

SAFETY DATA SHEET

RUSSELL'S MODIFIED ZENKER'S WITHOUT MERCURY

Section 1 - Chemical Product and Company Identification

SDS Name: Russell's Modified Zenker's without Mercury

Catalog Numbers: SO-742, F-222

Company Identification: Transene Company, Inc., DBA ROWLEY BIOCHEMICAL, Inc.
10 ELECTRONICS AVENUE
DANVERS, MA 01923

For information, call: 978-739-4883

Emergency Number: 800-424-9300

For CHEMTREC assistance, call: 800-424-9300

Section 2 - Hazards Identification

GHS Classifications

H290-Corrosive to metals: 1

H303-Acute toxicity, oral: 5

H314-Skin corrosion/irritation: 1A

H317-Sensitisation, skin: 1

H318-Serious eye damage/eye irritation: 1

H332-Acute toxicity, inhalation: 4

H334-Sensitisation, respiratory: 1

H335-Specific target organ toxicity, single exposure; Respiratory tract irritation: 3

H340-Germ cell mutagenicity: 1B

H350-Carcinogenicity: 1A

H360-Reproductive toxicity: 1B

H373-Specific target organ toxicity, repeated exposure: 2

Pictograms or Hazard symbols and Hazard statement(s):



Signal word: Danger

Hazard Statements:

H290-May be corrosive to metals
H303-May be harmful if swallowed
H314-Causes severe skin burns and eye damage
H317-May cause an allergic skin reaction
H318-Causes serious eye damage
H332-Harmful if inhaled
H334-May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335-May cause respiratory irritation
H340-May cause genetic defects
H350-May cause cancer
H360-May damage fertility or the unborn child
H373-May cause damage to organs through prolonged or repeated exposure

Precautionary Statements:

P201-Obtain special instructions before use.
P202-Do not handle until all safety precautions have been read and understood.
P234-Keep only in original container.
P260-Do not breathe dust/fume/gas/mist/vapours/spray.
P261-Avoid breathing dust/fume/gas/mist/vapours/spray.
P264-Wash thoroughly after handling.
P271-Use only outdoors or in a well-ventilated area.
P272-Contaminated work clothing should not be allowed out of the workplace.
P280-Wear protective gloves/protective clothing/eye protection/face protection.
P281-Use personal protective equipment as required.
P285-In case of inadequate ventilation wear respiratory protection.
P301+P330+P331-If swallowed: Rinse mouth. Do NOT induce vomiting.
P302+P352-If on skin: Wash with plenty of soap and water.
P303+P361+P353-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.
P304+P341-If inhaled: If breathing is difficult, 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.
P308+P313-If exposed or concerned: Get medical advice/attention.
P310-Immediately call a Poison Center or doctor/physician.
P312-Call a Poison Center or doctor/physician if you feel unwell.
P314-Get medical advice/attention if you feel unwell.
P333+P313-If skin irritation or rash occurs: Get medical advice/attention.
P342+P311-If experiencing respiratory symptoms: Call a Poison Center or doctor/physician.
P363-Wash contaminated clothing before reuse.
P390-Absorb spillage to prevent material damage.
P403+P233-Store in a well-ventilated place. Keep container tightly closed.
P405-Store locked up.
P406-Store in corrosive resistant/container with a resistant inner liner.
P501-Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 3 - Composition, Information on Ingredients

CAS #	Chemical Name	Percent
7646-85-7	Zinc Chloride	4.8 w/v
7778-50-9	Potassium Dichromate	2.4 w/v
64-19-7	Glacial Acetic Acid	4.8 v/v
7757-82-6	Sodium Sulfate	<1 w/v
7732-18-5	Water	Balance

Section 4 - First Aid Measures

Eye Exposure: In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Immediate medical attention is required.

Dermal Exposure: In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Immediate medical attention is required.

Oral Exposure: If swallowed, seek immediate medical advice. Do NOT induce vomiting.

Inhalation Exposure: If inhaled, remove to fresh air. Immediate medical attention is required.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating gases may be generated by thermal decomposition or combustion.

Extinguishing Media: Use dry chemical, carbon dioxide, dry sand, water spray, or alcohol-resistant foam.

Hazardous Combustion Products: Carbon oxides, chromium oxides, potassium oxides, sulfur oxides, sodium oxides, hydrogen chloride gas, zinc, irritating toxic fumes and gases.

Flash Point: Not available

Autoignition Temperature: Not available

Explosion Limits, Lower: Not available

Upper: Not available

NFPA Rating: (estimated) Health: 3; Flammability: 0; Instability: 0

Note: Do not allow this material to dry out. When dried from aqueous solution, remaining solids will have oxidizing properties and should be kept away from flammables or combustibles.

Section 6 - Accidental Release Measures

Procedure(s) of Personal Precaution(s):

Wear personal protective equipment. Do not ingest or inhale. Do not get on skin or clothing. Do not get in eyes. Ensure adequate ventilation. Keep away from heat. Eliminate all sources of ignition.

