**Material Safety Data Sheet (MSDS) for Celestine (Celestite, SrSO₄)**

**1. Product Identification**

* **Product Name:** Celestine (Celestite)
* **Chemical Formula:** SrSO₄
* **CAS Number:** 7759-02-6
* **Supplier:** ATDM
* **Origin:** Iran (Supplied from Dubai)

**2. Composition & Information on Ingredients**

| **Component** | **Chemical Formula** | **Percentage (%)** |
| --- | --- | --- |
| **Strontium Sulfate** | SrSO₄ | 90-98% |
| **Barium Sulfate** | BaSO₄ | 1-5% |
| **Calcium Sulfate** | CaSO₄ | 1-3% |
| **Silica (Quartz, SiO₂)** | SiO₂ | ≤ 1% |
| **Iron Oxide** | Fe₂O₃ | ≤ 0.5% |

**3. Hazards Identification**

* **GHS Classification:** Non-hazardous
* **Potential Health Effects:**
  + **Inhalation:** May cause minor respiratory irritation with prolonged exposure.
  + **Skin Contact:** Non-irritant under normal conditions.
  + **Eye Contact:** Dust may cause slight irritation.
  + **Ingestion:** Non-toxic in small amounts but not recommended.
* **NFPA Ratings:**
  + **Health:** 1 (Slight hazard)
  + **Flammability:** 0 (Non-flammable)
  + **Reactivity:** 0 (Stable)

**4. First Aid Measures**

* **Inhalation:** Move to fresh air. Seek medical attention if breathing difficulty occurs.
* **Skin Contact:** Wash with soap and water. No serious effects expected.
* **Eye Contact:** Rinse eyes with water for 15 minutes. Seek medical help if irritation persists.
* **Ingestion:** Rinse mouth with water. Seek medical attention if symptoms develop.

**5. Firefighting Measures**

* **Flammability:** Non-flammable
* **Suitable Extinguishing Media:** Water, CO₂, foam, or dry chemical
* **Hazardous Combustion Products:** None
* **Protective Equipment:** Standard firefighting gear

**6. Accidental Release Measures**

* **Personal Protection:** Wear a dust mask and safety goggles when handling large amounts.
* **Cleanup Methods:** Sweep up and place in a suitable container for disposal. Avoid dust generation.
* **Environmental Precautions:** Prevent excessive dust release into the air.

**7. Handling & Storage**

* **Handling:**
  + Avoid excessive dust generation.
  + Use appropriate ventilation when working with large quantities.
* **Storage:**
  + Keep in a dry, well-ventilated area.
  + Store in sealed containers to prevent moisture absorption.

**8. Exposure Controls & Personal Protection**

* **Occupational Exposure Limits:**
  + OSHA PEL (Total Dust): 15 mg/m³
  + ACGIH TLV (Respirable Dust): 5 mg/m³
* **Personal Protective Equipment (PPE):**
  + **Respiratory Protection:** Use an N95 dust mask if airborne dust is present.
  + **Eye Protection:** Safety glasses or goggles.
  + **Skin Protection:** Gloves recommended for prolonged handling.

**9. Physical & Chemical Properties**

| **Property** | **Value** |
| --- | --- |
| **Appearance** | White, blue, gray crystalline mineral |
| **Odor** | Odorless |
| **Density** | 3.9–4.0 g/cm³ |
| **Solubility in Water** | Slightly soluble |
| **Hardness (Mohs Scale)** | 3.0–3.5 |
| **Melting Point** | 1,600°C |
| **pH** | Neutral |

**10. Stability & Reactivity**

* **Stability:** Stable under normal conditions
* **Reactivity:** Non-reactive with most chemicals
* **Incompatible Materials:** Strong acids (may release toxic gases)
* **Decomposition Products:** Strontium oxide (SrO) and sulfur dioxide (SO₂) at extremely high temperatures

**11. Toxicological Information**

* **Acute Toxicity:** Non-toxic under normal exposure levels
* **Carcinogenicity:** Not classified as carcinogenic by OSHA, IARC, or NTP
* **Chronic Effects:** Long-term exposure to dust may cause mild lung irritation

**12. Ecological Information**

* **Environmental Impact:** Minimal
* **Aquatic Toxicity:** Non-toxic but avoid excessive discharge into waterways
* **Biodegradability:** Naturally occurring mineral; does not degrade

**13. Disposal Considerations**

* **Waste Disposal Method:** Dispose of in accordance with local environmental regulations.
* **Recycling:** Possible for industrial applications.

**14. Transport Information**

* **UN Number:** Not classified as hazardous
* **Hazard Class:** Non-hazardous
* **Packing Group:** Not regulated
* **Shipping Label:** None required

**15. Regulatory Information**

* **OSHA Hazard Classification:** Non-hazardous
* **TSCA (USA):** Listed
* **REACH (EU):** Compliant

**16. Other Information**

* **Recommended Use:** Industrial applications including drilling, glass, and ceramics
* **Supplier Contact:** ATDM (Dubai, UAE)