

Cayman Chemical Company  
 1180 E. Ellsworth Rd.  
 Ann Arbor, MI 48108



### 1. Identification of the Substance/Mixture and of the Company/Undertaking

**Product Code:** 700613

**Product Name:** Chloride Assay Reagent 2

**Intended Use:** For research use only, not for human or veterinary use.

**Manufacturer Information**

**Company Name:** Cayman Chemical Company

**Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300

**Alternate Emergency Contact:** CHEMTREC Outside USA and Canada: +1 (703)527-3887

**Information:** Cayman Chemical Company +1 (734)971-3335

**Web site address:** www.caymanchem.com

### 2. Hazards Identification

GHS Classification	Placard	Key word	GHS Hazard
Flammable Liquids, Category 2	Flame	Danger	Highly flammable liquid and vapor
Acute Toxicity: Oral, Category 3	Skull and crossbones	Danger	Toxic if swallowed
Acute Toxicity: Skin, Category 3	Skull and crossbones	Danger	Toxic in contact with skin
Acute Toxicity: Inhalation, Category 3	Skull and crossbones	Danger	Toxic if inhaled
Target Organ Systemic Toxicity (single exposure), Category 1	Health hazard	Danger	Causes damage to organs {eyes}

**GHS Hazard Phrases:**  
 H225: Highly flammable liquid and vapor  
 H301: Toxic if swallowed.  
 H311: Toxic in contact with skin.  
 H331: Toxic if inhaled.  
 H370: Causes damage to organs {eyes}

**GHS Precaution Phrases:**  
 P210: Keep away from {heat/sparks/open flames/hot surfaces}. - No smoking.  
 P280: Wear protective gloves/clothing and eye/face protection as specified by the manufacturer/supplier or the competent authority.  
 P264: Wash hands thoroughly after handling.  
 P260: Do not breathe dust/fume/gas/mist/vapours/spray.

**GHS Response Phrases:**  
 P303+361+353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.  
 P302+352: IF ON SKIN: Wash with plenty of soap and water.  
 P312: Call a POISON CENTER or doctor/physician if you feel unwell.  
 P363: Wash contaminated clothing before reuse.  
 P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
 P330: Rinse mouth.  
 P361: Remove/Take off immediately all contaminated clothing.  
 P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
 P307+311: IF exposed: Call a POISON CENTER or doctor/physician.

**GHS Storage and Disposal Phrases:**  
 Please refer to Section 7 for Storage and Section 13 for Disposal information.

<b>Route(s) of Entry:</b>	Inhalation? Yes    Skin? Yes    Eyes? Yes    Ingestion? Yes    Other: Injection
<b>Potential Health Effects (Acute and Chronic):</b>	Cannot be made nonpoisonous. Contains a California Prop. 65 reproductive hazard (Mercuric thiocyanate). Harmful vapors. Material may be irritating to the mucous membranes and upper respiratory tract. May be fatal or cause blindness if swallowed. May cause eye, skin, or respiratory system irritation. Toxic if swallowed, inhaled, or absorbed through the skin. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
<b>Target Organs:</b>	Central nervous system, Eyes, Gastrointestinal System, Respiratory system, Skin.
<b>LD 50 / LC 50:</b>	Please refer to Section 11.
<b>Signs and Symptoms Of Exposure:</b>	Overexposure may cause: confusion, dermatitis, headache, drowsiness, dizziness, gastrointestinal disturbance, optic nerve damage (blindness), nausea, unconsciousness, vomiting, visual disturbance, weakness. May cause convulsions. Once methanol is absorbed into the body, it is very slowly eliminated. To the best of our knowledge, the toxicological properties have not been thoroughly investigated.
<b>Medical Conditions Generally Aggravated By Exposure:</b>	No data available.

### 3. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	EC#	Risk Phrases	RTECS #
1. Mercuric thiocyanate	592-85-8	0.84 %	209-773-0	R24-26/28-33-36-50 /53-62-63	XL1550000
2. Methanol	67-56-1	99.16 %	200-659-6	R11-23/24/25-39/23 /24/25	PC1400000

### 4. First Aid Measures

<b>Emergency and First Aid Procedures:</b>	
<b>In Case of Inhalation:</b>	Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
<b>In Case of Skin Contact:</b>	Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
<b>In Case of Eye Contact:</b>	Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.
<b>In Case of Ingestion:</b>	Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
<b>Indication of any immediate medical attention and special treatment needed:</b>	No data available.

