NFPA HAZARD RATING				U.S. TRANSPORT SUMMARY
0	Least			Exempt from requirements (49 CFR 172.102, Special Provision 30) See Section 14 for additional information.
1	Slight	2	Health	
2	Moderate	1	Flammability	
3	High	0	Reactivity	
4	Severe			

SECTION 1: IDENTIFICATION

Product Name:	Sulfur 90%
EPA Registration #:	Exempt
Product ID/Unity #:	10000655, 10000656, 10109351
Common Name:	Sulfur fertilizer
Chemical Description:	Sulfur blended with bentonite clay
Recommended Uses:	Fertilizer product - See product label for directions for use
Restrictions for Use:	See product label for any potential restrictions.

Manufactured For: WINFIELD SOLUTIONS, LLC P. O. Box 64589 St. Paul, MN 55164-0589	MEDICAL EMERGENCY TELEPHONE NUMBER: 1-877-424-7452 (24hrs) Non-Emergency Business Inquiries: 1-855-494-6343 Mon – Fri 8am – 5pm (Central Standard Time)

FOR EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT, CALL:
CHEMTREC 1-800-424-9300 (24 hours)

SECTION 2: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: A yellowish to pale green tablet shaped solid (pastille). Dusts, if generated, may irritate the nose and throat. Concentrated dusts may produce a dust explosion if confined and a source of ignition is present. Confined space and head space in bulk storage bins may contain lethal levels of hydrogen sulfide gas.

POTENTIAL HEALTH EFFECTS:

Eyes: Exposure to dust may cause mechanical irritation of the eyes.

Skin: Exposure to dust may cause skin irritation. Symptoms include reddening, itching and inflammation.

Inhalation: Exposure to dust may cause irritation of the respiratory tract's mucous membranes. May cause coughing, sore throat, and shortness of breath. Confined space and head space in bulk storage bins may contain lethal levels of hydrogen sulfide gas.

Ingestion: Large doses can cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Preexisting Conditions: Exposure to dust may aggravate existing respiratory and skin conditions.

Chronic Health Effects: This product contains trace amounts of crystalline silica, a fraction of which is in the respirable form and is known to cause lung cancer through repeated inhalation. The small quantities of crystalline silica (quartz) found in this material are, under normal conditions, naturally coated with an un-removable layer of amorphous silica and/or clay.

Carcinogenicity	NTP: Not listed	IARC: Not listed	OSHA: Not listed

OSHA HCS 2012 CLASSIFICATION: Flammable Solid – Category 1; Specific Target Organ Toxicity – Single Exposure – Category 3; Specific Target Organ Toxicity – Repeated Exposure – Category 2

SIGNAL WORD: DANGER

HAZARD STATEMENTS:
Flammable solid.
May cause respiratory irritation.
May cause damage to lungs through prolonged or repeated inhalation.

Percent of product with unknown toxicity: 0%

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PRECAUTIONARY STATEMENTS:

Prevention:	Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking. Ground and/or bond container and receiving equipment. Use explosion-proof electrical, ventilating, and lighting equipment. Wear protective gloves, eye protection and face protection. Do not breathe dust. Use only outdoors in a well-ventilated area.
Response:	If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison control center (1-877-424-7452) or doctor for treatment advice if you feel unwell. In case of fire: Use foam, carbon dioxide, sand or earth, water spray or fog for extinction. Get medical attention if you feel unwell.
Storage:	Store in a secured and well-ventilated place. Keep container tightly closed.
Disposal	Dispose of contents/container in accordance with Federal, state and local regulations.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	% (wt)	CAS Reg. #
Sulfur	90.0%	7704-34-9
Bentonite clay (contains)	10.0%	1302-78-9
Crystalline silica (trace quantities)	trace	14464-46-1

*Ingredients not specifically listed are non-hazardous and are considered to be confidential business information under 29 CFR 1910.1200(i).

See Section 8 for exposure limits.

SECTION 4: FIRST AID MEASURES

Inhalation:	Remove person from contaminated area to fresh air and assist breathing as needed. Seek medical attention if irritation persists.
Ingestion:	Seek medical attention or call a poison control center immediately. Do not induce vomiting unless instructed to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
Eyes:	Flush eyes with clean water for at least 15 minutes. Lift eyelids to facilitate irrigation. If present, remove contact lenses after 5 minutes and continue rinsing. Seek medical attention.
Skin:	Remove contaminated clothing and wash before re-using. Flush skin with water and then wash with soap and water. Seek medical attention if skin irritation persists.

SECTION 5: FIRE FIGHTING MEASURES

Suitable Extinguishing Media: For small fires, use dry chemical. For large fires, use foam, carbon dioxide, sand or earth, water spray or fog. Use of high pressure hose streams must be avoided because of the risk of splattering or causing a steam explosion.

