

**Issuing Date:** 18 June 2015 **Revision Date:** 22 February 2021

**Revision Number:** 5

**1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING**

**GHS product identifier**

**Product Name** Keg90S

**Other means of identification**

**Synonyms** Sulfur-Bentonite, NutraSul 90, Degradable Sulfur, Granular Sulfur

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Plant nutrient fertilizer, soil amendment  
**Uses advised against** No information available

**Manufacturer's details**

Keg River Chemical Corp.  
10350 – 21 Street NW  
Edmonton, AB T6P 1W4 Canada  
Tel: 780-417-2463  
Fax: 780-416-0843

**Emergency telephone number**

**Emergency Telephone Number** Canada or USA: 780-417-2463

**2. HAZARDS IDENTIFICATION**

**Classification**

Acute Dermal Toxicity	Category 4
Combustible Dust	Category 1
Eye Irritation	Category 2A
Skin Irritation	Category 2

**Signal Word****Warning****Precautionary Statements**

- May form combustible dust concentrations in air if crushed
- May be harmful if swallowed
- May cause skin, eye and respiratory irritation

**Appearance:** Light Green**Physical State:** Solid**Odor:** No Information Available**3. COMPOSITION / INFORMATION ON INGREDIENTS****Synonyms**

Sulfur-Bentonite, Keg-90, N-90, Degradable Sulfur

Chemical Name	CAS-No	%
Sulfur	7704-34-9	90
Bentonite Clay	1302-78-9	10
Silica, Quartz*	14808-60-7	< 0.3

\* Found in Bentonite Clay – see section 11 for clarification.

**4. FIRST AID MEASURES****Description of necessary first-aid instructions**

<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for 5 minutes. Get medical attention if symptoms occur.
<b>Skin Contact</b>	Wash off immediately with soap and plenty of water for 5 minutes. Remove contaminated clothing and shoes.
<b>Inhalation</b>	Move to fresh air. Get medical attention if symptoms occur.
<b>Ingestion</b>	Do NOT induce vomiting. Clean mouth with water and afterwards drink plenty of water. Never give anything by mouth to an unconscious person. Consult a physician.

**Most important symptoms/effects, acute and delayed**

<b>In Eyes</b>	May cause moderate to severe irritation (sore, red, tearing eyes).
<b>Inhaled</b>	Repeated or long-term inhalation may lead to respiratory problems (see note in Section 11).
<b>On Skin</b>	May cause dermal irritation.

**Indication of immediate medical attention and special treatment needed, if necessary****Notes to Physician** Treat symptomatically.

## 5. FIRE – FIGHTING MEASURES

### **Suitable Extinguishing Media**

Water spray or fog is preferred. If water not available use dry chemical, Carbon Dioxide or regular foam. Small fires may be smothered with sand.

### **Unsuitable Extinguishing Media**

Do not scatter spilled material with high pressure water streams.

### **Specific Hazards Arising from the Chemical**

Avoid dust formation. Dust suspended in air can be ignited by flames, static electricity or friction spark. Every reasonable step must be taken to minimize dust formation (gentle, infrequent handling, avoid seasonal carryover of inventory). Combustion products include Sulfur dioxide and Hydrogen Sulfide.

### **Protective Equipment and Precautions for Firefighters**

Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight from a protected location or safe distance (avoid breathing fumes).

## 6. ACCIDENTAL RELEASE MEASURES

### **Personal precautions, protective equipment and emergency procedures**

#### **Personal Precautions**

Ensure adequate ventilation. Avoid dust formation. Do not get in eyes. Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges. Wash thoroughly after handling.

#### **Environmental Precautions**

Do not allow material to contaminate ground water systems.

#### **Methods and materials for containment and cleaning up**

**Methods for Containment** Prevent further leakage or spillage if safe to do so. Avoid airborne dust through dry sweeping or use of compressed air.

