


SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

- 1.1 Product identifier**
Product Name REMOTOX®
Chemical Name Calcium Polysulfide Solution
Chemical Family Inorganic Salt
CAS-No. 1344-81-6
- 1.2 Recommended use of the substance or mixture**
Identified Uses Industrial use. Heavy metal fixation reagent.
- 1.3 Details of the supplier of the safety data sheet**
Company Graus Chemicals, LLC
P.O. Box 5012
Scottsdale, AZ 85261
info@grauschemicals.com
- 1.4 Emergency phone number** 1-623-328-5175

SECTION 2: HAZARD(S) IDENTIFICATION

- 2.1 Classification of the substance or mixture**
Acute toxicity – oral Category 4
Acute toxicity – dermal Category 4
Acute toxicity – inhalation Category 4
Skin corrosion/irritation Category 2
Eye damage/irritation Category 1
- 2.2 GHS-US labeling**
Signal word Danger!
- 2.3 Hazard statement(s)**
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H332 Harmful if inhaled.
- 2.4 Symbol(s)**

- 2.5 Precautionary statement(s)**
P221 Take any precaution to avoid mixing with combustibles/acids/oxidizers.
P261 Avoid breathing dust/fumes/gas/mist/vapors/spray.
P262 Do not get in eyes, on skin, or on clothing.
P264 Wash thoroughly after handling.
P233 Keep containers tightly closed.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment – if this is not the intended use.
P280 Wear protective gloves/eye protection/face shield.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.6 **Unclassified hazard(s)** Aquatic Toxicity

2.7 **Unknown toxicity ingredient** None

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Chemical ingredients

Chemical Name	Synonyms	Formula	CAS No.	EINECS No.	% by weight
Calcium Polysulfide	Lime Sulfur, Calcium Sulfide	CaS _x /KS _x	1344-81-6	215-709-2	26-34
Water	Water	H ₂ O	7732-18-5	231-791-2	Remaining

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Eye contact	Rinse immediately (the exposed eyes) with lukewarm, gently flowing water for at least 15-20 minutes. Remove contact lenses, if present and easy to do. Obtain medical advice/attention if irritation occurs.
Skin contact	Wash immediately with soap and plenty of water. Rinse for at least 15 minutes. Remove contaminated clothing and wash it before reuse. Continue rinsing. Obtain medical attention if irritation occurs.
Ingestion	If victim is conscious, give 2 to 4 glasses of water. Do not induce vomiting unless told to do so by the poison control center or doctor. Obtain immediate medical attention.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is labored, administer Oxygen. If breathing has ceased, clear airway and start CPR. Obtain immediate medical attention.

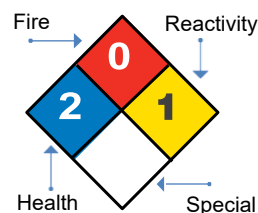
4.2 Most important symptoms and effects both acute and delayed

Acute	Eyes: Symptoms may include burns or irritation to the eyes. Skin: Repeated or prolonged contact may cause dryness, cracking and dermatitis. Inhalation: Symptoms may include irritation to the respiratory tract. Ingestion: Symptoms may include burns or irritation of the gastrointestinal tract. Contact with stomach acid can liberate toxic hydrogen sulfide vapors.
Delayed	No known chronic effects.

SECTION 5: FIRE FIGHTING MEASURES

5.1 Flammable properties

National Fire Protection Association (NFPA) Ratings	
Health	2
Flammability	0
Reactivity	1
Special	-



HAZARD RATING:
4 SEVERE
3 SERIOUS
2 MODERATE
1 SLIGHT
0 MINIMAL

5.2 Suitable extinguishing media

Not flammable, use media suitable for combustibles involved in fire.

5.3 Unsuitable extinguishing media

Not applicable

5.3 Unsuitable extinguishing media

Not applicable.

5.4 Specific hazards arising from the substance or mixture

Heating (flames) of closed or sealed containers may cause violent rupture of container due to thermal expansion of compressed gases. Heating causes release of hydrogen sulfide vapors.