Special Fire Fighting Procedures: Wear NIOSH/MSHA approved self-contained breathing apparatus and full bunker gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later. Avoid breathing vapors; keep upwind. Generally low hazard, however, molten liquid can burn if heated to temperatures in excess of flash point (370°F).

Hazardous Combustion Products: Do not mix water with hot sulfur as molten sulfur can release hydrogen sulfide. Vapors given off during melting of sulfur may contain hydrogen sulfide and carbon disulfide.

Unusual Fire and Explosion Hazards: Burning sulfur is difficult to see in daylight; typically the flame appears as small light blue flame that emits suffocating colorless sulfur dioxide gas. Ensure all fires are extinguished. Concentrated dusts may produce a dust explosion if confined and a source of ignition is present. Ground dust on surfaces may catch fire when exposed to friction and or sparks or other ignition source.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Refer to Section 8 for personal protective equipment to be worn during containment and clean-up of a spill involving this product.

Environmental Precautions: Keep spilled product from entering sewers, waterways or low-lying areas.

Methods for Containment: Contain any spilled product with earth or sand. Uncontaminated product may be reused, however do not place back in original container.

Methods for Clean-up: Keep all ignition sources away from spill to avoid potential for dust explosion. Sweep, shovel or scape up spilled product.

Other Information: None known.

SECTION 7: HANDLING AND STORAGE

Handling: Ensure adequate ventilation and avoid formation of dusts. Immediately clean up spills that occur during handling or storage. Keep containers closed when not in use.
Storage: Store in cool dry areas away from children, feed and food products in a secured location. Protect packaging from physical damage. Protect from exposure to fire or ignition sources. Material is corrosive to ferrous and mild steel materials.
Minimum Storage Temperature: Not applicable
Other Precautions: Consult state and local laws and regulations pertaining to fertilizer storage.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Component:	OSHA PEL	ACGIH TLV	NIOSH REL
Particulates not otherwise classified	15 mg/m3 (total dust) 5 mg/m3 (respirable)		
Crystalline silica (CAS# 14464-46-1)		0.1 mg/m3	

Respiratory Protection: If dust concentration exceeds permissible levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for general particulates. In a fire situation, wear a self-contained breathing apparatus as melting sulfur can produce toxic fumes.

Engineering Controls: **Local Exhaust:** Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs or other specified exposure limits. Local exhaust ventilation is preferred.

Protective Gloves: Wear chemical resistant gloves to prevent exposure to skin.
Eye Protection: Wear chemical goggles or full face shield and safety glasses. Contact lenses are not protective eye devices.
Other Protective Clothing or Equipment: Wear long-sleeved shirt, long pants and shoes plus socks to prevent skin contact.

Work/Hygienic Practices: Never eat, drink, nor use tobacco in work areas. Practice good hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid	**Specific Gravity (H_2O=1):**	2.07 – 2.1 gm/ml
Vapor Pressure (mm Hg):	<0.0001 mm Hg @ 68°F	**Density (lbs/gallon):**	Not applicable
Vapor Density (Air=1):	Not available	**Melting Point:**	246°F
Solubility in Water (wt %):	Insoluble	**Boiling Point/Range:**	832°F
Viscosity:	Not applicable	**pH:**	Not determined
Appearance and odor:	Yellowish to pale green prill (pellet) with no odor	**Flash Point:**	370°F

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Water added to heated sulfur produces toxic gases of hydrogen sulfide and carbon disulfide. Product forms explosive mixtures with oxidizing agents.
Chemical Stability: Product is stable at ambient temperature and pressure, under normal storage and handling conditions.
Possibility of Hazardous Reactions: Will not occur.
Conditions to Avoid: Heat greater than 212°F, sparks, flame, buildup of static electricity
Incompatible Materials: Acids, alkalies, halogens, oxygen, and strong oxidizing agents.
Hazardous Decomposition Products: Sulfur oxides, hydrogen sulfide

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Eye Effects:	May cause mechanical irritation through exposure to dust.
Skin Effects:	May cause reddening, itching and inflammation of exposed skin. Estimated LD50 > 2,000 mg/kg.
Acute Inhalation Effects:	Exposure to dust may irritate mucous membranes of respiratory tract.
Acute Oral Effects:	Estimated LD50 > 2,000 mg/kg
Specific Target Organ Toxicity:	lungs

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CHRONIC TOXICITY

Chronic Effects:	Repeated inhalation may lead to lung damage due to trace amounts of crystalline silica.
Carcinogenicity:	This product contains trace amounts of crystalline silica, a fraction of which is in the respirable form and is known to cause lung cancer through repeated inhalation. The small quantities of crystalline silica (quartz) found in this material are, under normal conditions, naturally coated with an un-removable layer of amorphous silica and/or clay.
Mutagenicity:	Not anticipated to be mutagenic.
Teratogenicity:	Not anticipated to be teratogenic.
Reproductive Toxicity:	Not anticipated to have effects on reproductive systems.

