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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product Identifiers

Trade Name & Synonyms **: EM-53, Yellow Jacket Flowable Sulfur**

Product Name : Sulfur
Product Number : 75791
Brand : Bainbridge Chemical Corp.
CAS Number : 7704-34-9

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified Uses : Agricultural fungicide, Miticide; Chemical intermediate

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier

: Sales, Technical Service
Bainbridge Chemical Corporation
P. O. Box 1165
Valdosta, Georgia 31603
Tel: (229) 244-0000
Fax: (229) 245-1664
http://www.georgiagulfsulfur.com

Shipping, Receiving
Georgia Gulf Sulfur Corporation
1300 Spring Creek Road
Bainbridge, Georgia, USA 39817
Tel: (229) 246-4552
Fax: (229) 246-3245
GPS Coordinates: 30° 54' 06" N
84° 36' 30" W

1.4 Emergency Assistance

CHEMTREC	Tel: (800) 424-9300	within the USA
	Tel: 001-703-527-3887	outside the USA

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Skin irritation (Category 2, Category 4), H316, H332
Eye irritant (Category 2B), H320
Aspiration (Category 2), H305, H335

2.2 GHS Label elements

Pictogram

Signal word : Warning

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SECTION 2: HAZARDS IDENTIFICATION (Cont.)

2.3 Precautionary Statement(s)

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting equipment.
P264	Wash skin thoroughly after handling.
P280	Wear protective gloves/ eye protection/ face protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P402	Store in a dry place.
P403	Store in a well-ventilated place.
P404	Store in a closed container.

2.4 Hazards not otherwise classified (HNOC) or not covered by GHS

Combustible Dust

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical Formula	: S^8
Molecular Weight	: 32.07 g/mol
CAS-No.	: 7704-34-9
EC-No.	: 231-722-6
Index-No.	: 016-094-00-1

3.2 Mixture

Product	Percentage Contained	CAS Number
Fluid Sulfur	>75.7%	7704-34-9
Water	20.2%	7732-18-5
Dispersant	<3.0%	Proprietary
Dispersant	<1.0%	127087-87-0
Thickener	<0.5%	11138-66-2
Antifreeze	<0.2%	57-55-6
Antimicrobial	<0.1%	2634-33-5; 25265-71-8
Defoamer	<0.1%	N/A

3.3 Hazardous Ingredient : None

SECTION 4: FIRST AID MEASURES

4.1 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.

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.

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

The most important known symptoms and effects are described in Section 2.2
Also, refer to Section 11: Toxicological Information

4.3 Indication of any Immediate Medical Attention or Special Treatment Needs

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

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing Media

(Please Refer to Section 5.4 for Specific Information about this Product)

Suitable Extinguishing Media Water fog, spray, alcohol-resistant foam, dry chemical, or carbon dioxide

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.

5.2 Exposure and Special Hazards Arising from the Substance or Mixture

SECTION 5: FIREFIGHTING MEASURES (CONT)

Sulfur Oxides Prevent human exposure to smoke, fumes, or products of combustion.

5.3 Advice for Personnel

Evacuate nonessential personnel from the fire area. If large fire, evacuate people downwind from fire. Consider evacuation for ½ mile in all directions.

5.4 Advice for Firefighters

(If Product Falls out of Suspension and Dries, Flash Point Is 405°F)

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

5.5 Protective Equipment

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

5.6 Other Important Fire and Explosion Hazard Information

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.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 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.

6.2 Protective Equipment

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

6.3 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.

6.4 Environmental Precautions

Do not allow runoff to enter lakes or waterways.

6.5 Methods and Materials for Containment and Cleanup

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.

6.6 Reference to Other Sections

For disposal see Section 13.

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SECTION 7: STORAGE AND HANDLING

7.1 Precautions for Safe Handling

All handling and conveying equipment should be properly grounded and bonded. Be careful not to create dust.
Avoid contact with skin or eyes. 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.

For precautions see section 2.2

7.2 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.

7.3 Specific End Use(s)

Refer to Section 1.2

SECTION 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1 Control parameters

Components with Workplace Control Parameters
Contains no substances with occupational exposure limit values.