**Methods for Cleaning Up** Pick up and transfer to properly labeled containers.

## 7. HANDLING AND STORAGE

### **Precautions for safe handling**

**Handling** Ensure adequate ventilation. Do not breath in dust or get in the eyes. Avoid dust formation in confined areas. Keep away from open flames, hot surfaces and sources of ignition. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Dust tight casings should be equipped with explosion relief vents. Sparkless electrical equipment is recommended.

### **Conditions for safe storage, including any incompatibilities**

**Storage** Keep in a dry, cool and well-ventilated area, away from heat and ignition sources.

**Incompatible Products** Incompatible with strong oxidizing agents.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

#### Exposure Guidelines

Chemical Name	ACGIH TLV
Sulfur 7704-34-9	TWA: 10 mg/m <sup>3</sup>
Bentonite 1302-78-9	TWA: 1 mg/m <sup>3</sup> respirable fraction
Silica, Quartz 14808-60-7	TWA: 0.025 mg/m <sup>3</sup>

### Appropriate engineering controls

<b>Engineering Measures</b>	Showers Eyewash stations Ventilation systems
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### Individual protection measures, such as personal protective equipment

<b>Eye/Face Protection</b>	Safety glasses with side-shields, or goggles.
<b>Skin and Body Protection</b>	Long sleeved clothing, impervious gloves.
<b>Respiratory Protection</b>	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations. In emergency, wear self-contained breathing apparatus (SCBA).
<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety practice. Provide regular cleaning of equipment, work area and clothing.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical State:</b>	Solid	<b>Appearance</b>	Light Green
<b>Odor</b>	No information available	<b>Odor Threshold</b>	No information available

Property	Values
<b>pH</b>	No data available
<b>Melting Point/Freezing Point</b>	119 °C/Not applicable (freezing point)
<b>Boiling Point/Boiling Range</b>	444 °C
<b>Flash Point</b>	188 °C
<b>Evaporation rate Flammability (solid, gas)</b>	No data available
<b>Flammability Limits in Air upper flammability limit</b>	1400 gm/m <sup>3</sup>
<b>Flammability Limits in Air lower flammability limit</b>	35 gm/m <sup>3</sup>
<b>Vapor Pressure</b>	No data available
<b>Vapor Density</b>	No data available
<b>Specific Gravity</b>	2.07

<b>Water Solubility</b>	Insoluble
<b>Solubility in other solvents</b>	No data available
<b>Partition coefficient: n-octanol/water</b>	No data available
<b>Auto-ignition Temperature</b>	232 °C
<b>Decomposition Temperature</b>	No data available
<b>Viscosity</b>	Solid, not applicable
<b>Flammable Properties</b>	Flammable solid
<b>Bulk Density</b>	75 lb/ft <sup>3</sup>

**Other information**

VOC Content (%) None

**10. STABILITY AND REACTIVITY****Reactivity**

No dangerous reaction known under conditions of normal use.

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**None under normal processing.  
Fine dust dispersed in air may ignite.**Hazardous Polymerization**

Hazardous polymerization does not occur.

**Conditions to avoid**

Dust formation. Exposure to air or moisture. Static discharge, open flame or other ignition sources.

**Incompatible materials**

Incompatible with strong oxidizing agents.

**Hazardous decomposition products**

Sulfur dioxide. Hydrogen Sulfide.

**11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure**

**Inhalation** May cause irritation of respiratory tract.  
**Eye Contact** May cause irritation.  
**Skin Contact** May cause irritation.  
**Ingestion** May cause irritation to the gastrointestinal tract.

**Acute Toxicity**

<b>Chemical Name</b>	<b>LC50</b>	<b>LD50 (oral)</b>
Sulfur	> 0.047 mg/L (rat) (4-hour exposure)	> 5000 mg/kg (rat)
Bentonite Clay		5000 mg/kg (rat)
Silica, Quartz		500 mg/kg (rat)

**Delayed and immediate effects and also chronic effects from short and long term exposure****STOT - single exposure**

Inhalation: May cause nose, throat and lung irritation.

Eye exposure: May cause severe eye irritation (sore, red, tearing eyes).

Skin exposure: May increase UV sensitivity (sunlight).

