

# Material Safety Data Sheet

## Potassium Formate

### I. PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Potassium Formate  
**Generic Description:** KFormate; Formic acid, potassium salt

**Date Revised:** 7/2010

#### Supplier:

#### NOV FluidControl

4310 N Sam Houston Parkway East  
Houston, Texas 77032 USA  
Office: (713) 482-0500  
Fax: (713) 482-0695  
Company website: [www.nov.com](http://www.nov.com)

#### **Emergency Telephone Number:**

**CHEMTREC: 1-800-424-9300 or International +1-703-527-3887**

### II. COMPOSITION INFORMATION

Chemical Name	CAS Number	EINECS Number	Weight %	EU Classification
Formic acid, potassium salt	590-29-4	209-677-9	70-76	None
Water	7732-18-5	231-791-2	24-30	None
Other alkali formates	Various	Not assigned	<3	None

### III. HAZARDOUS IDENTIFICATION

**EMERGENCY OVERVIEW - CAUTION:** Slight Yellow Liquid. This material is irritating to skin, eyes and respiratory tract.  
**Principle Routes of Exposure:** Inhalation, Eye contact, Skin contact

#### POTENTIAL HEALTH EFFECTS

**Eye Contact:** Irritating to eyes. Avoid contact with eyes.

**Skin Contact:** Irritating to skin. Avoid contact with skin.

**Inhalation:** Dried product may be irritating to respiratory tract. Do not breathe dust.

**Ingestion:** Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Low hazard for usual industrial or commercial handling.

**Carcinogenic Effects:** Does not contain any substances listed by IARC (International Agency for Research on Cancer), NTP (National Toxicology Program), OSHA (Occupational Safety and Health Administration), ACGIH (American Conference for Governmental Industrial Hygienists) or EU (European Union).

**Target Organ Effects:** Eyes, Skin, Respiratory system

**Medical Conditions Aggravated by Exposure:** None under normal use

**Potential Environmental Effects:** No special environmental precautions required.

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### **IV. FIRST AID MEASURES**

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**Skin Contact:** Wash thoroughly with soap and water. Remove contaminated clothing and shoes. Seek medical attention if redness, swelling, itching, or burning occurs.

**Eye Contact:** Flush eyes immediately with large amounts of water for 15 minutes. Seek medical attention if redness, swelling, itching, burning or visual disturbances occur.

**Inhalation:** If cough, shortness of breath or other breathing problems occur, move to fresh air. Seek medical attention if symptoms persist. If necessary, restore normal breathing through standard first aid measures.

**Ingestion:** Do not induce vomiting. If conscious, give several glasses of water. Never give anything by mouth to an unconscious person. Seek medical attention.

**Notes to Physician:** Treat symptomatically

### **V. FIRE-FIGHTING MEASURES**

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**Flash Point:** Not determined

**Flammable Limits in Air - Upper (%):** Not determined

**Flammable Limits in Air - Lower (%):** Not determined

**OSHA Flammability Classification:** Not determined

**Auto Ignition Temperature:** Not determined

**Extinguishing Media:** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Special Protective Equipment for Firefighters:** Wear suitable protective equipment. In the event of fire, wear self-contained breathing apparatus.

**Specific Hazards:** Burning produces irritant fumes.

**Hazardous Combustion Products:** Carbon monoxide, Carbon dioxide, Mixture of inorganic salts.

**Risk of Dust Explosion:** Negligible. Dust may form explosive mixture in air.

### **VI. ACCIDENTAL RELEASE MEASURES**

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**Personal Precautions:**

Avoid formation of dust and aerosols. Ensure adequate ventilation. Use personal protective equipment.

**Methods for Cleaning Up:**

Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

**Environmental Precautions:**

Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

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### **VII. HANDLING AND STORAGE**

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**Handling:**

Avoid contact with skin and eyes. Avoid formation of dust, aerosol, or mist. Do not breathe aerosols or dust from dried material. Provide appropriate exhaust ventilation at machinery and at places where dust, aerosol, or mist can be generated.

**Storage:**

DO NOT FREEZE. Keep at temperatures above 0°C. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from direct sunlight. Keep in properly labeled containers.

### **VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION**

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**EXPOSURE LIMITS**

There are no exposure limits identified for this product.