5.5 Protective equipment or precautions for firefighters

Firefighters should wear self-contained breathing apparatus (SCBA) and full firefighting turnout gear. Keep containers and storage vessels in the fire area cooled with water spray.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions

Wear protective equipment specified in Section 8. Isolate the release area and deny entry to unnecessary personnel.

6.2 Environmental precautions

Keep out of waters, if this is not the intended use. (See Ecological Information in Section 12)

6.3 Methods and materials for containment and cleaning up

Small releases Confine and absorb small releases on sand, earth or other inert absorbents. Shovel up absorbed material and place in drums for disposal as a chemical waste.

Large releases Shut off release if safe to do so. Dike spill area with earth, sand or other inert absorbents to prevent runoff into surface waterways, storm drains or sewers (aquatic toxicity). Recover as much of the spilled product using portable pump and hoses. Use as originally intended or dispose of as a chemical waste.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Wear suitable protective clothing, gloves and eye/face protection. Use only in a well-ventilated area. Avoid contact with skin and eyes. Avoid prolonged or repeated breathing of vapors. Wash skin thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities

Store in well-ventilated area and away from combustibles, acids and oxidizing agents. Keep away from heat. Keep containers tightly closed and store out of direct sunlight at a moderate temperature.

SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

8.1 Occupational exposure limits

Chemical	OSHA PELs		ACGIH TLVs	
	TWA	STEL	TWA	STEL
Calcium Polysulfide	None	None	None	None
Water	None	None	None	None

8.2 Engineering controls

Use adequate exhaust ventilation to prevent inhalation of product vapors. Keep eye wash/safety shower in areas where product is commonly handled.

8.3 Personal protection measures



Eye Protection

Wear chemical goggles/full face shield. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US).

**Skin Protection**

Wear neoprene rubber gloves and chemical protection suit to prevent repeated or prolonged contact with material. Use protective clothing tested and approved under appropriate government standards such as NIOSH (US).

**Respiratory Protection**

Have self-contained breathing apparatus (SCBA) positive pressure, available in case of accidental release, equipment failure or other unforeseen incidents. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US).

**General Hygiene Considerations**

Wash thoroughly after handling and before eating, drinking or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Deep red-yellow liquid
Odor	Slight rotten egg odor
Odor Threshold	4.7 ppb (hydrogen sulfide)
pH	10.5-11.5
Freezing Point	18-25 °F (-7.7 to -3.9 °C)
Melting Point	Not applicable
Boiling Point	Not determined
Flash Point	Not applicable
Evaporation Rate	Not determined
Flammability	Not applicable
Upper/Lower Flammability Limits	Not applicable
Vapor Pressure	Not determined
Vapor Density	Not determined
Relative Density	1.27 g/cc or 10.6 lbs/gal (typical)
Solubility	Miscible
Partition Coefficient	No data available
Auto Ignition Temperature	Not applicable
Decomposition Temperature	Not determined
Viscosity	2.95 cSt @ 20 °C, 2.5 cSt @ 30 °C

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Strong oxidizers and acids.

10.2 Chemical stability

Stable under moderate temperature and pressure.

10.3 Possibility of hazardous interactions

Acids, acidic materials, and strong oxidizers cause rapid decomposition, resulting in the formation of hydrogen sulfide gas.

10.4 Conditions to avoid

High heat and fire conditions. Interaction with strong oxidizers or acidic.

10.5 Incompatible materials

Chemical substances: Acids, acidic materials and oxidizing agents.

Materials of construction: Copper, carbon steel, aluminum or their alloys (i.e. brass, bronze, etc.).

10.6 Hazardous decomposition products

Hydrogen sulfide and oxides of sulfur.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1	Oral	Rat	LD ₅₀ : 820 mg/kg
	Dermal	Rabbit	LD ₅₀ : >2,000 mg/kg
	Inhalation	Rat	LC ₅₀ : 3.9 mg/l (4 hr exposure) male rat
			LC ₅₀ : 3.1 mg/l (4 hr exposure) female rat
	Eye		Primary eye irritation. Possible risk of irreversible effects.
	Carcinogenicity		Not listed in NTP, IARC or by OSHA.
	Teratology		No data available.
	Reproduction		No data available.
	Mutagenicity		No data available.