POTENTIAL HEALTH EFFECTS:

Eyes: Exposure to dust may cause mechanical irritation of the eyes.

Skin: Exposure to dust may cause skin irritation. Symptoms include reddening, itching and inflammation.

Inhalation: Exposure to dust may cause irritation of the respiratory tract's mucous membranes. May cause coughing, sore throat, and shortness of breath. Confined space and head space in bulk storage bins may contain lethal levels of hydrogen sulfide gas.

Ingestion: Large doses can cause gastrointestinal irritation, nausea, vomiting and diarrhea.

SECTION 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL SUMMARY: This product is not toxic to fish and aquatic organisms.

ECOTOXICITY DATA:

Fish Acute and Prolonged Toxicity:	Data on a 99.5% Sulfur product: 96 hr LC50 for bluegill sunfish and rainbow trout is >180 ppm
Aquatic Invertebrate Acute Toxicity:	Data on a similar 90% Sulfur product: 48 hr LC50 for daphnia >5,000 ppm and the 96 hr LC50 for mysid shrimp is 736 ppm
Aquatic Plant Toxicity:	Not determined
Bird Acute and Prolonged Toxicity:	Data on a 95% Sulfur product: 8-day dietary LC50 for bobwhite quail is >5,620 ppm
Honeybee Toxicity:	Low toxicity

ENVIRONMENTAL EFFECTS:

Soil Absorption/Mobility:	Not determined
Persistence and degradability:	Not determined
Bioaccumulative Potential:	Not determined
Other adverse effects:	Not determined

SECTION 13: DISPOSAL CONSIDERATIONS

Waste: Dispose of in accordance with applicable Federal, state and local laws and regulations.

Container: Dispose of in accordance with applicable Federal, state and local laws and regulations.

RCRA Characteristics: It is the responsibility of the individual disposing of this product to determine the RCRA classification and hazard status of the waste.

SECTION 14: TRANSPORT INFORMATION

DOT: (Ground)	Solid sulfur is not subject to the requirements of Title 49 CFR Hazardous Materials Shipping Guidelines in a non-bulk package (less than 400 kg or 882 lbs per package) or if it is formed to a specific shape (i.e. prills, granules, pellets, pastilles or flakes). (49 CFR 172.102, Special Provision 30)
IMDG: (Sea)	Solid sulfur is not subject to the requirements of the IMDG Code in a non-bulk package (less than 400 kg or 882 lbs per package) or if it is formed to a specific shape (i.e. prills, granules, pellets, pastilles or flakes).
IATA: (Air)	Solid sulfur is not subject to the requirements of the IATA regulations if it is formed to a specific shape (i.e. prills, granules, pellets, pastilles or flakes). (Special provision A105)
TDG: (Canada)	Not determined

SECTION 15: REGULATORY INFORMATION

TSCA Inventory: All components are listed on the TSCA inventory.

SARA Title III Information:

Section 302 - Extremely hazardous substances: None listed

Section 311/312 – Hazard Categories: Delayed (Chronic), Fire

Section 313 – The following chemicals are subject to the reporting requirements of Section 313 of Title III, Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372:

None listed

CERCLA - This product contains the following chemicals which have a reportable quantity (RQ) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA):

None listed

California Proposition 65: This product does not contain chemicals known to the state of California to cause cancer.

U.S. State Worker and Community Right-To-Know (RTK) Information (CT, IL, MA, MN, NH, NJ, PA, RI):

Chemical Name	CAS #	State(s)
Sulfur	7704-34-9	CT, MA, NJ, PA

Canadian Domestic Substances List: All components are listed

WHMIS Classification: This product is not registered for use in Canada. WHMIS classification is not determined.

SECTION 16: OTHER

Disclaimer: The information presented herein is based on available data from reliable sources and is correct to the best of WinField Solutions' knowledge. WinField Solutions, LLC makes no warranty, express nor implied, regarding the accuracy of the data or the results obtained from the use of this product. Nothing herein may be construed as recommending any practice or any product in violation of any law or regulations. The user is solely responsible for determining the suitability of any material or product for a specific purpose and for adopting any appropriate safety precautions. We disclaim all liability for injury or damage stemming from any improper use of the material or product described herein.

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Sections Revised: All