

24 hour Emergency Telephone:  
Chemtrec: 1-800-424-9300

Outside U.S. and Canada Chemtrec: 202-483-7616

**MSDS**

## Material Safety Data Sheet

From: Vinquiry, Inc.  
7795 Bell Road  
Windsor, CA 95492



**NOTE:** CHEMTREC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All Non-emergency questions should be directed to Customer Service (1-707-838-6312) for assistance.

## Fehlings B Reagent

Contains: **Potassium Sodium Tartrate, 4-Hydrate and Sodium Hydroxide, Solid**

Vinquiry Product Codes: 10-098-0000, 10-098-0237, 10-098-0473, 10-098-0946

**MSDS Number: FB098 Effective Date: 01/01/04**

## POTASSIUM SODIUM TARTRATE (34.6%)

**MSDS Number: PS216 --- Effective Date: 01/01/04**

### 1. Product Identification

**Synonyms:** Rochelle Salt; Seignette Salt; sodium potassium tartrate; 2,3-dihydroxy-[R-(R\*,R\*)]-butanedioic acid, monopotassium monosodium salt tetrahydrate

**CAS No.:** 304-59-6

**Molecular Weight:** 282.22

**Chemical Formula:** KNaC<sub>4</sub>H<sub>4</sub>O<sub>6</sub> · 4H<sub>2</sub>O

### 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Potassium Sodium Tartrate	304-59-6	99 - 100%	Yes

### 3. Hazards Identification

#### Emergency Overview

**CAUTION! MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.**

**VINQUIRY INC. SAFETY DATA Ratings (Provided here for your convenience)**

Health Rating: 3 - Severe

Flammability Rating: 1 - Slight

Reactivity Rating: 2 - Moderate

Contact Rating: 4 - Severe

Lab Protective Equip: GOGGLES; LAB COAT  
Storage Color Code: Orange (General Storage)

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### **Potential Health Effects**

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#### **Inhalation:**

May cause irritation to the respiratory tract. Symptoms may include coughing and shortness of breath.

#### **Ingestion:**

Large oral doses may cause irritation to the gastrointestinal tract. May cause sore throat, abdominal pain. Large doses can have cathartic effects.

#### **Skin Contact:**

May cause irritation with redness and pain.

#### **Eye Contact:**

May cause irritation, redness and pain.

#### **Chronic Exposure:**

No information found.

#### **Aggravation of Pre-existing Conditions:**

People with pre-existing heart disease or on a low sodium diet may be more susceptible to the effects of this substance.

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## **4. First Aid Measures**

#### **Inhalation:**

Remove to fresh air. Get medical attention for any breathing difficulty.

#### **Ingestion:**

If large amounts were swallowed, give water to drink and get medical advice.

#### **Skin Contact:**

Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation develops.

#### **Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention if irritation persists.

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## **5. Fire Fighting Measures**

#### **Fire:**

As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source.

#### **Explosion:**

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

#### **Fire Extinguishing Media:**

Water spray, dry chemical, alcohol foam, or carbon dioxide.

#### **Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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## 6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal.

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## 7. Handling and Storage

Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

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## 8. Exposure Controls/Personal Protection

### **Airborne Exposure Limits:**

None established.

### **Ventilation System:**

In general, dilution ventilation is a satisfactory health hazard control for this substance. However, if conditions of use create discomfort to the worker, a local exhaust system should be considered.

### **Personal Respirators (NIOSH Approved):**

For conditions of use where exposure to the dust or mist is apparent, a half-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

### **Skin Protection:**

Wear protective gloves and clean body-covering clothing.

### **Eye Protection:**

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

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## 9. Physical and Chemical Properties

### **Appearance:**

Colorless, transparent crystals or white powder.

### **Odor:**

Odorless.

### **Solubility:**

Soluble in water.

### **Density:**

1.79

### **pH:**

7-8

### **% Volatiles by volume @ 21C (70F):**

0

**Boiling Point:**

220C (428F) Begins to decompose

**Melting Point:**

70 - 80C (158 - 176F)

**Vapor Density (Air=1):**

No information found.

**Vapor Pressure (mm Hg):**

No information found.

**Evaporation Rate (BuAc=1):**

No information found.

## 10. Stability and Reactivity

**Stability:**

Stable under ordinary conditions of use and storage.

**Hazardous Decomposition Products:**

Carbon dioxide and carbon monoxide may form when heated to decomposition.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Acids, calcium or lead salts, silver nitrate, magnesium sulfate.

**Conditions to Avoid:**

Heat, flames, ignition sources and incompatibles.

## 11. Toxicological Information

No LD50/LC50 information found relating to normal routes of occupational exposure.

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Potassium Sodium Tartrate (304-59-6)	No	No	None

## 12. Ecological Information

**Environmental Fate:**

No information found.

**Environmental Toxicity:**

No information found.

## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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## 14. Transport Information

Not regulated.

