



# ***Prairie Mud Service Ltd.***

*"Serving Western Canada with 24 Hour Drilling Mud Service"*

## **MSDS (Material Safety Data Sheet)**

### **MATERIAL SAFETY DATA SHEET**

#### **SECTION I: IDENTIFICATION OF PRODUCT**

COMPANY: **Prairie Mud Service** DATE: January 31, 2011  
**738 6<sup>th</sup> Street** PHONE: 306-634-3411  
**Estevan, SK S4A 1A4** FAX: 306-634-7310

PRODUCT NAME: **Citric Acid, Anhydrous**

PRODUCT USE: Oil well drilling fluid & cement additive  
CHEMICAL FAMILY: Organic acid CAS#: 77-92-9

#### **WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)**

WHMIS CLASSIFICATION: E  
WORKPLACE HAZARD: Corrosive solid

#### **TRANSPORTATION OF DANGEROUS GOODS (TDG)**

PROPER SHIPPING NAME: Not regulated under TDG  
TDG CLASSIFICATION: Not applicable  
UN NUMBER (PIN): Not applicable  
PACKING GROUP: Not applicable

#### **SECTION II: HAZARDOUS INGREDIENTS**

<u>INGREDIENT</u>	<u>% (w/w)</u>	<u>CAS NUMBER</u>	<u>LD<sub>50</sub> Oral-Rat</u>	<u>LC<sub>50</sub> Inhal-Rat</u>	<u>ACGIH-TLV</u>
Citric acid	100	77-92-9	6730 mg/kg	Not available	Not established

#### **SECTION III: HEALTH HAZARDS**

ROUTE OF ENTRY: EYE CONTACT SKIN INHALATION INGESTION  
EYE CONTACT: Dusts and solutions can cause severe irritation and corrosive injury (destruction of eye tissue), based on animal information. Depending on the concentration of the solution and the degree of exposure, permanent eye damage, including blindness may result.  
SKIN CONTACT: Dusts and solutions can cause severe irritation and corrosive injury based on animal information.  
INGESTION: Ingestion of large amounts may cause stomach pain and vomiting.



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INHALATION:	Dusts and mists from solutions may cause temporary irritation of the nose and throat. The severity of these effects would depend on the airborne concentration, concentration of the solution and the duration of exposure.
CARCINOGENICITY:	Not considered to be carcinogenic (NTP, IARC, or OSHA).
TERATOGENICITY:	No information available.
REPRODUCTIVE TOXICITY:	No information available.
MUTAGENICITY:	No information available.
SYNERGISTIC PRODUCTS:	No information available.

### **SECTION IV: FIRST AID MEASURES**

EYE CONTACT:	Immediately flush with gently flowing warm water for at least 15 minutes. Hold eyelids open to ensure thorough flushing. Obtain medical attention.
SKIN CONTACT:	Immediately flush with water while removing contaminated clothing. If irritation persists obtain medical attention.
INGESTION:	Do not induce vomiting. Rinse mouth thoroughly with water. Have victim drink 240-300 mL (8 to 10 oz) of water to dilute material in stomach. If milk is available, it may be administered after the water has been given. If vomiting occurs keep head below hips to prevent aspiration of vomitus; repeat administration of water. Obtain medical attention. Never give anything by mouth to an unconscious or convulsing victim.
INHALATION:	Move to fresh air. Apply oxygen or artificial respiration if required. If breathing difficulties or distress continues, contact a physician.

### **SECTION V: PHYSICAL DATA**

APPEARANCE AND ODOUR:	Solid white powder or granules; odourless
SPECIFIC GRAVITY:	1.665
BOILING POINT (°C):	Not available
MELTING POINT (°C):	153
SOLUBILITY IN WATER:	162 g/100 mL @ 25°C    pH : 2.2 (1% solution)
PERCENT VOLATILE BY VOLUME:	0
EVAPORATION RATE:	>1
VAPOUR PRESSURE (mmHg):	Not applicable
VAPOUR DENSITY (air = 1):	Not applicable
BULK DENSITY:	Not available



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### **SECTION VI: FIRE AND EXPLOSION HAZARD DATA**

FLASH POINT:	Not applicable
FLAMMABLE LIMITS:	Upper: 8 g/ft <sup>3</sup> Lower: 65 g/ft <sup>3</sup>
EXTINGUISHING MEDIA:	Use media suitable for packaging and surrounding fire.
SPECIAL FIRE FIGHTING PROCEDURES:	Self-contained breathing apparatus required for fire fighting personnel.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Auto-ignition temperature = 1010°C. Airborne dust may explode when ignited by an electrostatic spark, other high-voltage sparks or other ignition source.

### **SECTION VII: REACTIVITY DATA**

STABILITY:	STABLE [XX]                      UNSTABLE [ ]
INCOMPATIBILITY (CONDITIONS TO AVOID):	Strong oxidizing agents - mixtures may react violently if heated. Strong reducing agents – may react vigorously or violently. Strong bases- mixtures may generate heat and pressure. Metal nitrates- a mixture exploded during a vacuum evaporation procedure. Mildly corrosive to carbon steel, gray and nickel cast iron, copper, brass, aluminum and lead.
CONDITIONS OF REACTIVITY:	Not available
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon monoxide, carbon dioxide
HAZARDOUS POLYMERIZATION:	WILL NOT OCCUR [XX]      MAY OCCUR [ ]

### **SECTION VIII: PREVENTATIVE MEASURES**

#### **SPECIAL PROTECTION INFORMATION**

RESPIRATORY PROTECTION:	NIOSH approved dust mask recommended
VENTILATION:	Use local ventilation, process enclosure or other engineering controls to keep airborne dust to a minimum
PROTECTIVE GLOVES:	Suggest plastic or rubber.
EYE PROTECTION:	Suggest chemical goggles and/or full-face shield. Do not wear contact lenses when handling this material.
OTHER PROTECTIVE EQUIPMENT (Specify):	Full body covering clothing recommended. Ensure eye wash and emergency shower are available



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### **PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING**

Wear suitable protective equipment to prevent skin and eye contact. Avoid inhalation and ingestion. Wash thoroughly after use. Store in a cool, dry area away from incompatibles. Keep containers closed when not in use. Aqueous solutions of citric acid can, if in contact with reactive metal (iron, zinc, aluminum) form hydrogen which may form explosive mixtures. Avoid creating dust clouds when handling.

### **STEPS TO BE TAKEN IN CASE THE MATERIAL IS SPILLED OR RELEASED**

Use appropriate safety equipment. Sweep up to collect. Collect uncontaminated material for repackaging. Collect contaminated material in an approved container for disposal. Avoid creating dust clouds.

### **WASTE DISPOSAL METHOD**

Dispose in accordance with federal, provincial and local regulations. Material is biodegradable in waste treatment facility. It is the responsibility of the end-user to determine if material meets the criteria of hazardous waste at the time of disposal. Empty packages will contain residual material and must be disposed of in accordance with local regulations.

### **SECTION IX: PREPARATION**

THE INFORMATION CONTAINED HEREIN IS GIVEN IN GOOD FAITH,  
BUT NO WARRANTY, EXPRESSED OR IMPLIED, IS MADE.

DATE ISSUED:            January 31, 2011            BY:            Product safety committee