / 14d (.) (Modified MITI Test)

- **Bioaccumulative potential**

CAS: 107-21-1 ethane-1,2-diol	
log Pow	-1.36 (.) (experimental)
CAS: 592-85-8 mercury dithiocyanate	
log Pow	-0.57 (.)

- **Mobility in soil** No further relevant information available.

- **Other adverse effects** Avoid transfer into the environment.

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:**

Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

Disposal must be made according to official regulations.

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14 Transport information

<ul style="list-style-type: none"> · UN-Number · DOT, IMDG, IATA 	UN3287
<ul style="list-style-type: none"> · UN proper shipping name · DOT · IMDG · IATA 	Toxic liquid, inorganic, n.o.s. (Mercury thiocyanate) TOXIC LIQUID, INORGANIC, N.O.S. (MERCURY THIOCYANATE), MARINE POLLUTANT TOXIC LIQUID, INORGANIC, N.O.S. (MERCURY THIOCYANATE)
<ul style="list-style-type: none"> · Transport hazard class(es) · DOT 	<div style="display: flex; align-items: center; gap: 10px;">   </div>
<ul style="list-style-type: none"> · Class · Label 	6.1 Toxic substances 6.1
<ul style="list-style-type: none"> · IMDG 	<div style="display: flex; align-items: center; gap: 10px;">   </div>
<ul style="list-style-type: none"> · Class · Label 	6.1 Toxic substances 6.1
<ul style="list-style-type: none"> · IATA 	<div style="display: flex; align-items: center; gap: 10px;">  </div>
<ul style="list-style-type: none"> · Class · Label 	6.1 Toxic substances 6.1
<ul style="list-style-type: none"> · Packing group · DOT, IMDG, IATA 	III
<ul style="list-style-type: none"> · Environmental hazards: · Marine pollutant: 	Product contains environmentally hazardous substances: mercury dithiocyanate Yes (DOT) Symbol (fish and tree)
<ul style="list-style-type: none"> · Special precautions for user · Danger code (Kemler): · EMS Number: · Segregation groups · Stowage Category · Stowage Code 	Warning: Toxic substances 60 F-A,S-A Heavy metals and their salts (including their organometallic compounds) A SW2 Clear of living quarters.
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	Not applicable.
<ul style="list-style-type: none"> · Transport/Additional information: · Limited quantity (LQ): · Excepted quantities (EQ) 	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) 	5L

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- **Excepted quantities (EQ)**

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

*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):**

All ingredients are listed.

- **TSCA (Toxic Substances Control Act) (Substances not listed):**

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:**

All ingredients are listed.

- **New Jersey Right-to-Know List:**

All ingredients are listed.

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

None of the ingredients is listed.

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

All ingredients are listed.

- **Pennsylvania Special Hazardous Substance List:**

CAS: 107-21-1 ethane-1,2-diol

E

CAS: 592-85-8 mercury dithiocyanate

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.

- **US-VOC content:** 1122.1 g/l / 9.36 lb/gl

- **Information about limitation of use:**

Employment restrictions concerning pregnant and lactating women must be observed.

Employment restrictions concerning young persons must be observed.

- **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**

H300 Fatal if swallowed.

H302 Harmful if swallowed.

H310 Fatal in contact with skin.

H330 Fatal if inhaled.

H373 May cause damage to the kidneys through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

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H410 Very toxic to aquatic life with long lasting effects.

• **Date of preparation / last revision** 03/16/2017 / 32• **Abbreviations and acronyms:**

OECD: Organisation for Economic Co-operation and Development

EC50: half maximal effective concentration

IC50: half maximal inhibitory concentration

NOEL or NOEC: No Observed Effect Level or Concentration

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

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

STOT: specific target organ toxicity

SE: single exposure

RE: repeated exposure

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

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Acute Tox. 2: Acute toxicity – Category 2

Acute Tox. 4: Acute toxicity – Category 4

Acute Tox. 1: Acute toxicity – Category 1

Acute Tox. 3: Acute toxicity – Category 3

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

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.

IUCLID (International Uniform Chemical Information Database)

RTECS (Registry of Toxic Effects of Chemical Substances)

ECHA: European Chemicals Agency <http://echa.europa.eu>• * **Data compared to the previous version altered.**