Safety Data Sheet (SDS)

SECTION 1: IDENTIFICATION

Trade Name & Synonyms	**Agricultural Sulfur, Yellow Jacket Wettable Sulfur, Yellow Jacket Dusting Sulfur**
Chemical Name	Sulfur
CAS Number	7704-34-9
Family Name	Element – Sulfur
Chemical Formula	S_8
Recommended Use	Spraying and dusting designated crops for the control of fungus, mold, mites and etc.. ***Carefully read the entire product label prior to use*.**
Restrictions on Use	Keep away from heat sources, sparks, or open flames
Manufacturer/Supplier	***Sales and Technical Services*** **International Sulphur, Inc.** P. O. Box 611 Mt. Pleasant, Texas 75456 Tel: (903) 577-5500 Fax: (903) 577-5540 isulphur@internationalsulphur.com ***Shipping and Receiving*** **International Sulphur, Inc.** 1386 North Frontage Road Mt. Pleasant, Texas 75455 Tel: (903) 577-5500 Fax: (903) 577-5540 GPS Coordinates: 33° 9' 34" N 95° 03' 29" W
Emergency Assistance	CHEMTREC Tel: (800) 424-9300 within the USA Tel: 001-703-527-3887 outside the USA

SECTION 2: HAZARDS IDENTIFICATION

GHS Classifications

Skin irritant, Category 1
Eye irritant, Category 1
Flammability, Category 1

KEY
4 = Severe
3 = Serious
2 = Moderate
1 = Slight
0 = Minimal

GHS Label Elements

WARNING

Irritant (Eye and Skin) | Flammable Solid

SECTION 2: HAZARDS IDENTIFICATION (CONT)

Hazard Statement	H228: Flammable solid H290: May be corrosive to metals. H303: May be harmful if swallowed. H316: May cause mild skin irritation. H320: May cause eye irritation. H335: May cause respiratory irritation.
Prevention Statement	P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking. P220: Keep away from oxidizing agents. P424: Use non-sparking tools when available. P243: Take precautionary measures against static discharge. P261: Avoid breathing dust/fume/gas/mist/vapors/spray. P264: Wash hands thoroughly after handling and before eating. P284: In case of inadequate ventilation, wear respiratory protection.
Response Statement	P362: Take off contaminated clothing. P363: Wash contaminated clothing before reuse. P370+P378: In case of a fire, use water fog, spray, or regular foam to extinguish. Do not use a direct water stream. P381: Eliminate all ignition sources.
Storage Statement	P402: Store in a dry place. P403: Store in a well-ventilated place. P404: Store in a closed container.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Characterization

Mixture

Product	Percentage Contained	CAS Number
Sulfur	> 90.0%	7704-34-9
Hydrated aluminum silicate	< 8.0%	1332-58-7
Dispersant	< 1.0%	Surfactant blend proprietary
Synthetic precipitated silica	< 1.0%	7631-86-9
Magnesium carbonate	< 1.0%	7760-50-1
Decarboxylated resin	< 0.5%	8050-18-8

Hazardous Ingredient None

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

Skin Wash skin thoroughly with mild soap and water. Wash exposed clothing separately before reuse.

Eye Immediately flush eyes with plenty of water for 15 minutes, while holding upper and lower lid apart to insure rinsing of entire eye surface and lids. Do not use boric acid to rinse with. FOR SEVERE IRRITATION, SEEK MEDICAL ATTENTION, preferably an ophthalmologist.

Inhalation Move victim to fresh air. Watch for signs of an allergic reaction. Use a bronchodilator inhaler if directed by asthma patient. Keep victim warm and quiet. If not breathing, give artificial respiration. If heart has stopped beating, start cardiopulmonary resuscitation (CPR). SEEK MEDICAL ATTENTION.

SECTION 4: FIRST AID MEASURES (CONT)

Ingestion

Give one tablespoon of *Syrup of Ipecac* to induce vomiting. If vomiting does occur, give fluids again. If vomiting has not occurred in twenty minutes, the same dose of *Syrup of Ipecac* may be repeated one additional time. Alternatively, vomiting may be induced by touching the back of the throat with a finger. Do not give anything by mouth to an unconscious or convulsing person. SEEK MEDICAL ATTENTION.

Most Important Symptoms and Effects (Long-Term and Acute)

Refer to *Section 11: Toxicological Information*

Indication of any Immediate Medical Attention or Special Treatment Needed

Individuals with known allergies to sulfide drugs may also have allergic reactions to elemental sulfur.

SECTION 5: FIREFIGHTING MEASURES

Suitable Extinguishing Media

Water fog, spray, or regular foam. Do not use a direct water stream.

Unsuitable Extinguishing Media

Do not use solid streams of water, which could create sulfur dust clouds and cause an explosion or could move burning sulfur to adjacent areas.

Exposure Hazards

Prevent human exposure to smoke, fumes, or products of combustion (sulfur oxide gases). Evacuate nonessential personnel from the fire area. If large fire, evacuate people downwind from fire. Consider evacuation for ½ mile in all directions.

