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: 1B
H317-Sensitisation, skin: 1
H318-Serious eye damage/eye irritation: 1
H332-Acute toxicity, inhalation: 4
H334-Sensitisation, respiratory: 1
H335-Specifc target organ toxicity, single exposure; Respiratory tract irritation: 3
H340-Germ cell mutagenicity: 1B
H350-Carcinogenicity: 1B
H360-Reproducitve toxicity: 1B
H372-Specific target organ toxicity, repeated exposure: 1
H401-Hazardous to the aquatic environment, acute hazard: 2
H411-Hazardous to the aquatic environment, long-term hazard: 2

Pictogram 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
H372-Causes damage to organs through prolonged or repeated exposure (target organs: respiratory system, cardiovascular system, kidney, liver, and blood)
H401-Toxic to aquatic life
H411-Toxic to aquatic life with long lasting effects

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 packaging.
P260-Do not breathe dust/fume/gas/mist/vapours/spray.
P261-Avoid breathing dust/fume/gas/mist/vapours/spray.
P264-Wash thoroughly after handling.
P270-Do not eat, drink, or smoke when using this product.
P271-Use only outdoors or in a well-ventilated area.
P272-Contaminated work clothing should not be allowed out of the workplace.
P273-Avoid release to the environment.
P280-Wear protective gloves/protective clothing/eye protection/face protection.
P284-In case of inadequate ventilation wear respiratory protection.
P301+P312-If swallowed: Call a Poison Center/doctor if you feel unwell.
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): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340-If inhaled: Remove person to fresh air and keep 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/doctor.
P312-Call a Poison Center/doctor 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/doctor.
P362+P364-Take off contaminated clothing and wash it before reuse.
P363-Wash contaminated clothing before reuse.
P390-Absorb spillage to prevent material damage.
P391-Collect spillage.
P403+P233-Store in a well-ventilated place. Keep container tightly closed.
P405-Store locked up.
P406-Store in a corrosion 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
7757-82-6	Sodium Sulfate	0.95 w/v
64-19-7	Glacial Acetic Acid	4.8 v/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. Get immediate medical attention.

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

Oral Exposure: If swallowed, get immediate medical advice. Do NOT induce vomiting. Rinse mouth with water.

Inhalation Exposure: If inhaled, remove to fresh air. Get immediate medical attention.

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, sodium oxides, sulfur oxides, zinc/zinc oxides, hydrogen chloride gas, irritating and 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.

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. Wash thoroughly after handling. Ensure adequate ventilation. Use only under a chemical hood. Avoid contact with eyes, skin, and clothing. Do not ingest. Do not breathe vapors/mist. Keep in a tightly closed and non-metal container. Store in a cool, dry, and well-ventilated area. Keep away from clothing and other combustible materials. Keep away from incompatible materials.

Note: Do not allow this material to dry out. When dried from aqueous solution, remaining solids will have oxidizing properties and should 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 - TLV	NIOSH - IDLH	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
Sodium Sulfate CAS#7757-82-6	Not listed	Not listed	Not listed
Glacial Acetic Acid CAS#64-19-7	10 ppm TWA 15 ppm STEL	10 ppm TWA 25 mg/m3 TWA 15 ppm STEL 37 mg/m3 STEL 50 ppm IDLH	10 ppm TWA 25 mg/m3 TWA

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

Physical State: Liquid
Appearance: Orange
Odor: Vinegar-like
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
Autoignition Temperature: Not available
Decomposition Temperature: Not available
Viscosity: Not available
Specific Gravity/Density: Not available

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials, ignition sources, and excess heat.
Incompatibilities with Other Materials: Strong oxidizing agents, reducing agents, strong bases, acids, acid anhydrides, cyanides, sulfides, metals, chromic acid, ethylene

glycol, perchloric acid, nitric acid, phosphorous trichloride, oxidizers, sodium peroxide, strong caustics, carbonates, hydroxides, oxides, phosphates, and combustible material.
Hazardous Decomposition Products: Carbon oxides, chromium oxides, potassium oxides, sodium oxides, sulfur oxides, zinc/zinc oxides, hydrogen chloride gas, irritating and 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: RTECS#: ZH1400000
LD50 Oral: 1100 mg/kg (rat)
LD50 Dermal: >2000 mg/kg (rat)
LC50 Inhalation: ≤1975 mg/m3 10min aerosol (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 carcinogen, developmental toxin, male reproductive toxin, and female reproductive toxin.