**ENGINEERING CONTROLS**

Ensure adequate ventilation to minimize exposures.

**PERSONAL PROTECTIVE EQUIPMENT**

**Respiratory Protection:** Approved respirator may be necessary if local exhaust ventilation is not adequate.

**Hand Protection:** Wear as appropriate. Impervious gloves. Neoprene gloves. Nitrile rubber gloves. Rubber gloves. PVC or other plastic material gloves.

**Eye Protection:** Wear eye/face protection. Safety glasses with side-shields. Goggles. Wear face shield if splashes are likely to occur.

**Skin and Body Protection:** Wear chemical impervious protective clothing if skin contact may occur.

**Other:** Handle in accordance with good industrial hygiene and safety practice. Emergency eyewash and safety shower should be located nearby.

### **IX. PHYSICAL AND CHEMICAL PROPERTIES**

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<b>Appearance:</b>	Light-yellow Liquid
<b>Odor:</b>	None
<b>pH:</b>	9.5 - 10.5
<b>Vapor Pressure:</b>	5.9 mBar
<b>Boiling Point/Range:</b>	136 °C
<b>Melting Point/Range:</b>	-15 to -4 °C
<b>Water Solubility:</b>	Highly Soluble
<b>Density:</b>	1.53 - 1.57 kg/cm <sup>3</sup> @ 20 °C
<b>Specific Gravity:</b>	Not determined
<b>Evaporation Rate:</b>	Not determined
<b>Viscosity:</b>	13 cp @ 25 °C
<b>Partition Coefficient (n-octanol/water):</b>	< 0 (no potential to bioconcentrate)

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### **X. STABILITY AND REACTIVITY**

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**Stability:** Stable. Thermally decomposes above 360°C.

**Hazardous Polymerization:** Hazardous polymerization does not occur.

**Mechanical Sensitivity (shock):**  
Not sensitive to mechanical impact.

**Conditions to Avoid:**  
Avoid contact with strong acids and oxidizing agents. Heating can release hazardous gases. Do not expose to temperatures above 45°C.

**Hazardous Decomposition Products:**  
Carbon dioxide, Carbon monoxide, Hydrogen, Mixture of inorganic salts, Potassium oxides.

**Static Discharge Effects:** Dust may form explosive mixture in air. Take precautionary measures against static discharges.

### **XI. TOXICOLOGICAL INFORMATION**

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#### **ACUTE TOXICITY**

**Oral LD50:** LD50/oral/mouse = 5500 mg/kg.

**Inhalation LC50:** Not determined.

**Dermal LD50:** Not determined.

**Eye Irritation:** Slight irritation.

**Skin Irritation:** Mild skin irritation.

**SUBCHRONIC TOXICITY**  
Not determined.

#### **CHRONIC TOXICITY**

**Carcinogenic Effects:** Does not contain any substances listed by IARC (International Agency for Research on Cancer), NTP (National Toxicology Program), OSHA (Occupational Safety and Health Administration), ACGIH (American Conference for Governmental Industrial Hygienists) or EU (European Union).

**Mutagenic Effects:** Not determined.

**Reproductive Toxicity:** Not determined.

**Sensitizing Effects:** Contains no known sensitizers.

**Synergistic Materials:** None reasonably foreseeable.

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### **XII. ECOLOGICAL INFORMATION**

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#### **Aquatic Toxicity:**

##### **MARINE**

Juvenile turbot (*Scophthalmus maximus*) LC50 (96 hr) = 1700 mg/l  
Marine algae (*Skeletonema costatum*) EbC50 (72 hr) = 3400 mg/l  
Marine copepod (*Acartia tonsa*) LC50 (48 hr) = 300 mg/l  
Brown shrimp (*Crangon crangon*) LC50 (96 hr) = 1300 mg/l

##### **FRESHWATER**

Rainbow trout (*Oncorhynchus mykiss*) LC50 (96 hr) = 3500 mg/l  
Freshwater algae (*Scenedesmus subspicatus*) EbC50 (72 hr) = 1000 mg/l  
Water flea (*Daphnia magna*) EC50 (48 hr) = 540 mg/l  
Other Information: In the majority of marine species, this material has not demonstrated toxicity and has received a rating of GOLD/SILVER/SILVER for drilling products and GOLD for Completion/Workover products under the PARCOM Harmonized Offshore and Chemical Notification Format (HOCNF).

