

## STANDARD SPECIFICATION OF VARIOUS SULFUR



### Intended Use of Sulfur:

- (1) Manufacturing Sulfuric Acid,
- (2) Sulfur Dioxide,
- (3) Fertilizer,
- (4) Insecticides,
- (5) Fungicides,
- (6) Plasticizers,
- (7) Carbon Disulfide (CS<sub>2</sub>),
- (8) Sulfites,
- (9) Plastics,
- (10) Enamels,
- (11) Batteries,
- (12) Vulcanizing Rubber,
- (13) Synthesizing Sulfur Dyes,
- (14) Bleaching Wood Pulp,
- (15) Making Detergents,
- (16) Aramid Fibers (Aromatic Polyamide),
- (17) Metal – Glass Cement,
- (18) Pharmaceutical Industries,
- (19) Personal Care Products,
- (20) Sugar Manufacture,
- (21) Cosmetics,
- (22) Leather Tanning,
- (23) Animal Feed,

- (24) Making Explosives,
- (25) Dehydration Agent in Organic Chemical and Petrochemical Processes,
- (26) Making Gun Powder and Matches,
- (27) Water treatment and Steel Pickling,
- (28) Metallurgical Ore Leaching,
- (29) Making Pigments,
- (30) Hydrofluric Acid,
- (31) Petroleum Refining

### **Specification of Sulfur:**

**Color:** Bright yellow when solid (No dark particles visible)

**Purity:** 99.8% by weight minimum, dry basis.

**Sulfur Content:** 10ppm by weight, maximum (0.01 %)

**Moisture Content:** 0.60% by weight maximum

**Ash:** 300ppm by weight, maximum (0.03 %)

**Organic matter:** 500ppm by weight, maximum (0.05 %)

**Size:** 2mm – 6mm

**Bulk Density:** Minimum 1040 Kg/m<sup>3</sup> (loose)

**Bulk Density:** Minimum 1200 Kg/m<sup>3</sup> (packed)

**Acidity as H<sub>2</sub>SO<sub>4</sub>:** 50ppm by weight, maximum (0.005 %)

**Chloride as CI friability Test:** 5.0ppm by weight, maximum (0.0005 %)

Less than 1 % of fines (-50 mesh material) generated under standard stress level;

Less than 2 % fines generated under standard stress level II test;

**Compaction:** Direct shear test and dynamic loading:

Fines generated after direct shear test under static loading of 165 kPa (Approximately 15 meter stockpile) not to exceed 0.2 % fines by weight.

Fines generated after direct shear test under dynamic loading at 165 kPa not to exceed 0.5 % fines by weight.

**Solid Sulfur Granule Size Distribution:** Less than 5 % to be retained on a 6.3 mm screen.

A minimum of 75 % of material to pass through a no. 3 1/2 U.S. screen (5.6mm);

A minimum of 75 % of material to be retained on a No. 7 U.S. screen (2.80mm);

Less than 2 % to pass through a No. 16 U.S. screen (1.00mm);

Less than 0.5 % to pass through a No. 50 U.S. screen (300mm);

**Angle of Repose:** Not less than 25°

**Product No. 1: Micronized Sulfur Powder**

PROPERTY & COMPOSITION	SPECIFICATION
Purity (WT%) Min.	99.8
Ash Content (WT%) Max.	$\leq 0.06$
Organic Matter (WT%) Max.	$\leq 0.07$
Moisture (WT%) Max.	$\leq 0.4$
Color	Light Yellow
Form	Micronized Powder
Mesh Size	Grade 200 – 500 According To Order
Arsenic, Selenium, Tellurium & Lead	Nil
Mechanical Impurities (Paper, Wood & Sand)	Nil (Not Permitted)

**Product No. 2: Granular Sulfur**

PROPERTY & COMPOSITION	SPECIFICATION
Purity (WT%) Min.	99.95
Form	Granular
Ash Content (WT%) Max.	$\leq 0.05$
Moisture (WT%) Max.	$\leq 0.5$
Color	Bright Yellow
Acidity, H <sub>2</sub> SO <sub>4</sub> (WT%) Max.	$\leq 0.02$
Carbon Content (WT%) Max.	$\leq 0.03$
Arsenic, Selenium, Tellurium & Lead	Nil
Mechanical Impurities (Paper, Wood & Sand)	Nil (Not Permitted)

**Product No. 3: Sulfur Coated Urea**

PROPERTY & COMPOSITION	SPECIFICATION
Nitrogen Content (WT%)	36
Sulfur (WT%)	15
Additive (WT%)	5

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Moisture (WT%)	0.5
Main Size (WT%) 2 – 4mm	92
Arsenic, Selenium, Tellurium & Lead	Nil
Mechanical Impurities (Paper, Wood & Sand)	Nil (Not Permitted)

### **Product No. 4: Sulfur Bentonite**

PROPERTY & COMPOSITION	SPECIFICATION
Sulfur Content (WT%)	Min. 85 Max. 91
Bentonite Content (WT%)	Min. 9 Max. 15
Moisture Content (WT%) Max.	0.5
Form	Pastille (Half Sphere)
Color	Yellow Green – Earth Tone
Size	Min. 75% between 2 & 5 mm, Less than 0.3 mm < 1%
Arsenic, Selenium, Tellurium & Lead	Nil
Mechanical Impurities (Paper, Wood & Sand)	Nil (Not Permitted)

### **Supplemental Information:**

Keep away from heat, hot surfaces, Sparks, Open flames and other ignition sources. No smoking. Proper grounding procedures to avoid static electricity should be followed. Prevent dust accumulation (to minimize explosion hazard). Avoid generating dust.

### **Other Hazards:**

It contains a small amount of Hydrogen Sulfide. Hydrogen sulfide is a fatal and highly flammable gas with a rotten egg odor that quickly causes odor fatigue. Heating of this product and storage under elevated temperatures or over long periods of time may release higher amounts of Hydrogen Sulfide. Hydrogen Sulfide is also an asphyxiant. Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

### **Storage:**

- (1) Prevent from moisture absorption, keep away from heat, keep in air well – ventilated area.
- (2) Do not contact with acids and alkaline substance, protect from dust.
- (3) Ensure bags are kept in sealed and in good condition.

### **Packing:**

The packing is in 50/Kg. bags, Jumbo Bag 1/MT or in Bulk.