

1: Identification of substance / mixture

1. Product Identifier

Mixture

Product Name **Zinc Chloride, Tetrahydrofuran**
 Product Code 1015
 CAS Number 7646-85-7
 Other Names Zinc Chloride solution 0.5M in Tetrahydrofuran
 IUPAC
 MFCD Number MFCD00011295
 EC/EINECS
 REACH Number

2. Relevant identified uses of the substance or mixture and uses advised against

Research and Development.

3. Details of the supplier of the safety data sheet

Rieke Metals, LLC
 1001 Kingbird Road,
 Lincoln
 Nebraska
 68521
 US



Telephone: 402 434 2775
 Fax: 402 434 2777
 Email: sales@riekemetals.com

4. Emergency telephone number

800-535-5053 / International 1-352-323-3500 -

2. Hazards Identification

1. Classification of the substance or mixture

H225	Flam Liq. 2
H302	Acute Tox. 4
H313	Acute Tox. 5
H314	Skin Corr. 1B
H318	Eye Dam. 1
H335	STOT SE 3a
H411	Aquatic Chronic 2

2. Label elements

Signal Word **Danger**



Hazard Statements

H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H313	Maybe harmful in contact with skin
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H411	Toxic to aquatic life with long lasting effects.

Precautionary Phrases

P210	Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash skin thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P303 + P361 + P533	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P501	Dispose of contents/container to licensed professional waste disposal service to dispose of this material.

3. Other Hazards

Additional precautionary phrases are located throughout the safety data sheet

3. Composition / Information on Ingredients

1. Substances

No Resource File

2. Mixtures

Concentration	Product Name	CAS Number	EC/EINECS
90%	Tetrahydrofuran	109-99-9	203-726-8
10%	Zinc Chloride	7646-85-7	231-592-0

4. First Aid Measures

1. Description of first aid measures

<i>Skin Contact</i>	P303 + P361 + P533: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.
<i>Eye Contact</i>	P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Rinse opened eye for several minutes under running water. Consult a physician.
<i>Ingestion</i>	P301 + P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
<i>Inhalation</i>	P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

2. Most important symptoms and effects

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly tested.

3. Indication of any immediate medical attention

P310: Immediately call a POISON CENTER or doctor/physician.

5. Firefighting measures

1. Extinguishing Media

<i>Suitable</i>	Carbon dioxide, Dry chemical powder or appropriate foam.
<i>Unsuitable</i>	Do not use water.

2. Special Hazards arising from the substance or mixture

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides, Hydrogen halides, and Zinc oxides.

3. Advice for Fire Fighters

Wear self-contained breathing apparatus if necessary.
Wear protective clothing to prevent contact with skin and eyes.

6. Accidental Release Measures

1. Personal Precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

2. Environmental Precautions

Prevent further leakage or spillage if safe to do so.
Do not let product enter drains.

3. Methods & Materials

Contain spillage, absorb into dry earth or sand. and then transfer to a closable, labelled salvage container for disposal by an appropriate method. Do not flush with water.

4. Preventing the occurrence of secondary hazards.

No data available

7. Handling and Storage

1. Personal Precautions

Safe Handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.
Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge
Avoid exposure to air and water.
Store at 20°C under Argon or Nitrogen atmosphere.
P264: Wash skin thoroughly after handling.
P273: Avoid release to the environment.

Protection against explosions and fires

Keep away from sources of ignition - No smoking.

2. Conditions for safe storage, including any incompatibilities

Managing Storage Risks

Store at 20°C under Argon or Nitrogen atmosphere.
Storage at colder temperatures may cause formation of a precipitate.
Moving container to a warm location and occasional gentle swirling should redissolve the solid.
Air sensitive. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Never allow product to get in contact with water during storage.

Storage Controls

No special requirements

Maintaining Integrity

P210: Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

Other advice

No further information available.

3. Specific End Uses

The end use(s) have not been fully determined. The substance is supplied for Research and Development purposes by professionals only.

8. Exposure Controls/Personal Protection

1. Control Parameters

No Data Available

2. Exposure Controls

<i>General protective and hygiene measures</i>	P280: Wear protective gloves/protective clothing/eye protection/face protection. The standard precautionary measures should be adhered to when handling Avoid contact with skin and eyes
<i>Engineering measures</i>	Ensure there is exhaust ventilation of the area. Use only in a chemical fume hood.
<i>Eye / Face Protection</i>	Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
<i>Hand protection</i>	Handle with protective gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
<i>Respiratory protection</i>	P260: Do not breathe dust/fume/gas/mist/vapours/spray. Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or GEN (EU).
<i>Skin protection</i>	Protective clothing, antistatic. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
<i>Other personal protection advice</i>	No data available