##### **ENVIRONMENTAL FATE**

**Mobility:** Highly soluble in water. Water solubility = 1200 g/L.

**Bioaccumulation:** Log Pow = <0 (no potential to bioconcentrate). See also Section 9.

**Persistence / Degradability:** Readily biodegradable. (Method: OECD 301D and 301E).

### **XIII. DISPOSAL CONSIDERATIONS**

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#### **Disclaimer:**

Information in this section pertains to the product as shipped in its intended condition. Contamination or processing may change waste characteristics and requirements. Regulations may also apply to empty containers, liners or rinsate. State/provincial and local regulations may be different from federal regulations.

#### **Unused and Uncontaminated Product:**

Can be burned in suitable incineration plants or disposed of in a suitable landfill in accordance with the regulations issued by the appropriate federal, provincial, state and local authorities.

### **XIV. TRANSPORT INFORMATION**

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Not classified as dangerous in the meaning of transport regulations.

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**Hazard Classification**

**United States - OSHA (29 CFR 1910.1200): Not hazardous.**

**Mexico - NOM-018-STPS-2000: Refer to HMIS Rating in Section 16.**

**Canada - WHMIS Classification (CPR, SOR/88-66): Not controlled.**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

**International Inventories**

All components of this product are listed on or exempt from the following inventories:

YES - Australian Inventory of Chemical Substances (AICS)

YES - Canadian Domestic Substances List (DSL)

YES - Chinese Inventory

YES - European Inventory of Existing Commercial Chemical Substances (EINECS)

YES - Japanese Existing and New Chemical Substances (ENCS)

YES - Korean Existing Chemicals List (KECL)

YES - New Zealand Hazardous Substances and New Organisms Act (HSNO)

NO - Philippines Inventory of Chemicals and Chemical Substances (PICCS)

YES - United States Toxic Substances Control Act (TSCA) Inventory

**U.S. Federal Regulations**

**TSCA 12(b) Export Notification:** This product does not contain any components that are subject to TSCA 12(b) Export Notification.

**Clean Air Act Amendments of 1990 (CAA, Section 112, 40 CFR 82):** This product does not contain any components listed as a Hazardous Air Pollutant, Flammable Substance, Toxic Substance, or Class 1 or 2 Ozone Depletor.

**Clean Water Act (CWA, 40 CFR 116) Priority Pollutants:** This product does not contain any listed Priority Pollutants.

**Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, 40 CFR 302):** This product does not contain any listed Hazardous Substances.

**Superfund Amendments and Reauthorization Act, Title III (SARA):**

**SARA Section 302 (40 CFR 355) Extremely Hazardous Substances:** No components are listed as extremely hazardous chemicals under SARA Section 302.

**SARA Sections 311/312 (40 CFR 370) Hazard Category:** This product does not meet any of the MSDS Requirement definitions for a hazardous material under SARA Sections 311/312.

**SARA Section 313 (40 CFR 372) Toxics Release Inventory:** Does not contain any of the substances identified under Section 313 as toxic chemicals in excess of the de minimis concentrations necessary to be subject to this rule.

**Food and Drug Administration (FDA):**

Not permitted

**Pharmaceutical Information:** Not permitted

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### **U.S. State Regulations**

**California Proposition 65:** This product does not contain any components listed on California Proposition 65.

**US Coalition of North Eastern Governors (CONEG) Metals List:** This product meets the CONEG Source Reduction Council limits for the sum of the levels of lead, cadmium, mercury and hexavalent chromium of less than 100 parts per million by weight.

### **XVI. OTHER INFORMATION**

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#### **HMIS Rating**

HMIS Index: 0 - minimal, 1 - slight, 2 - moderate, 3 - serious, 4 - severe, \* - chronic

Health: 1

Flammability: 0

Physical Hazard: 0

HMIS Key: 4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard.

#### **DISCLAIMER:**

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, NOV FluidControl, makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the person receiving this MSDS will make own determination as to its suitability for their intended purpose prior to use. Since the product is within the exclusive control of the user, it is the user's obligation to determine the conditions of safe use of this product. Such conditions should comply with all Federal Regulations concerning the Product. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER NATURE ARE MADE HERUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.

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