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## 15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----  
Ingredient TSCA EC Japan Australia  
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Potassium Sodium Tartrate (304-59-6) Yes Yes Yes Yes

-----\Chemical Inventory Status - Part 2\-----  
Ingredient Korea DSL NDSL Phil.  
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Potassium Sodium Tartrate (304-59-6) Yes Yes No Yes

-----\Federal, State & International Regulations - Part 1\-----  
Ingredient -SARA 302- -SARA 313-  
RQ TPQ List Chemical Catg.  
-----  
Potassium Sodium Tartrate (304-59-6) No No No No

-----\Federal, State & International Regulations - Part 2\-----  
Ingredient CERCLA -RCRA- -TSCA-  
261.33 8(d)  
-----  
Potassium Sodium Tartrate (304-59-6) No No No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No  
SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No  
Reactivity: No (Mixture / Solid)

**Australian Hazchem Code:** No information found.

**Poison Schedule:** No information found.

### WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

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## 16. Other Information

**NFPA Ratings:** Health: **1** Flammability: **1** Reactivity: **0**

### Label Hazard Warning:

CAUTION! MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

### Label Precautions:

Avoid contact with eyes, skin and clothing.

Avoid breathing dust.

Keep container closed.

Use with adequate ventilation.

Wash thoroughly after handling.

### Label First Aid:

If inhaled, remove to fresh air. Get medical attention for any breathing difficulty. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists.

**Product Use:**

Laboratory Reagent.

**Revision Information:**

No changes.

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## SODIUM HYDROXIDE (10%)

MSDS Number: SH237 --- *Effective Date: 01/01/04*

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### 1. Product Identification

**Synonyms:** Caustic soda; lye; sodium hydroxide solid; sodium hydrate

**CAS No.:** 1310-73-2

**Molecular Weight:** 40.00

**Chemical Formula:** NaOH

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### 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Sodium Hydroxide	1310-73-2	99 - 100%	Yes

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### 3. Hazards Identification

**Emergency Overview**

**POISON! DANGER! CORROSIVE. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. CAUSES BURNS TO ANY AREA OF CONTACT. REACTS WITH WATER, ACIDS AND OTHER MATERIALS.**

**VINQUIRY INC. SAFETY DATA Ratings (Provided here for your convenience)**

Health Rating: 3 - Severe (Poison)

Flammability Rating: 0 - None

Reactivity Rating: 2 - Moderate

Contact Rating: 4 - Extreme (Corrosive)

Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES

Storage Color Code: White Stripe (Store Separately)

**Potential Health Effects**

**Inhalation:**

Severe irritant. Effects from inhalation of dust or mist vary from mild irritation to serious damage of the

upper respiratory tract, depending on severity of exposure. Symptoms may include sneezing, sore throat or runny nose. Severe pneumonitis may occur.

**Ingestion:**

Corrosive! Swallowing may cause severe burns of mouth, throat, and stomach. Severe scarring of tissue and death may result. Symptoms may include bleeding, vomiting, diarrhea, fall in blood pressure. Damage may appear days after exposure.

**Skin Contact:**

Corrosive! Contact with skin can cause irritation or severe burns and scarring with greater exposures.

**Eye Contact:**

Corrosive! Causes irritation of eyes, and with greater exposures it can cause burns that may result in permanent impairment of vision, even blindness.

**Chronic Exposure:**

Prolonged contact with dilute solutions or dust has a destructive effect upon tissue.

**Aggravation of Pre-existing Conditions:**

Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the effects of the substance.

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## 4. First Aid Measures

**Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

**Ingestion:**

DO NOT INDUCE VOMITING! Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**Skin Contact:**

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician, immediately. Wash clothing before reuse.

**Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

**Note to Physician:**

Perform endoscopy in all cases of suspected sodium hydroxide ingestion. In cases of severe esophageal corrosion, the use of therapeutic doses of steroids should be considered. General supportive measures with continual monitoring of gas exchange, acid-base balance, electrolytes, and fluid intake are also required.

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## 5. Fire Fighting Measures

**Fire:**

Not considered to be a fire hazard. Hot or molten material can react violently with water. Can react with certain metals, such as aluminum, to generate flammable hydrogen gas.

**Explosion:**

Not considered to be an explosion hazard.

**Fire Extinguishing Media:**

Use any means suitable for extinguishing surrounding fire. Adding water to caustic solution generates large amounts of heat.

**Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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## 6. Accidental Release Measures

Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust. Do not flush caustic residues to the sewer. Residues from spills can be diluted with water, neutralized with dilute acid such as acetic, hydrochloric or sulfuric. Absorb neutralized caustic residue on clay, vermiculite or other inert substance and package in a suitable container for disposal. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

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## 7. Handling and Storage

Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. Always add the caustic to water while stirring; never the reverse. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product. Do not store with aluminum or magnesium. Do not mix with acids or organic materials.