9. Physical and Chemical Properties

1. Physical and Chemical Properties

Appearance	Clear colorless to yellow solution
Odour	No Data Available
Odour threshold	No Data Available
PH	No Data Available
Melting point / Freezing point	No Data Available
Initial boiling point and boiling range	No Data Available
Flash point	-20.0 °C (-4.0 °F)
Evaporation rate	No Data Available
Flammability(solid,gas)	No Data Available
Upper/lower flammability or explosive limits	No Data Available
Vapour pressure	No Data Available
Vapour density	No Data Available
Relative density	0.948 g/cm3
Solubility(ies):	No Data Available
Partition coefficient: n-octanol/water	No Data Available
Auto-ignition temperature	No Data Available
Decomposition temperature	No Data Available
Viscosity	No Data Available
Explosive properties	No Data Available
Oxidising properties	No Data Available

2. Other Information

136.28 g/mol
 ZnCl2

10. Stability and Reactivity

1. Reactivity

Air sensitive. Avoid exposure to air and water.
 Store at 20°C under Argon or Nitrogen atmosphere.

2. Stability

Stable under recommended storage conditions.
Store at 20°C under Argon or Nitrogen atmosphere.
May form precipitates when stored at colder temperatures.

3. Possibility of Hazardous Reactions

No data Available.

4. Conditions to Avoid

Heat, flames and sparks. Extremes of temperature and direct sunlight. Exposure to moisture.

5. Incompatible Materials

Oxidizing agents, Strong oxidizing agents, Oxygen.

6. Hazardous Decomposition Products

Hazardous decomposition products formed under fire conditions.
Carbon oxides, nitrogen oxides (NO_x), Hydrogen Halides.
Other decomposition products - no data available

11. Toxicology information

1. Information

<i>Acute Toxicity</i>	No data available
<i>Skin corrosion/irritation</i>	No data available
<i>Serious eye Damage/irritation</i>	No data available
<i>Respiratory or skin sensitisation</i>	No data available
<i>Germ Cell mutagenicity</i>	No data available
<i>Carcinogenicity</i>	No data available
<i>Reproductive toxicity</i>	No data available
<i>STOT-single exposure</i>	No data available
<i>STOT-repeated exposure</i>	No data available
<i>Aspiration hazard</i>	No data available

2. Additional

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
No additional information available.

12. Ecological Information

1. Toxicity

No data available

2. Persistence and degradability

No data available

3. Bio-Accumulative Potential

No data available

4. Mobility and Soil

No data available

5. Results of PBT & vPvB assessment

No data available

6. Other adverse effects

No data available

13. Disposal Considerations



1. Waste Treatment Methods

Disposal Operations


Disposal of Packaging Disposal must be made according to official regulations.

14. Transport Information



Air (ICAO)

1. **UN Number:** 2924
2. **Shipping Name:** Flammable liquid, corrosive, n.o.s. (Zinc Chloride, Tetrahydrofuran)
3. **Transport hazard class(es):** : 3 Sub Class : 8

4. **Packing group:** II
5. **Environmental hazards:**
6. **Special Precautions for user:**
7. **Transport in bulk:**

Road (ADR)

1. **UN Number:** 2924
2. **Shipping Name:** FLAMMABLE LIQUID, CORROSIVE, N.O.S.
3. **Transport hazard class(es):** : 3 Sub Class :

4. **Packing group:** II
5. **Environmental hazards:**
6. **Special Precautions for user:**
7. **Transport in bulk:**

Sea (IMDG)

1. **UN Number:** 2924
2. **Shipping Name:** Flammable liquid, corrosive, n.o.s. (Zinc Chloride, Tetrahydrofuran)
3. **Transport hazard class(es):** : 3 Sub Class : 8

4. **Packing group:** II
5. **Environmental hazards:**
6. **Special Precautions for user:** This entry shall not be used for PENTACHLOROPHENOL, UN 3155.
7. **Transport in bulk:** IBCINS: IBC02

UNTANKINS: T11
TANKPROV: TP2 TP27

15. Safety, health, environmental and national regulations

1. Safety, health, environmental and national regulations:

OSHA Hazards
Flammable Liquid, Water Reactive ,Target Organ Effect, Harmful by ingestion. Irritant, Carcinogen

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Fire Hazard, Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard

2. Safety Assessment

No Chemical Safety Assessment

16. Other Information

1. Other Information:

IATA: International Air Transport Association

IMDG: International Maritime Code for Dangerous Goods

ICAO-TI: Technical Instructions by the ICAO

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

3. Disclaimer

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product or fitness for a particular use. Rieke Metals, LLC shall not be held liable for any damage resulting from handling or from contact with the above product.

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