Methods for Cleaning up: Absorb with sand, earth, or vermiculite. Carefully sweep up and containerize for proper disposal. Do not release to the environment. Do not release to drains.

Section 7 - Handling and Storage

Use care when handling. Wear personal protective equipment. Use only under a chemical fume hood. Wash thoroughly after handling. Avoid contact with skin, eyes, and clothing. Do not ingest. Do not breathe vapors/mists. Store in a tightly closed container at room temperature. Keep away from incompatible materials. Keep away from clothing and combustible materials. Protect from heat.

Note: Acetic acid is extremely destructive to all body tissue. In concentrated form (glacial acetic acid), it is corrosive and flammable. Inhalation of concentrated vapors may cause serious damage to the lining of the nose, throat, and lungs. Breathing difficulties may occur. Ingestion of concentrated acetic acid causes severe swelling, severe damage to the tissue and danger of perforation. Contact with concentrated acetic acid may cause serious damage to the skin. Eye contact with concentrated acetic acid may cause severe eye damage followed by loss of sight. Exposure to vapor may cause intense watering and irritation to eyes.

Note: Do not allow this material to dry out. When dried from aqueous solution, remaining solids will have oxidizing properties and should be kept away from flammables or combustibles.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

Exposure Limits:

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Zinc chloride CAS#7646-85-7	1 mg/m3 TWA 2 mg/m3 STEL	1 mg/m3 TWA 2 mg/m3 STEL 50 mg/m3 IDLH	1 mg/m3 TWA
Potassium dichromate CAS#7778-50-9	0.0002 mg/m3 TWA 0.0005 mg/m3 Skin STEL	0.0002 mg/m3 TWA 15 mg/m3 IDLH	0.1 mg/m3 Ceiling
Glacial Acetic Acid CAS#64-19-7	15 ppm STEL 10 ppm TWA	10 ppm TWA 25 mg/m3 TWA 50 ppm IDLH 15 ppm STEL 37 mg/m3 STEL	10 ppm TWA 25 mg/m3 TWA
Sodium Sulfate CAS#7757-82-6	Not listed	Not listed	Not listed

OSHA Vacated PELs: Zinc chloride: 1 mg/m3 TWA , 2 mg/m3 STEL
Potassium dichromate: 0.1 mg/m3 Ceiling
Glacial Acetic Acid: 10 ppm TWA; 25 mg/m3 TWA

Section 9 - Physical and Chemical Properties
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Physical State: Liquid

Appearance: Not available

Odor: Not available

Vapor Pressure: Not available

Odor threshold: Not available

Vapor Density: Not available

pH: approx. 2.2-2.5

Relative density: Not available

Melting point/freezing point: Not available

Solubility: Soluble in water

Boiling Point: Not available

Flash point: Not available

Evaporation Rate: Not available

Flammability (solid, gas): Not available

Partition coefficient: n-octanol/water: Not available

Auto-ignition temperature: Not available

Decomposition temperature: Not available

Viscosity: Not available

Specific Gravity/Density: Not available

Section 10 - Stability and Reactivity

Chemical Stability: Stable under ordinary conditions of use and storage. Heat and sunlight can contribute to instability.

Conditions to Avoid: Incompatible materials, ignition sources, excess heat, and freezing. Avoid contact with combustible/organic materials and flammable materials.

Incompatibilities with Other Materials: Strong oxidizing agents, reducing agents, acids, strong bases, acid anhydrides, strong reducing agents, combustible materials, cyanides, sulfides, chromic acid, ethylene glycol, perchloric acid, phosphorous trichloride, oxidizers, sodium peroxide, strong caustics, most metals, carbonates, hydroxides, oxides, combustible materials, and phosphates.

Hazardous Decomposition Products: Carbon oxides, chromium oxides, potassium oxides, sulfur oxides, sodium oxides, hydrogen chloride gas, zinc, irritating toxic fumes and gases.

Note: Do not allow this material to dry out. When dried from aqueous solution, remaining solids will have oxidizing properties and should be kept away from flammables or combustibles.

Section 11 - Toxicological Information

CAS# 7646-85-7 Zinc chloride:

LD50 Oral: 350 mg/kg (rat)

LD50 Dermal: Not available

LC50 Inhalation: ≤ 1975 mg/m³ 10min (rat)

Carcinogenicity: Zinc chloride CAS#7646-85-7 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop 65.

CAS#7778-50-9 Potassium Dichromate: RTECS#: HX7680000

LD50 Oral: 90.5 mg/kg (rat)

LD50 Dermal: 1150 mg/kg (rabbit)

LC50 Inhalation: 0.09 mg/L 4h (rat)

Carcinogenicity: Potassium dichromate CAS#7778-50-9 is not listed by OSHA. Potassium dichromate is listed by IARC (Group 1, Carcinogenic to Humans), NTP (Known Carcinogen), ACGIH (A1, Known Human Carcinogen), and California Prop. 65 as a developmental carcinogen (female and male reproductive).