### 5. Fire Fighting Measures

<b>Suitable Extinguishing Media:</b>	Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. Use water spray to cool fire-exposed containers.
<b>Unsuitable Extinguishing Media:</b>	A solid water stream may be inefficient.
<b>Flammable Properties and Hazards:</b>	Can release vapors that form explosive mixtures at temperatures at or above the flashpoint. Container explosion may occur under fire conditions. Emits toxic fumes under fire conditions. Sensitive to static discharge. Vapors can travel to a source of ignition and flash back.

<b>Flash Pt:</b>	11.00 C Method Used: Closed Cup
<b>Autoignition Pt:</b>	385.00 C
<b>Explosive Limits:</b>	LEL: 6.0% at 25.0 C UEL: 36.0% at 25.0 C
<b>Hazardous Combustion Products:</b>	No data available.
<b>Fire Fighting Instructions:</b>	As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes. Note: Flammable as diluted in methanol.

### 6. Accidental Release Measures

<b>Protective Precautions, Protective Equipment and Emergency Procedures:</b>	Avoid breathing vapors and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
<b>Environmental Precautions:</b>	Take steps to avoid release into the environment, if safe to do so.
<b>Steps To Be Taken In Case Material Is Released Or Spilled:</b>	Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations.

### 7. Handling and Storage

<b>Precautions To Be Taken in Handling:</b>	Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure. Keep away from sources of ignition. Take precautionary measures against static discharge.
<b>Precautions To Be Taken in Storing:</b>	Keep away from heat, sparks, and flame. Keep container tightly closed. Store in accordance with information listed on the product insert.
<b>Hazard Label Information:</b>	Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation. Wash thoroughly after handling.

### 8. Exposure Controls/Personal Protection

Hazardous Components (Chemical Name)	CAS #	OSHA PEL	ACGIH TWA	Other Limits
1. Mercuric thiocyanate	592-85-8	No data.	No data.	No data.
2. Methanol	67-56-1	PEL: 200 ppm	TLV: 200 ppm STEL: 250 ppm	No data.
Hazardous Components (Chemical Name)	CAS #	Britain EH40	France VL	Europe
1. Mercuric thiocyanate	592-85-8	No data.	No data.	No data.
2. Methanol	67-56-1	TWA: 266 mg/m3 (200 ppm) STEL: 333 mg/m3 (250 ppm)	TWA: 260 mg/m3 (200 ppm) STEL: 1300 mg/m3 (1000 ppm)	TWA: 260 mg/m3

<b>Protective Equipment Summary - Hazard Label Information:</b>	Compatible chemical-resistant gloves Eye wash station in work area Lab coat Safety glasses Safety shower in work area Vent Hood
<b>Engineering Controls (Ventilation etc.):</b>	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
<b>Eye Protection:</b>	Safety glasses
<b>Protective Gloves:</b>	Compatible chemical-resistant gloves
<b>Other Protective Clothing:</b>	Lab coat
<b>Respiratory Equipment (Specify Type):</b>	NIOSH approved respirator, as conditions warrant.
<b>Work/Hygienic/Maintenance Practices:</b>	Do not take internally. Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower. Wash thoroughly after handling.

**Environmental Exposure Controls:** No data available.

### 9. Physical and Chemical Properties

**Information on Basic Physical and Chemical Properties**

**Physical States:**  Gas  Liquid  Solid

**Appearance and Odor:** Solution

**Melting Point:** No data.

**Boiling Point:** No data.

**Flash Pt:** 11.00 C Method Used: Closed Cup

**Evaporation Rate:** No data.

**Explosive Limits:** LEL: 6.0% at 25.0 C UEL: 36.0% at 25.0 C

**Vapor Pressure (vs. Air or mm Hg):** 96 MM\_HG at 20.0 C

**Vapor Density (vs. Air = 1):** No data.

**Specific Gravity (Water = 1):** No data.

**Solubility in Water:** No data.

**Autoignition Pt:** 385.00 C

**Explosive Properties:** No data available.

**Oxidizing Properties:** No data available.

**Other Information**

**Percent Volatile:** No data.

### 10. Stability and Reactivity

**Reactivity:** No data available.

**Stability:** Unstable  Stable

**Stability Note(s):** Stable if stored in accordance with information listed on the product insert.

**Conditions To Avoid:** heat, flames and sparks

**Polymerization:** Will occur  Will not occur

**Incompatibility - Materials To Avoid:** acids  
acid anhydrides  
acid chlorides  
alkali metals  
oxidizing agents  
reducing agents