CAS#7757-82-6 Sodium Sulfate: RTECS#: WE1650000
LD50 Oral: >10000 mg/kg (rat)
LD50 Dermal: Not available
LC50 Inhalation: >2.4 mg/L 4h (rat)

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

CAS#64-19-7 Glacial Acetic Acid: RTECS#: AF1225000
LD50 Oral: 3310 mg/kg (rat)
LD50 Dermal: 1060 mg/kg (rabbit)
LC50 Inhalation: 11.4 mg/L 4h (rat)
Investigated as a mutagen, reproductive effecter.

Skin corrosion/irritation: skin (rabbit), causes severe burns.
Serious eye damage/eye irritation: eyes (rabbit), corrosive to eyes, and causes serious eye damage.

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

Information on the likely routes of exposure: Routes of entry anticipated: oral, dermal, inhalation, and eye.

Epidemiology: Not available.
Teratogenicity: May cause harm to the unborn child (Potassium Dichromate).
Reproductive Effects: May damage fertility or the unborn child (Potassium Dichromate).
Developmental Effects: Component substance is listed on California Prop. 65 as a developmental hazard. (Potassium Dichromate)
Neurotoxicity: Not available.
Mutagenicity: May cause genetic defects (Potassium Dichromate).
Specific Target Organ Toxicity, Single Exposure: Respiratory system.
Specific Target Organ Toxicity, Repeated Exposure: Respiratory system, cardiovascular system, kidney, liver, and blood.

Symptoms associated with exposure: Destructive to the tissue of the mucous membranes, respiratory tract, eyes, and skin. Skin contact may cause burns, redness, pain, blisters, and/or an allergic skin reaction. Eye contact may cause serious eye damage, pain, irritation, redness, watering, and blurred vision. If inhaled, may cause breathing difficulties, allergy/asthma symptoms, coughing, headache, and dizziness. Ingestion may irritate and burn mucous membranes and cause pain, vomiting, diarrhea, nausea, swelling, and tissue damage. May cause cancer. May cause genetic defects. May damage fertility or the unborn child.

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. Toxic to aquatic life. May cause long-term adverse effects to the aquatic environment.

CAS#7646-85-7 Zinc Chloride:
LC50, freshwater fish: 0.169 mg/L 96h static (oncorhynchus mykiss)(rainbow trout)
EC50, water flea: 0.33 mg/L 48h static (daphnia magna)
IC50, bacteria: 0.35 mg/L 4h static (activated sludge)

CAS#7778-50-9 Potassium Dichromate:
LC50, freshwater fish: 14-20.9 mg/L 96h (pimephales promelas)(fathead minnow)
LC50, freshwater fish: 58.5 mg/L 96h (danio rerio)(zebra fish)
LC50, freshwater fish: >139 mg/L 96h static (cyprinus carpio)(carp)
LC50, freshwater fish: 12.3 mg/L 96h semi-static (oncorhynchus mykiss)(rainbow trout)
ErC50, algae: 0.233 mg/L 72h static (selenastrum capricornutum)(green algae)
EC50, water flea: 0.035 mg/L 48h (daphnia magna)

CAS#7757-82-6 Sodium Sulfate:
LC50, freshwater fish: 7960 mg/L 96h static (pimephales promelas)(fathead minnow)
EC50, algae: 1900 mg/L 120h static (nitzschia sp.)
EC50, water flea: 1766 mg/L 48h static (daphnia magna)

CAS#64-19-7 Glacial Acetic Acid:
LC50, freshwater fish: 88 mg/L 96h (pimephales promelas)(fathead minnow)
LC50, freshwater fish: 75 mg/L 96h (lepomis macrochirus)(bluegill)
EC50, water flea: 95 mg/L 24h
EC50, microtox: 8.8 mg/L 5min (photobacterium phosphoreum)

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
Non-Regulated

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
Revision #2: 3-6-20
Revision #3: 4-19-22
Revision #4: 9-10-24

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