CAS#64-19-7 Glacial Acetic Acid: RTECS#: AF1225000

LD50 Oral: 3310 mg/kg (rat)

LC50 Inhalation: 11.4 mg/l (rat) 4h

LC50 Inhalation: 5620 ppm (mouse) 1h

LD50 Dermal: 1,112 mg/kg (rabbit)

Investigated as a mutagen, reproductive effector.

Skin corrosion/irritation: skin (rabbit), causes severe burns

Serious eye damage/eye irritation: eyes (rabbit), corrosive to eyes

Carcinogenicity: Glacial Acetic Acid CAS#64-19-7 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop 65.

CAS#7757-82-6 Sodium Sulfate:

LD50 Oral: >10000 mg/kg (rat)

LD50 Dermal: Not available

LC50 Inhalation: Not available

Carcinogenicity: Sodium sulfate CAS#7757-82-6 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop 65.

Note: Acetic acid is extremely destructive to all body tissue. In concentrated form (glacial acetic acid), it is corrosive and flammable. Inhalation of concentrated vapors may cause serious damage to the lining of the nose, throat, and lungs. Breathing difficulties may occur. Ingestion of concentrated acetic acid causes severe swelling, severe damage to the tissue and danger of perforation. Contact with concentrated acetic acid may cause serious damage to the skin. Eye contact with concentrated acetic acid may cause severe eye damage followed by loss of sight. Exposure to vapor may cause intense watering and irritation to eyes.

Epidemiology: Not available

Teratogenicity: Not available

Reproductive Effects: May impair fertility.

Developmental Effects: Developmental hazard.

Neurotoxicity: Not available

Mutagenicity: Not available

Specific Target Organ Toxicity, Single Exposure: Respiratory system.

Specific Target Organ Toxicity, Repeated Exposure: Respiratory system, liver, kidney, and blood.

Note: This material is corrosive. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

The toxicological properties of this material have not been thoroughly investigated.

Section 12 - Ecological Information

Ecotoxicity: Do not release to the environment. Do not release to drains. Very toxic to aquatic life. May cause long-term adverse effects in the aquatic environment.

CAS#7646-85-7 Zinc chloride:

LC50, freshwater fish: 0.4-2.2 mg/L 96h (cyprinus carpio)

EC50, freshwater algae: 0.027-0.105 mg/L 72h

EC50, water flea: 0.2 mg/L 48h

CAS#7778-50-9 Potassium dichromate:

LC50, freshwater fish: 24.81-34.55 mg/L 96h semi-static (poecilia reticulata)

LC50, freshwater fish: 23-41.2 mg/L 96h static (poecilia reticulata)

LC50, freshwater fish: 14-20.9 mg/L 96h static (pimephales promelas)

LC50, freshwater fish: 15.41-30.36 mg/L 96h flow-through (pimephales promelas)

LC50, freshwater fish: >139 mg/L 96h static (cyprinus carpio)

LC50, freshwater fish: 113.6-155.7 mg/L 96h flow-through (lepomis macrochirus)
LC50, freshwater fish: 320 mg/L 96h (lepomis macrochirus)
LC50, freshwater fish: 65.6-137.6 mg/L 96h static (lepomis macrochirus)
LC50, freshwater fish: 12.3 mg/L 96h semi-static (oncorhynchus mykiss)
LC50, freshwater fish: 21.209-30.046 mg/L 96h semi-static (oryzias latipes)
EC50, water flea: 1.4 mg/L 24h

CAS# 64-19-7 Glacial Acetic Acid:

LC50 freshwater fish: 88 mg/L 96h (pimephales promelas)
LC50, freshwater fish: 75 mg/L 96h (Lepomis macrochirus)
EC50, water flea: 95 mg/L 24h

CAS# 7757-82-6 Sodium sulfate:

LC50, freshwater fish: 13.5-14.5 g/L 96h (pimephales promelas)
EC50, water flea: 4547 mg/L 96h
EC50, water flea: 2564 mg/L 48h

Persistence and degradability: Not available.

Bio-accumulative potential: Not available.

Mobility: Will likely be mobile in the environment due to its water solubility.

Section 13 - Disposal Considerations

DISPOSAL: Dispose of in accordance with all federal, state, and local regulations.

Section 14 – Transport Information

DOT

Proper shipping name: Corrosive Liquid, Acidic, Inorganic, N.O.S. (Potassium Dichromate Solution)
UN3264
PG II
Hazard class 8

Section 15 - Regulatory Information

Canada Regulatory Information

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the SDS contains all the information required by the CPR.

Section 16 - Additional Information

SDS Creation Date: 10-15-12

Revision #1. YM 8-11-14 Co-sign RC 12-2-14

Revision #2. 3-6-20

Revision #3. 4-19-22

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