8.2 Exposer Controls

Appropriate Engineering Controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. Maintain adequate ventilation in all areas. No flares or flames in area. Eliminate sources of ignition.

8.2.1 Personal Protective Equipment

Pictograms

8.2.2 Respiratory Wear dust or spray respirator approved by NIOSH/MSHA if airborne concentrations exceed exposure limits.

8.2.3 Eyes/Face Wear suitable, protective safety glasses to prevent eye irritation from liquid and gases.

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

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SECTION 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION (CONT)

8.2.5 Skin/Body Wear suitable, protective clothing to prevent skin irritation from liquid. 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.

8.3 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 if product is dry. 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

9.1 Information on Basic Physical and Chemical Properties

Physical State	Liquid emulsion
Appearance	Pale yellow liquid
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) Only when dry
Evaporation Rate	No data available
Flammability	May form combustible dust concentrations in air after material has dried
Flammable/Explosion Limits	Upper: 6.38% (v) Lower: 0.17% (v)
Vapor Pressure	8mmHg at 246°C (475°F) 1mmHg at 183.8°C (362.8°F)
Vapor Density	No data available
Purity	53.0% Max.
Auto-Ignition Temperature	240°C (464°F)
Decomposition Temperature	Does not decompose
Viscosity	Not applicable
Specific Gravity	1.38 @ 70° F

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (CONT)

Solubility in Water	Insoluble; disposable
Bulk Density	11.2 to 11.6 lbs. per gallon

SECTION 10: STABILITY AND REACTIVITY

10.1	**Chemical Stability**	Stable under recommended storage conditions.
10.2	**Possibility of Possible Hazardous Reactions**	Oxidizing agents may react violently.
10.3	**Conditions to Avoid**	Keep away from heat sources, sparks, and open flames.
10.4	**Incompatible Materials**	Oxidizing agents, copper, copper alloys, mild steel, chlorates, nitrates.
10.5	**Hazardous Decomposition Products**	Hazardous decomposition products formed under fire conditions. In an event of a fire: see Section 5
10.6	**Hazardous Polymerization**	Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1	**Likely Routes of Exposure**	Inhalation, ingestion, skin contact, and eye contact
11.2	**Information on Toxicological Effects**	
11.2.1	**Signs and Symptoms of**	Nose or throat irritation, coughing, chest discomfort, asthma, difficulty breathing,
11.2.2	**Overexposure**	nausea, vomiting, stinging eye irritation, skin irritation, hives.
11.2.3	**Exposure Limits**	No exposure limits have been established
11.2.4	**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; however, skin irritation may be aggravated in persons with existing skin lesions.
	Ingestion	Ingested sulfur is converted to sulfides in the gastrointestinal tract, 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.

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SECTION 11: TOXICOLOGICAL INFORMATION (CONT)

11.2.5 Long-Term Effects None known to humans

11.3 Carinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens. No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

11.4 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

12.1 Toxicity

12.1.1 Toxicity to fish LC50- Oncorhynchus mykiss (rainbow trout) -> 180 mg/l -96h
LC50- other fish- 866 mg/l -96h

12.1.2 Toxicity to Daphnia and Other Aquatic Invertebrates
EC50- Daphnia magna (Water flea) -> 5,000 mg/l -48h

12.2 Ecotoxicity No data available

12.3 Mobility No data available

12.4 Degradation No data available

12.5 Bioaccumulation No data available

12.6 Results of PBT and vPvB Assessment PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

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SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

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

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

SECTION 14: TRANSPORTATION INFORMATION

DOT Domestic:

Shipping Name: Sulfur Dispersion
Hazard Class: Not regulated
ID Number: None
Packaging Group: N/A
Label: None required
Placard: None required
Hazardous Substance/Rq: N/A

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

U.S. DOT Information: Packaging references: Exempt from requirements (49CFR172.102, Special Provision 30)

IMDG Information: This material is not classified as dangerous under IMDG regulations.

IATA Information: This material is not classified as dangerous under IATA regulations.

SECTION 15: REGULATORY INFORMATION

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

15.2 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.

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

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

15.4 RCRA *Resource Conservation and Recovery Act*

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

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SECTION 16: OTHER INFORMATION

Last Revision Date	04/30/2020	**Preparation Date**	03/28/2019

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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