



# MATERIAL SAFETY DATA SHEET

<http://www.ekamsds.com>

an Akzo Nobel company

## 1. Chemical Product and Company Identification

### Eka Chemicals Inc.

1775 West Oak Commons Court  
Marietta, GA 30062  
USA

24 Hour Emergency Number  
US CHEMTREC 1-800-424-9300  
CANADA CANUTEC 1-613-966-6666

### Product Name

**CHLORINE DIOXIDE SOLUTION - SVP-PURE®**

### Chemical Type

Chlorine dioxide gas absorbed in water solution

### Intended Use

As disinfectant, oxidizer, or bleaching agent

## 2 Hazards Identification

### Emergency Overview

A pale green solution when dissolved in water, which is irritating to the eyes, skin and respiratory passages.

### Routes of Exposure

Eyes, skin, and inhalation

### Potential Health Effects

#### Ingestion

May cause irritation to the mucous membranes.

#### Skin

May cause redness and moderate irritation.

#### Eyes

Strong irritant to the eyes. May cause redness, pain, blurred vision, tearing, corneal injury and burns.

#### Inhalation

Irritating to mucous membranes. May cause coughing, headache, labored breathing, nausea, shortness of breath, pulmonary edema.

### Target organs

Eyes, skin and respiratory tract

### Chronic Effects

May have effects on the lungs, resulting in chronic bronchitis and damage to the teeth.

### Medical Conditions Aggravated by Exposure

None known

## 3. Composition / Information on Ingredients

### Component

Chlorine dioxide

### CAS #

10049-04-4

### % Wt/Wt

< 0.4 %

ACGIH - Threshold Limits Values - Time Weighted Averages (TLV-TWA)

0.1 ppm TWA

**This MSDS is not intended for use outside of North America**

## 4. First Aid Measures

### First Aid

<i>Ingestion</i>	Rinse out the mouth and immediately drink a few glasses of water, but only if the person is fully conscious. DO NOT induce vomiting.
<i>Skin</i>	Wash off contamination with soap and water thoroughly. Seek medical attention if irritation persists. Remove all contaminated clothing which should be laundered before reuse.
<i>Eyes</i>	Rinse immediately with plenty of water for at least 15 minutes while keeping the eye lids separated. Go to the hospital directly. Continue washing the eyes during the journey to the hospital.
<i>Inhalation</i>	Get person to fresh air. If breathing is difficult, administer oxygen. Consult a physician
<i>Notes to Physician</i>	Inhalation potentially will damage the lungs, ingestion affects the blood system, liver and kidneys

## 5. Fire Fighting Measures

*Flammable Properties* None

### Extinguishing Media

*Suitable Extinguishing Media* Does not present a fire hazard.

*Unsuitable Extinguishing Media* Not applicable

### Protection of Fire Fighters

*Protective Equipment for Fire Fighters* None.

*Specific Hazards Arising From the Chemical* None.

## 6. Accidental Release Measures

*Environmental Precautions* Evacuate area of unnecessary personnel. Remove gas with a fine water spray. Wear a self-contained breathing apparatus.

*Methods for Containment* Contain spill using noncombustible material such as vermiculite, sand or earth.

*Methods for Clean-up* Dilute with plenty of water. For significant spills, consult experts for treatment and disposal.

## 7. Handling and Storage

*Handling Procedures* Avoid inhalation and skin contact. Ensure necessary ventilation in work areas in which chlorine dioxide solution is being used. Use local exhaust ventilation at point of vapor emissions. Ensure that gas masks/filters are available. Ensure that emergency shower facilities are available.

*Storage Procedures* Chlorine dioxide solution should be stored at ambient temperature or below. Tanks should be provided with positive ventilation, such as a fan or eductor. High temperature will cause increased evolution of chlorine dioxide gas and may lead to decomposition. Chlorine dioxide should be stored separated from organic materials and reducing agents.

## 8. Exposure Controls / Personal Protection

*Exposure Guidelines* Chlorine dioxide: TWA 0.1 ppm, STEL 0.3 ppm.

*Engineering Controls* Eye wash and safety shower.

### U.S. - OSHA - Vacated PELs - STELs (Short Term Exposure Limits)

Chlorine dioxide 10049-04-4 0.3 ppm STEL; 0.9 mg/m3 STEL

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## Personal Protective Equipment

Eyes/Face	Safety goggles or eye protection in combination with breathing protection.
Skin	Use chemical-resistant gloves, goggles and full working clothes. Contaminated clothing should be laundered before re-use. Avoid skin contact.
Respiratory	Use NIOSH/MSHA approved inorganic air-gas respirator for areas where airborne exposure is excessive.

