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MATERIAL SAFETY DATA SHEET FOR PURE ELEMENTAL SULFUR FERTILIZER
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A. GENERAL INFORMATION

April 2007

Trade Name (Common Name or Synonym) – **Sulfur Fertilizer (KEG RIVER BRAND)**

- ◆ Formula: **Pure Sulfur:** 99.95% Sulfur (CAS No. 7704-34-9) Molecular Weight: N/A

B. TRANSPORTATION REQUIREMENTS (Non Regulated as per following exemptions/provisions, and observations):

- ◆ **US and Canadian Shipments:** non regulated as per T.D.G.A.R. exemption part 2.3 (a) (xxxviii) and 49 CFR (Canadian Shipments and Packaging 171.12 (a) and CFR 49 (Special Provisions 172.102 pt 30.)
- ◆ **International Shipments:**
 - **AIR (IATA):** Exempted under Special Provision A 105 SEA (IMDG): Exempted as per Sulfur Observations Part 1 & 2
 - **Appearance:** Specifically formed product in the shape of pastilles.
 - **TRANSPORTATION EMERGENCIES:**
 - call collect CANUTEX 613-996-6666 (24 hours).
 - WHIMIS: non-controlled product in accordance with sub-paragraph 13(a)(i-iv) or paragraph 14 (a) of the Hazardous Products Act.

C. FIRST AID MEASURES

- ◆ Skin: Wash with mild soap and water.
- ◆ Eyes: Irrigate thoroughly with copious quantities of plain water. Inadequate irrigation may increase the irritation. Do not use Boric Acid.

D. HAZARDS INFORMATION

- ◆ Inhalation: Sulfur dust may irritate the mucous membranes of the respiratory passages.
- ◆ Ingestion: Solid Sulfur is virtually non-toxic. It can be taken internally in fairly large doses without injury.
- ◆ Skin: In some individuals, Sulfur dust has an irritant action, which may be aggravated by perspiration or moisture.
- ◆ Eyes: Sulfur dust is capable of irritating the inner surfaces of the eyelids.
- ◆ Permissible Concentration: None established. Unusual Chronic Toxicity: N/A

Flash Point °C	Auto Ignition °C	Flammable Limits in air (% by VOL)
Pure Liquid S 188 °C (370°F)	Dust clouds 190 °C (374 °F)	Minimum explosion concentration is approximately 35 gm/m ³ (0.035 oz/ft ³). Maximum explosive concentration lies between 1000 and 2000 gm/m ³ probably about 1400 gm/m ³ (1.4 oz/ft ³).
Impure Liquid S 168 °C (335 °F)	Un-dispersed dust 220 °C (428 °F)	

- ◆ **Unusual Fire and Explosion Hazards:** Dust suspended in air is readily ignited by flame, static electricity or friction spark. Every reasonable precaution must be taken to minimize dust formation. Dust tight casings should be equipped with explosion relief vents. Sparkless electric equipment is recommended. Handling equipment must be grounded or bonded to avoid static electricity. Keep away from sources of flame or sparks. Detailed recommendations in Manufacturing Chemists Association SD-74 and National Safety Council 612 Bulletins covering "Sulfur" should be followed when handling Sulfur products.
- ◆ **Explosive Limits:** LEL 35 gm/m³
UEL 1400 gm/m³

E. PRECAUTIONS/PROCEDURES

- ◆ **Fire Extinguishing Agents Recommended:**
 - A fine water spray or fog is recommended.
 - CO₂ or dry chemical.
 - Small fires may be smothered with sand or solid Sulfur.
- ◆ **Fire Extinguishing Agents to Avoid:** Hoses and extinguishers with pressure streams should be avoided where solid Sulfur is dusty or where it may create a further hazard by raising more dust clouds.
- ◆ **Special Fire Fighting Precautions:** Because burning Sulfur evolves Sulfur dioxide, breathing apparatus or gas masks approved for use in acid-gas atmosphere should be used. Fumes from unprotected Sulfur fires should be avoided, if possible, by approaching from the upwind side.
- ◆ **Ventilation:** Local exhaust if dusty conditions prevail.
- ◆ **Normal Handling:** Avoid breathing dust and keep clothing as free from dust as possible.
- ◆ **Storage:** Solid becomes corrosive to metals when stored wet. Sulfur/bentonite fertilizer will physically break down when exposed to moisture or water.
- ◆ **Spill or Leak:** Shovel into disposal containers or cover with tarp. For landfill disposal, mix with limestone 3 times the weight of Sulfur.
- ◆ **Special Precautions/Procedures/Label Instructions:** Eye Wash equipment near the work area.

F. PERSONAL PROTECTIVE EQUIPMENT

- ◆ **Respiratory Protection:** Dust-type respirators shall be provided for dusty conditions. Breathing apparatus must be available for emergency use in case of fire.
- ◆ **Eyes and Face:** Dust-tight goggles with plastic or rubber frames may be helpful in dusty conditions.

- ◆ **Hands, Arms and Body:** Workers whose skin may be sensitive to Sulfur dust should button collars, roll sleeves down, and gather trousers at the ankle. Gloves may be helpful.
- ◆ **Other Clothing and Equipment:** Hardhat and safety shoes. Fire-retardant fabric is recommended. Sulfur impregnated clothing should not be worn.

G. PHYSICAL DATA

Material is (at normal conditions)		Appearance and Odor	
__Liquid <u>X</u> Solid __Gas		Bright yellow in color. May have slight Sulfur odor. Prill or pastille in shape.	
Boiling Point	Specific Gravity	Vapor Density	Melting Point
444 °C (832 °F)	Solid 2.07 gm/ml	> 1	119 °C (246 °F)
Solubility in Water (% by weight)	pH	Vapor Pressure (mm Hg at 20 °C)	
Insoluble	Neutral when dry	Solid: Less than 0.0001 mm. Hg at 20 °C (68 °F).	
Evaporation Rate (Butyl Acetate =)(Ether =)		% Volatiles by Volume	
N/A		N/A	

H. REACTIVITY DATA

- ◆ **Stability:** __ Unstable X Stable
- ◆ **Conditions to Avoid:** The main hazards are fire and dust explosions.
- ◆ **Hazardous Polymerization conditions to Avoid:**
 __ May Occur X Will not occur.

I. HAZARDOUS INGREDIENTS (Mixtures Only)

- ◆ **Material or Components:** Mixtures with chlorates, nitrates or other oxidizing agents may be explosive. Sulfur will react with alkalis or alkaline earths.

NOTICE:

The data and information presented herein are based upon tests, research and reports, which are considered by us to be reliable, and believed to be accurate. The data and information are presented without warranty, guarantee or liability on our part, and are presented to the customer for his own consideration, investigation and verification.