Advice for Firefighters

Firemen exposed to contaminated smoke should be immediately relieved and checked for symptoms of exposure of toxic gases. This should not be mistaken for heat exhaustion or smoke inhalation. SEEK MEDICAL ATTENTION IMMEDIATELY.

Protective Equipment

Wear full-faced, self-contained breathing apparatus and full protective clothing.

Fire and Explosion Hazards

Fire will rekindle until mass is cooled below 310°F (154°C). Cool surrounding areas with water fog to prevent re-igniting. Sulfur dust is HIGHLY FLAMMABLE. If suspended in air, it will ignite by friction, static electricity, heat, sparks, or flames. Sulfur dust clouds may explode.

Combustion Products

Sulfur oxide gases.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions

Minor spills such as torn or ruptured containers should be repaired or patched with tape if possible. Place spilled material in a disposable container. Avoid getting dust in eyes.

Protective Equipment

Maintain adequate ventilation. Wear a dust mask when dust is present or a respirator if smoke is present. Wear safety glasses.

Emergency Procedures

As an immediate precautionary measure isolate spills or leak areas. Eliminate all sources of ignition, such as flares, sparks, or flames, in the immediate area. No smoking. Ventilate closed spaces before entering.

Environmental Precautions

Do not allow runoff to enter lakes or waterways.

SECTION 6: ACCIDENTAL RELEASE MEASURES (CONT)

Containment/Cleanup Measures Gently sweep or shovel up spilled material using a natural fiber broom and/or aluminum shovel to prevent sparking, to avoid creating a dust cloud. Place sweepings in an appropriate chemical waste container for reclaiming or disposal in an approved facility. Wash spill site after clean-up is complete.

SECTION 7: STORAGE AND HANDLING

Precautions for Safe Handling **All handling and conveying equipment should be properly grounded and bonded.** Be careful not to create dust. Avoid any conditions that might tend to create a dust explosion. Maintain good housekeeping practices to minimize dust build-up and dispersion. Eliminate sources of ignition. Keep away from heat, sparks, and flames. Use nonferrous tools, when available, to reduce sparking. Gently sweep or shovel up spilled materials using a natural fiber broom and/or aluminum shovel to prevent sparking. Maintain adequate ventilation in all areas.

Conditions for Safe Storage, Including any Incompatibilities:

Containers should be stored in a cool, dry, well-ventilated area. Keep container tightly closed. Store away from flammable materials, sources of heat, flames, and sparks. Separate from chlorates, nitrates, and other oxidizing agents. Exercise due caution to prevent damage to or leakage from container.

Incompatible Materials Keep away from flammable materials, sources of heat, flame, sparks, chlorates, nitrates and other oxidizing agents.

SECTION 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION

Engineering Measures/Control Maintain adequate ventilation in all areas. No flares or flames in area. Be careful not to create dust. Eliminate sources of ignition.

Personal Protective Equipment Pictograms

Respiratory Wear dust masks and use NIOSH/MSHA approved dust respirator if airborne concentrations exceed exposure limits.

Eyes/Face Wear suitable, protective safety glasses to prevent eye irritation from dust.

Hands Wash hands thoroughly after handling and before eating or smoking.

Skin/Body Wear suitable, protective clothing to prevent skin irritation from dust. Wash skin thoroughly after handling and before eating or smoking. Wash contaminated clothing separately before reuse.

Environmental Exposure Controls Follow best practice for site management and disposal of waste. Avoid release to the environment.

General Industrial Hygiene Considerations Protective equipment should be used in any situation that may result in hazardous exposure. Maintain good housekeeping practices to minimize dust build-up and dispersion. Eliminate sources of ignition. Use nonferrous tools to reduce sparking. Sweep or shovel up spilled material using a natural fiber broom and/or aluminum shovel to prevent sparking. Maintain adequate ventilation in all areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Yellow colored lumps, crystals, powder, or formed shape
Formula	S_8 (Rhombic or monoclinic)
Odor	Odorless, or faint odor of rotten eggs
Odor Threshold	No data available
pH	No data available
Boiling Point	832° F (444° C)
Melting/Freezing Point	118-120°C (244-248°F)
Flash Point	207°C (405°F) Closed Cup
Evaporation Rate	No data available
Flammability	May form combustible dust concentrations in air
Flammable/Explosion Limits	Upper: 6.38% (v) Lower: 0.17% (v)
Vapor Pressure	8 mmHg at 246°C (475°F) 1 mmHg at 183.8°C (362.8°F)
Vapor Density	No data available
Purity	90.0% Min. Wettable; 98.0% Min. Dusting
Auto-Ignition Temperature	240°C (464°F)
Decomposition Temperature	Does not decompose
Viscosity	Not applicable
Specific Gravity	2.07 @ 70° F
Solubility in Water	Insoluble
Bulk Density	Lumps: 75-115 lbs. /ft^3 Powder: 33-80 lbs. /ft^3

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability	Stable
Conditions to Avoid	Keep from heat sources, sparks, and open flames.
Incompatible Materials	Oxidizing agents, copper, copper alloys, steel, chlorates, nitrates.
Possibility of Hazardous Reactions	Oxidizing agents may react violently.
Hazardous Decomposition Products	Oxides of sulfur gases produced by burning sulfur.
Hazardous Polymerization	Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