**Hazardous Decomposition Or Byproducts:** carbon dioxide  
carbon monoxide

### 11. Toxicological Information

**Toxicological Information:** The toxicological effects of this product have not been thoroughly studied.

Methanol - Toxicity Data: Oral LD50 (rat): 5,600 mg/kg; Oral LD50 (rabbit): 14,200 mg/kg; Inhalation LC50 (rat): 64,000 ppm (4h); Inhalation LC50 (mouse): 61,100 ppm (134 m); Skin LD50 (rabbit): 15,800 mg/kg; Oral LDLO (human): 143 mg/kg;

Methanol - Irritation Data: Skin (rabbit): 20 mg (24h) moderate; Eyes (rabbit): 40 mg moderate; Eyes (rabbit): 100 mg (24h) moderate;

**Chronic Toxicological Effects:** Methanol - Investigated as a mutagen and reproductive effector. Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information. Methanol RTECS Number: PC1400000

<b>Carcinogenicity/Other Information:</b>	IARC: Group 3: Not classifiable as to its carcinogenicity to humans (Mercuric thiocyanate)				
Hazardous Components (Chemical Name)	CAS #	NTP	IARC	ACGIH	OSHA
1. Mercuric thiocyanate	592-85-8	n.a.	n.a.	n.a.	n.a.
2. Methanol	67-56-1	n.a.	n.a.	n.a.	n.a.

**Carcinogenicity:** NTP? No      IARC Monographs? No      OSHA Regulated? No

### 12. Ecological Information

**General Ecological Information:** Avoid release into the environment.  
Runoff from fire control or dilution water may cause pollution.

### 13. Disposal Considerations

**Waste Disposal Method:** Dispose in accordance with local, state, and federal regulations.

### 14. Transport Information

**Globally Harmonized System of Classification and Labelling**

Flammable Liquids, Category 2 - Danger! Highly flammable liquid and vapor  
 Acute Toxicity: Oral, Category 3 - Danger! Toxic if swallowed  
 Acute Toxicity: Skin, Category 3 - Danger! Toxic in contact with skin  
 Acute Toxicity: Inhalation, Category 3 - Danger! Toxic if inhaled  
 Target Organ Systemic Toxicity (single exposure), Category 1 - Danger! Causes damage to eyes

**LAND TRANSPORT (US DOT)**

**DOT Proper Shipping Name:** Methanol Solution  
**DOT Hazard Class:** 3 (6.1)  
**DOT Hazard Label:** FLAMMABLE LIQUID, POISON  
**UN/NA Number:** 1230  
**Packing Group:** II

**LAND TRANSPORT (European ADR/RID)**

**ADR/RID Shipping Name:** Methanol Solution  
**UN Number:** 1230  
**Hazard Class:** 3 (6.1) - FLAMMABLE LIQUID, POISON  
**Packing Group:** II

**AIR TRANSPORT (ICAO/IATA)**

**ICAO/IATA Shipping Name:** Methanol Solution  
**UN Number:** 1230  
**Hazard Class:** 3 (6.1) - FLAMMABLE LIQUID, POISON  
**Packing Group:** II  
**IATA Classification:** 3, 6.1

**Additional Transport Information:** Transport in accordance with local, state, and federal regulations.

### 15. Regulatory Information

**European Community Hazard Symbol codes:** F: Highly Flammable; T: Toxic

**European Community Risk and Safety Phrases**

R11 - Highly flammable.  
 R23/24/25 - Toxic by inhalation, in contact with skin and if swallowed.  
 R39/23/24/25 - Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.  
 S7 - Keep container tightly closed.  
 S16 - Keep away from sources of ignition.  
 S24/25 - Avoid contact with skin and eyes.



# SAFETY DATA SHEET

## Chloride Assay Reagent 2

- S33 - Take precautionary measures against static discharges.  
 S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.  
 S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible.)

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Mercuric thiocyanate	592-85-8	No	Yes 10 LB	Yes-Cat. N458, N106	No
2. Methanol	67-56-1	No	Yes 5000 LB	Yes	No

**Other US EPA or State Lists**

Hazardous Components (Chemical Name)	CAS #	CAA HAP,ODC	CWA NPDES	TSCA	CA PROP.65
1. Mercuric thiocyanate	592-85-8	HAP	No	Inventory	Yes - Cat.
2. Methanol	67-56-1	HAP	No	Inventory	No

**Regulatory Information Statement:** This SDS was prepared in accordance with 29 CFR 1910.1200, Regulation (EC) No.1272/2008, and European Directive 67/548/EEC as amended.

## 16. Other Information

**Revision Date:** 02/01/2013

**Company Policy or Disclaimer**

For research use only, not for human or veterinary use.

DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

N.A.=Not available, N.P.=Not applicable, N.D.=Not determined, N.E.=Not established, N.R.=Not required