SECTION 12: ECOLOGICAL INFORMATION

12.1	Ecotoxicity	
	Green Algae	EC ₅₀ : 16.4 mg/l
	Water Flea	EC ₅₀ : 13.7 mg/l
	Bluegill	LC ₅₀ : 52.9 mg/l
	Fathead Minnow	LC ₅₀ : 42.9 mg/l
	Rainbow Trout	LC ₅₀ : 8.8 mg/l
	Honey Bee	LD ₅₀ : >25 µg ai/Bee
	Avian	LD ₅₀ : 560 ai/kg
	Bobwhite Quail	LD ₅₀ : 560 ai/kg body wt.
12.2	Persistence and degradability	
	Calcium Polysulfide present in moist soils and/or moist foliage is expected to dissociate rapidly; therefore, run-off and erosion into surface waters, as present calcium polysulfide, should be negligible. (US EPA 2005, RED)	
12.3	Bioaccumulation potential	
	Product is not bio-accumulative.	
12.4	Mobility in soil	
	No data available.	
12.5	Other adverse effects	
	Toxic to aquatic organisms.	

SECTION 13: DISPOSAL CONSIDERATION

13.1	Waste treatment methods	
	Consult federal, state and local regulations for disposal regulations.	

SECTION 14: TRANSPORTATION INFORMATION

14.1	Basic Shipping Description	
	Proper Shipping Name	Calcium Polysulfide Solution (Not regulated by DOT)
	Hazard Classes	Not applicable
	Packing Group	Not applicable
	Hazardous Substance	No
14.2	Other DOT Requirements	
	Placard(s)	Not applicable
	Labels	Not applicable
	Reportable quantity	No
14.3	USCG Classification	Not determined

14.4 International Transportation	
IMO	UN3082, Environmentally Hazardous Substance, liquid, n.o.s., (Calcium Polysulfide) 9, PG III, MARINE POLLUTANT
IATA	Not regulated
TDG (Canada)	Not regulated
ADR (Europe)	UN3082, Environmentally Hazardous Substance, liquid, n.o.s., (Calcium Polysulfide) 9, PG III, MARINE POLLUTANT
ADG (Australia)	UN3082, Environmentally Hazardous Substance, liquid, n.o.s., (Calcium Polysulfide) 9, PG III, MARINE POLLUTANT
14.5 Emergency Response Guide	Not applicable
14.6 ERAP (Canada)	Not applicable
14.7 Special Precautions	Not applicable

SECTION 15: REGULATORY INFORMATION

15.1 US Federal Regulations	
OSHA	Meets the definition of a hazardous substance under the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200). Included in the US EPA TSCA Inventory List.
TSCA	Reportable quantity.....No
CERCLA	Extremely Hazardous Substance (EHS).....No
SARA Title III	Section 313 (Form R).....Not applicable Section 312 (Tier II) Ratings.....Immediate (acute): Yes Fire: No Sudden release: No Reactivity: No Delayed (chronic): No
RCRA	Not applicable
CAA (HAP)	Not applicable
15.2 State Regulations	CA Prop 65: Not applicable
15.3 International Regulations	
WHMIS (Canada)	Not determined
DSL/NDSL (Canada)	Listed in NDSL, Record No. 28636

SECTION 16: OTHER INFORMATION

- 16.1 Use of Substance/Preparation**
This material is used for heavy metal removal in soil, groundwater and wastewater. Its use varies depending on the site and remediation technology employed. Therefore, exposure should be evaluated so that appropriate handling practices and training can be established to ensure safe workplace operations.
- 16.2 Last revised on:** March 26, 2026 (Updated company address and revised sections for formatting and wording)

Some of the information presented are from sources other than direct test data on the product itself. The information in this Safety Data Sheet (SDS) was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding the correctness. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with the handling, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS may not be applicable. Graus Chemicals reserves the right to revise this SDS periodically as new information becomes available.