## 9. Physical & Chemical Properties

### Appearance

Form	Liquid Gas may evolve to atmosphere from solutions.
Color	Clear to pale-green solution.
Odor	Pungent. Chlorine-like.
Odour Threshold	Not Available.
Physical State	liquid
pH	1 - 3
Melting Point	Same as water
Freezing Point	Same as water
Boiling Point	Same as water
Flash Point	Not applicable
Evaporation Rate	Chlorine dioxide gas may evolve from solution
Flammability	Not Available
Upper/Lower Flammability	Not applicable
Vapor Pressure	Approx. 50 mm Hg at 30°C (ClO <sub>2</sub> )
Vapor Density	Chlorine dioxide gas is 2.3 times air
Specific Gravity	1.0 at 0 C, solution
Solubility (H <sub>2</sub> O)	Soluble
Coefficient of Water/Oil Distribution	No data
Octanol/H <sub>2</sub> O Coeff	Not Available.
Auto Ignition Temperature	Not applicable
Decomposition Temperature	Not Available.
Viscosity	Same as water

## 10. Chemical Stability & Reactivity Information

Conditions to Avoid	Avoid elevated temperatures, to reduce/avoid evolution of ClO <sub>2</sub> gas
Incompatible Materials	Corrosive to steel, stainless steel, copper alloys and many other materials.
Hazardous Decomposition Products	Chlorine
Possibility of Hazardous Reactions	None under normal conditions.

## 11. Toxicological Information

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*Acute Effects*

LD50 (oral, rat) = 39-113 mg/kg (chlorine dioxide). Chlorine dioxide is a reacting and oxidizing gas, which oxidizes hemoglobin in the blood to methaemoglobin. This leads to a lack of oxygen in body tissues, since methaemoglobin does not have the same ability to transport oxygen.

Symptoms (chlorine dioxide): Initially, chlorine dioxide affects the eyes, skin and airways. Normal symptoms of overexposure are coughing, pallid skin, headache, fatigue, nausea, breathing difficulties, irritation to the eyes, skin and mucous membranes. The first symptoms appear immediately. Acute overexposure can cause bronchitis, pneumonia and pulmonary edema.

*Carcinogenicity/mutagenicity & long term effects* No Information

**U.S. - Rhode Island - Hazardous Substance List**

Chlorine dioxide 10049-04-4 Toxic

*Neurotoxicity* No Information

*Reproductive toxicity/teratogenicity* No Information

*Epidemiology* No Information

**12. Ecological Information**

**Ecotoxicity**

*Aquatic toxicity* Chlorine is toxic to aquatic organisms. Fish: LC50 (Primephales promelas) - 0.02 mg/dm3 (chlorine dioxide).

*Persistence/Degradability* Chlorine dioxide is quickly decomposed, forming chlorate, chlorite and chloride.

*Bioaccumulation/Accumulation* Chlorine dioxide is quickly converted into the products of its decomposition. There is no evidence to show bioaccumulation in animals.

*Mobility in Environmental Media* Chlorine dioxide absorbed into water has low volatility.

**13. Disposal Considerations**

*Disposal Instructions* In accordance with municipal, provincial, state and federal regulations. D002 Recycling of containers may be permitted, provided the container is "empty", as described in 40 CFR 261.7(b)(1)", when the container is used within the United States. When the container is used within Canada, the following regulations apply: "A container that has been completely emptied using common practices, and that contains less than 2.5 cm of residue, is typically considered to be an "empty container" and not subject to regulation as a hazardous material or hazardous waste" (see also Ontario - O. Reg. 347, Quebec - O.C. 1091-2004, B.C. - B.C. Reg. 63/88, Alberta - Reg. 192/96, and/or Saskatchewan - E.10.2, Reg. 3, as appropriate).

**14. Transport information**

*Transport Summary* Not recommended by Eka Chemicals.

**15. Regulatory Information**

*US Federal Regulations* In compliance

*OSHA Regulated* Corrosive as defined in 29 CFR 1910.1200.

*SARA 302* Not subject to SARA Section 302.

*SARA 311/312* Not subject to SARA Section 311/312.

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SARA 313	Subject to SARA Section 313.
Canada DSL	In compliance.
WHMIS Classification	Not determined
General	Not subject to California Proposition 65. Not subject to CERCLA.

## 16. Other Information

### Other Information

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