Ingestion: May be harmful if large amounts are swallowed (nausea, vomiting, diarrhea).

**STOT - repeated exposure**

Inhalation: May cause lung irritation or injury (see note below).

**Sensitization** No information available.

**Mutagenic Effects** No information available.

**Reproductive Toxicity** No information available.

**Carcinogenicity** Inhalation: Crystalline Silica is a confirmed human carcinogen (Lung cancer). But the OSHA publication (3911-07 2017) Small Entity Compliance Guide for the Respirable Crystalline Silica Standard for General Industry and Maritime, states "exposures from the processing of sorptive clays are excluded from this standard. Sorptive clays such as bentonite are specific types of clay found in a few geologic deposits in the country that are used in a range of consumer products and industrial applications, such as pet litter and sealants for landfills. The occluded quartz found in sorptive clays is considerably less toxic than unoccluded quartz (e.g. from construction activities such drywalling or cutting, grinding, sandblasting, drilling, crushing, etc. of rock, concrete, brick or ceramics), and there is insufficient evidence for its inclusion in the standard". In addition to being a less toxic form, the Crystalline Silica present in Keg90S is less than 3% of the bentonite clay ingredient, which equates to <0.3% of the finished product. Furthermore, the clay and silica are encapsulated in the sulfur pastilles and generally not airborne and subject to inhalation.

**Reproductive Toxicity** No information available.

**Aspiration Hazard** No information available.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

The environmental impact of this product has not been fully investigated.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Sulfur 7704-34-9	No information available	LC50: 866 mg/L Brachydanio rerio 96 h static LC50: <14 mg/L Lepomis macrochirus 96 h static LC50: >180 mg/L Oncorhynchus mykiss 96 h static	No information available	> 5000 mg/L (Daphnia magna (water flea); 48-hour; fresh water; static)
Bentonite 1302-78-9	No information available	LC50 96 h: 8.0-19.0 g/L (Salmo gairdneri) LC50 96 h: = 19000 mg/L static (Oncorhynchus mykiss)	No information available	No information available

### **Persistence and Degradability**

No information available.

### **Bioaccumulation**

No information available.

### **Movement from soil to groundwater**

Moves slowly through soil based on physical and chemical properties.

### **Other Adverse Effects**

No information available.

## 13. DISPOSAL CONSIDERATIONS

### **Waste Disposal Methods**

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

### **Contaminated Packaging**

Do not re-use empty containers.

## 14. TRANSPORTATION INFORMATION

Not regulated under Canadian TDG or US DOT regulations.

## 15. REGULATORY INFORMATION

### International Inventories

**TSCA** All components of this product are either listed or are exempt on the TSCA inventory.

**Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL) Canada:** Listed

### Legend

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**U.S. Federal Regulations**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

**SARA 311/312 Hazard Categories**

**Acute Health Hazard** Yes  
**Chronic Health Hazard** No  
**Fire Hazard** Yes  
**Sudden Release of Pressure Hazard** No  
**Reactive Hazard** No

**Clean Water Act**

This product does not contain any substances regulated as pollutants under the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

**CERCLA**

Keg90S does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). Please check to see if specific reporting requirements exist at the local, regional, or state level pertaining to releases of this material.

**U.S. State Regulations**

**California Proposition 65:** This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

"X" designates that the ingredients are listed on the state right to know list.

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Illinois	Rhode Island
Sulfur	X	X	X		X

**16. OTHER INFORMATION**

**NFPA Health Hazard 1 Flammability 1 Instability 0**

**Issuing Date** 18-June-2015  
**Revision Date** 22-February-2021  
**Revision Note** 5<sup>th</sup> revision

**General Disclaimer**

The information presented in this Safety Data Sheet is correct to the best of our knowledge and information at the time of preparation. Please use the information only as a guideline for Keg90S; this sheet is not to be considered a warranty or quality specification. The information applies to Keg90S only and is not necessarily valid when this material is used in combination with any other materials or in any process, unless specified here. The information contained here is not guaranteed to be completely accurate or complete. The user assumes all risks with using the product.

**End of Safety Data Sheet**