



Calcium-Zinc Bromide Solution

Date of Preparation: July 20, 2020

SAFETY DATA SHEET

Section 1: IDENTIFICATION

Product Name: Calcium-Zinc Bromide Solution

Synonyms: TCS CZB 1700, TCS CZB 1800, TCS CZB 1900, TCS CZB 2000, TCS CZB 2100, TCS CZB 2200, TCS CZB 2300.

Product Use: Oilfield Fluid.

Restrictions on Use: Not available.

Manufacturer/Supplier: Tiger Calcium Services
603-15 Ave
Nisku, AB T9E 7M6

Phone Number: 780-849-3114

Emergency Phone: Canutec: 613-996-6666

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Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Skin Corrosion, Category 1B
Eye Damage, Category 1

LABEL ELEMENTS

Hazard

Pictogram(s):



Signal Word: Danger

Hazard Statements: Causes severe skin burns and eye damage.

Precautionary Statements

Prevention: Do not breathe mist, vapours, or spray.
Wash hands thoroughly after handling.
Wear protective gloves, protective clothing and eye protection.

Response: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor.
Wash contaminated clothing before reuse.

Storage: Store locked up.

Disposal: Dispose of contents and container in accordance with applicable regional, national and local laws and regulations.



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Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: 18% of this product mixture consists of ingredient(s) of unknown acute toxicity.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Calcium bromide (CaBr ₂)	Not available.	7789-41-5	40 - 45
Zinc bromide (ZnBr ₂)	Not available.	7699-45-8	13 - 18

Section 4: FIRST-AID MEASURES

Inhalation: If inhaled: Remove person to fresh air and keep comfortable for breathing.

Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema.

Eye Contact: If in eyes: Rinse cautiously with water for at least 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor.

Acute and delayed symptoms and effects: Causes serious eye damage. Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

Skin Contact: If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Immediately call a poison center or doctor. Wash contaminated clothing before reuse.

Acute and delayed symptoms and effects: Causes severe skin burns. Signs/symptoms may include localized redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction.

Ingestion: If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Never give anything by mouth to an unconscious person.

Acute and delayed symptoms and effects: Causes burns to nose, mouth, throat, and digestive tract. Signs/symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting, and diarrhea, blood in the feces and/or vomitus may also be seen.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately.



Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Some may burn but none ignite readily. Containers may explode when heated. Some may be transported hot.

If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

Fire involving Tanks: Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is not sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Small Fire: Dry chemical, CO2, water spray or regular foam.
Large Fire: Water spray, fog or regular foam. Do not scatter spilled material with high pressure water streams. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal.

Unsuitable Extinguishing Media: Not available.

Products of Combustion: Oxides of calcium. Oxides of zinc. Hydrogen bromide.

Protection of Firefighters: Inhalation of material may be harmful. Contact may cause burns to skin and eyes. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet). Keep unauthorized personnel away. Stay upwind.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Prevent entry into waterways, sewers, basements or confined areas.

Methods for Containment: Stop leak if you can do it without risk. Prevent dust cloud.

Methods for Clean-Up: Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Other Information: See Section 13 for disposal considerations.



Section 7: HANDLING AND STORAGE

Handling:

Do not swallow. Do not breathe mist, vapours, or spray. Wash hands thoroughly after handling. See Section 8 for information on Personal Protective Equipment.

Storage:

Store locked up. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component

Calcium bromide [CAS No. 7789-41-5]

ACGIH: No TLV established.

OSHA: No PEL established.

Zinc bromide [CAS No. 7699-45-8]

ACGIH: No TLV established.

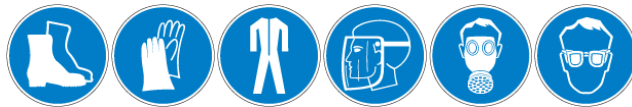
OSHA: No PEL established.

PEL: Permissible Exposure Limit

TLV: Threshold Limit Value

Engineering Controls: Not normally required.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection: Wear chemical safety goggles, and full face shield. Ensure that eyewash stations and safety showers are close to the workstation location. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection: Wear protective gloves. Consult manufacturer specifications for further information.

Skin and Body Protection: Wear protective clothing. Clothing with full length sleeves and pants should be worn.

Respiratory Protection: If ventilation is inadequate, then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4, with organic vapor/acid gas cartridge and particulate filter, or self-contained breathing apparatus must be used. Supplied air breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.



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General Hygiene Considerations: Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, light yellow to amber liquid.
Colour:	Light yellow to amber.
Odour:	Odourless.
Odour Threshold:	Not available.
Physical State:	Liquid.
pH (10% solution):	5 to 6
Melting Point / Freezing Point:	Not available.
Initial Boiling Point:	156 °C (312.8 °F)
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	Not applicable.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	1.7 to 1.9 (Water = 1) at 25 °C (77 °F)
Solubilities:	Water solubility limited by viscosity.
Partition Coefficient: n-Octanol/Water:	Not available.
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	Not available.
Viscosity:	Not available.
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	Not available.
Density:	Not available.
Coefficient of Water/Oil Distribution:	Not available.



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Section 10: STABILITY AND REACTIVITY

Reactivity: Contact with incompatible materials. Exposure to heat.

Chemical Stability: Stable under normal storage conditions.

Possibility of Hazardous Reactions: None known.

Conditions to Avoid: Contact with incompatible materials. Exposure to heat.

Incompatible Materials: Oxidizers.

Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Calcium bromide	7789-41-5	4100 mg/kg (rat)	Not available.	Not available.
Zinc bromide	7699-45-8	Not available.	Not available.	Not available.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema.

Eye: Causes serious eye damage. Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

Skin: Causes severe skin burns. Signs/symptoms may include localized redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction.

Ingestion: Causes burns to nose, mouth, throat, and digestive tract. Signs/symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting, and diarrhea, blood in the feces and/or vomitus may also be seen.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.



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EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

- Target Organs:** Skin. Eyes. Gastrointestinal tract. Respiratory system.
- Chronic Effects:** Prolonged or repeated contact may dry skin and cause irritation.
- Carcinogenicity:** This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.
- Mutagenicity:** Not available.
- Reproductive Effects:** Not available.
- Developmental Effects**
 - Teratogenicity:** Not available.
 - Embryotoxicity:** Not available.
- Toxicologically Synergistic Materials:** Not available.

Section 12: ECOLOGICAL INFORMATION

- Ecotoxicity:** Not available.
- Persistence / Degradability:** Not available.
- Bioaccumulation / Accumulation:** Not available.
- Mobility in Environment:** Not available.
- Other Adverse Effects:** Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

- U.S. Department of Transportation (DOT)**
- Proper Shipping Name:** UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Zinc bromide), 9, PG III
- Class:** 9
- UN Number:** UN3082
- Packing Group:** III
- Label Code:**





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Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Zinc bromide), 9, PG III

Class: 9

UN Number: UN3082

Packing Group: III

Label Code:



Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

Component	Section 302 (EHS) TPQ (lbs.)	Section 304 EHS RQ (lbs.)	CERCLA RQ (lbs.)	Section 313	RCRA CODE	CAA 112(r) TQ (lbs.)
Zinc bromide	Not listed.	Not listed.	1000	313c	Not listed.	Not listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Component	CAS No.	RTK List
Zinc bromide	7699-45-8	Listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Component	CAS No.	RTK List
Zinc bromide	7699-45-8	Listed.



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Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Component

CAS No.

RTK List

Zinc bromide

7699-45-8

E

Note: E = Environmental Hazard

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: July 20, 2020

Version: 1.0

GHS SDS Prepared by: Deerfoot Consulting Inc.

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