Likely Routes of Exposure	Inhalation, ingestion, skin contact, and eye contact.
Signs and Symptoms of Overexposure	Nose or throat irritation, coughing, chest discomfort, asthma, difficulty breathing, skin irritation, nausea, vomiting, stinging eye irritation, and hives.
Exposure Limits	No exposure limits have been established.
Acute Symptoms and Effects	
Inhalation	Prolonged inhalation may cause irritation of respiratory tract. Breathing of dust may aggravate asthma and other pulmonary diseases.
Eye Contact	Sulfur dust is an eye irritant.
Skin Contact	No adverse effects. Skin irritation may be aggravated in persons with existing skin lesions.
Ingestion	Ingested sulfur is converted to sulfides in the gastrointestinal tract (GI), and ingestion of 10 to 20 grams has caused irritation of the GI tract and renal injury. Swallowing large amounts may cause nausea and vomiting.

SECTION 11: TOXICOLOGICAL INFORMATION (CONT)

Long-Term Effects None known to humans

Toxicity

LD_{50}	Oral: >5050 mg/kg (rats) Dermal: >2020 mg/kg (rats)
LC_{50}	Inhalation @ 90%: >5.49-mg/L air concentration (rats)
Skin	Slightly irritating (rabbits)
Eye	Minimal irritation in non-washed eyes (rabbits)

Sensitization	Reproductive Effects	Developmental Effects	Endocrine Disruptor
Not Established	Not Established	Not Established	Not Established

Carcinogenicity	Teratogenicity	Mutagenicity
This product does not contain any ingredient designated by NTP, IARC, or OSHA as a probable human carcinogen.		

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Toxicity to Fish	**LC_{50}**	*Oncorhynchus mykiss* (rainbow trout) -> 180 mg/l -96h
	LC_{50}	Other fish- 866 mg/l -96h
Toxicity to Daphnia and Other Aquatic Invertebrates	**EC_{50}**	Daphnia magna (Water flea) -> 5,000 mg/l -48h

Ecotoxicity No data available
Mobility No data available
Degradation No data available
Bioaccumulation No data available
Results of PBT and vPvB Assessment PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Product Waste Dispose of content and/or container in accordance with local, regional, national and/or international regulations.

Packaging Waste Dispose of content and/or container in accordance with local, regional, national and/or international regulations.

SECTION 14: TRANSPORTATION INFORMATION

Solid sulfur is not regulated if transported in non-bulk packaging (less than 400 kg per package), or if formed to a specific shape, such as prills, granules, pellets, pastilles, or flakes (49 CFR 172.102, Special Provision 30).

US and Canadian Shipments

Bulk containers (packaging) of powdered sulfur of more than 400 kg (880 lbs.) per package

	14.1 UN Number	14.2 UN Proper Shipping Name	14.3 Transport Hazard Classes	14.4 Packaging Group	14.5 Environmental Hazards
DOT (Domestic)	NA1350	Sulfur (Sulphur)	9 (Misc. Hazardous Materials)	III	No data available
DOT (International)	UN1350	Sulphur (Sulfur)	4	III	No data available
TDG	UN 1350	Sulfur	4.1	III	No data available

SECTION 14: TRANSPORTATION INFORMATION (CONT)

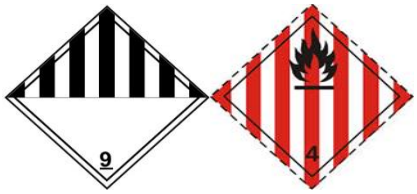
Other than US and Canadian Shipments

All shipments of powdered sulfur

IMO/IMDG	UN1350	Sulphur (Sulfur)	4.1 (Flammable solid)	III	No data available
IATA/ICAO	UN 1350	Sulfur	4.1	III	No data available

This product is not a Marine Pollutant as defined in *40 CFR Part 172.*

Pictograms for Hazard Classes **Powdered sulfur packaging over 400 kg (880 lbs.) only**



Special Precautions for User None specified

SECTION 15: REGULATORY INFORMATION

TSCA This product is listed on the TSCA Inventory at CAS Registry Number 7704-34-9.

CERCLA *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*

- If this product is accidentally spilled, it is not subject to any special reporting. We recommend that you contact state and local authorities to determine if there are other local reporting requirements.

SARA TITLE III *Superfund Amendments and Reauthorization Act, Title III*

- Sections 311/312: None. Section 313: None. Section 302: None.

RCRA *Resource Conservation and Recovery Act*

- Not subject to reporting because sulfur is not identified as a hazardous waste.

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS) and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Caution

Harmful if swallowed, inhaled or absorbed through skin.
Causes moderate eye irritation.
Avoid contact with skin, eyes or clothing.
Wash thoroughly with soap and water after handling.

SECTION 16: OTHER INFORMATION

Last Revision Date	05/01/2015	**Preparation Date**	02/26/2016

Additional Information For additional information, contact your technical sales representative. For additional health and safety information, call Georgia Gulf Sulfur Corporation at 229-244-0000.

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