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## 8. Exposure Controls/Personal Protection

### **Airborne Exposure Limits:**

- OSHA Permissible Exposure Limit (PEL):

2 mg/m<sup>3</sup> Ceiling

- ACGIH Threshold Limit Value (TLV):

2 mg/m<sup>3</sup> Ceiling

### **Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

### **Personal Respirators (NIOSH Approved):**

If the exposure limit is exceeded, a half-face dust/mist respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece dust/mist respirator may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

### **Skin Protection:**

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

### **Eye Protection:**

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

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## 9. Physical and Chemical Properties

**Appearance:**

White, deliquescent pellets or flakes.

**Odor:**

Odorless.

**Solubility:**

111 g/100 g of water.

**Specific Gravity:**

2.13

**pH:**

13 - 14 (0.5% soln.)

**% Volatiles by volume @ 21C (70F):**

0

**Boiling Point:**

1390C (2534F)

**Melting Point:**

318C (604F)

**Vapor Density (Air=1):**

> 1.0

**Vapor Pressure (mm Hg):**

Negligible.

**Evaporation Rate (BuAc=1):**

No information found.

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## 10. Stability and Reactivity

**Stability:**

Stable under ordinary conditions of use and storage. Very hygroscopic. Can slowly pick up moisture from air and react with carbon dioxide from air to form sodium carbonate.

**Hazardous Decomposition Products:**

Sodium oxide. Decomposition by reaction with certain metals releases flammable and explosive hydrogen gas.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Sodium hydroxide in contact with acids and organic halogen compounds, especially trichloroethylene, may cause violent reactions. Contact with nitromethane and other similar nitro compounds causes formation of shock-sensitive salts. Contact with metals such as aluminum, magnesium, tin, and zinc cause formation of flammable hydrogen gas. Sodium hydroxide, even in fairly dilute solution, reacts readily with various sugars to produce carbon monoxide. Precautions should be taken including monitoring the tank atmosphere for carbon monoxide to ensure safety of personnel before vessel entry.

**Conditions to Avoid:**

Moisture, dusting and incompatibles.

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## 11. Toxicological Information

Irritation data: skin, rabbit: 500 mg/24H severe; eye rabbit: 50 ug/24H severe; investigated as a mutagen.

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Sodium Hydroxide (1310-73-2)	No	No	None

## 12. Ecological Information

### Environmental Fate:

No information found.

### Environmental Toxicity:

No information found.

## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

## 14. Transport Information

### Domestic (Land, D.O.T.)

**Proper Shipping Name:** SODIUM HYDROXIDE, SOLID

**Hazard Class:** 8

**UN/NA:** UN1823

**Packing Group:** II

**Information reported for product/size:** 300LB

### International (Water, I.M.O.)

**Proper Shipping Name:** SODIUM HYDROXIDE, SOLID

**Hazard Class:** 8

**UN/NA:** UN1823

**Packing Group:** II

**Information reported for product/size:** 300LB

## 15. Regulatory Information

Ingredient	TSCA	EC	Japan	Australia
Sodium Hydroxide (1310-73-2)	Yes	Yes	Yes	Yes

-----\Chemical Inventory Status - Part 2\-----

Ingredient	--Canada--			
	Korea	DSL	NDSL	Phil.
Sodium Hydroxide (1310-73-2)	Yes	Yes	No	Yes

-----\Federal, State & International Regulations - Part 1\-----

Ingredient	-SARA 302-		-----SARA 313-----	
	RQ	TPQ	List	Chemical Catg.
Sodium Hydroxide (1310-73-2)	No	No	Yes	No

-----\Federal, State & International Regulations - Part 2\-----

Ingredient	CERCLA	-RCRA-	-TSCA-
		261.33	8(d)
Sodium Hydroxide (1310-73-2)	1000	No	No

Chemical Weapons Convention: No      TSCA 12(b): No      CDTA: No  
 SARA 311/312: Acute: Yes      Chronic: No      Fire: No      Pressure: No  
 Reactivity: Yes      (Pure / Solid)

**Australian Hazchem Code: 2R**

**Poison Schedule: S6**

**WHMIS:**

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

## 16. Other Information

**NFPA Ratings:** Health: **3** Flammability: **0** Reactivity: **1**

**Label Hazard Warning:**

POISON! DANGER! CORROSIVE. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. CAUSES BURNS TO ANY AREA OF CONTACT. REACTS WITH WATER, ACIDS AND OTHER MATERIALS.

**Label Precautions:**

Do not get in eyes, on skin, or on clothing.

Do not breathe dust.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

**Label First Aid:**

If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. In all cases get medical attention immediately.

**Product Use:**

Laboratory Reagent.

**Revision Information:**

## Disclaimer

Vinquiry Inc. provides this information in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to laboratory use of this material by a properly trained person. Individuals receiving this information must exercise their independent judgment in determining its appropriateness for a particular purpose. Vinquiry Inc. will not be responsible for damages resulting from use or reliance upon this information.