Material Safety Data Sheet (MSDS)

Access safety and handling information for Humimic SimuGel™ and approved colorants.

Last Updated: [September, 2025]

Section 1: Product Information

This section gives you a quick overview of what the product is, who makes it, and how to reach the right contacts in case of emergencies or general inquiries.

Humimic SimuGel™ is a medium designed to simulate human tissue for training, imaging, and research. It is also referred to as Humimic Phantoms or Humimic Gels.

- **Product Identifiers:** 852844007390, 852844007406, 852844007413, 852844007420, 852844007437, 852844007802, 853000000000, 852844007710, 852844007703, 852844007741, 852844007857, 852844007840, 767656432, 852844007956, 852844007963, 852844007963-1 (UPC codes)
- **Manufacturer:** 110 Augusta Arbor Way, Suite B, Greenville, SC 29605, United States
- **Website:** humimic.com
- **Emergency Phone:** 1-800-222-1222 (Poison Control)
- **Chemtrec Phone:** (800) 424-9300
- **General Inquiries:** 1-888-271-0461

Section 2: Composition / Information on Ingredients

Here you'll find the basic makeup of Humimic SimuGel™, including its components and their safety classifications.

Humimic SimuGel™ is formulated with non-hazardous components. It is safe for repeated handling and use in training, imaging, and R&D settings.

Component Name	Hazardous in Blend	Percentage (%)	Exposure Limit	Unit
Oil (Trade Secret)	None	75–95	OSHA PEL, ACGIH TLV	No Limit
Gellants (Trade Secret)	None	5–25	OSHA PEL, ACGIH TLV	No Limit

Section 3: Hazard Identification

This section outlines any possible risks associated with SimuGel™ and how it may affect people if it comes into contact with skin, eyes, or is ingested or inhaled.

Emergency Overview: Humimic SimuGel™ is stable and not classified as hazardous under normal handling conditions.

Routes of Entry:

- Eye contact
- Skin contact
- Inhalation of oil mist (rare, at elevated concentrations)
- Ingestion

Potential Health Effects:

- **Eyes** - Minimally irritating if direct contact occurs.
- **Skin** - Not expected to cause irritation from direct or prolonged contact. Tests with similar compounds show minimal to slight irritation in rare cases.
- **Ingestion** - Non-toxic under normal use. Large amounts may have laxative effects and cause temporary discomfort such as cramps or diarrhea.
- **Inhalation** - Risk of lipid pneumonia applies primarily if mineral oil or similar hydrocarbons are aspirated into the lungs, which is rare with highly refined mineral oils used in SimuGel™. Proper use minimizes aerosol formation to reduce any risk.
- **Health Data Hazards** - Repeated or large exposures to mineral oil (by inhalation, aspiration, or ingestion leading to aspiration) may cause lipid pneumonia or granuloma of the lung. Symptoms may include cough and shortness of breath. According to the International Agency for Research on Cancer (IARC), highly refined mineral oils are classified as Group 3: *"Not classifiable as to their carcinogenicity to humans."*

- **Carcinogenicity** - Humimic SimuGel™ is not listed as a carcinogen or potential carcinogen by NTP, IARC, or OSHA.

Section 4: Emergency & First AID Procedures

Guidance on how to respond if accidental contact, inhalation, or ingestion occurs during handling or use.

- **Eye Contact -** Rinse cautiously with clean water for several minutes. Remove contact lenses if present and easy to do. If irritation persists, seek medical attention.
- **Skin Contact** - If contact with molten SimuGel™ occurs, treat as an ordinary burn. The product is otherwise non-irritating to the skin.
- **Inhalation** - Not ordinarily required. SimuGel™ is not expected to cause irritation to the nose, throat, or respiratory tract.
- **Ingestion** - Rinse mouth with water. Not ordinarily required. If large amounts are swallowed, consult a physician.

Section 5: Fire Fighting Procedures and Precautions

Information for emergency responders on how to handle fires involving SimuGel™, including suitable extinguishing methods and protective measures.

- **Specific Hazards** - Toxic gases such as carbon monoxide may form if the product is burned without sufficient oxygen.
- **Extinguishing Media** - Use water fog, foam, dry chemical, or CO_2.
- **Special Procedures and Precautions** - SimuGel™ will not burn unless preheated. Do not enter a confined fire space without full protective gear, including a helmet with a face shield, bunker coat, gloves, rubber boots, and a positive-pressure NIOSH-approved self-contained breathing apparatus. Cool exposed containers with water.
- **Flash Point and Method** - Typical flash point for mineral oil components is approximately 150°C (302°F) or higher depending on the grade. SimuGel™ will not ignite without preheating to this temperature or above.
- **Flammable Limits in Air** - Not applicable under normal handling; combustible only when heated above flash point.

Section 6: Accidental Release Measures

Instructions for safe cleanup and personal protection if SimuGel™ is accidentally released.

6.1 Method for Cleaning Up - SimuGel™, as a gel material, does not produce dust. Cleanup should focus on safely collecting spilled gel material using shovels or absorbents. Avoid creating aerosols or mist during cleanup.

6.2 Personal Precautions - Wear appropriate respiratory protection and protective clothing, as described in Section 8.

Section 7: Handling and Storage

Recommendations for safely handling and storing SimuGel™ to maintain product integrity and workplace safety.

7.1 Handling

Ground all transfer, blending, and dust-collecting equipment to prevent static sparks. Remove ignition sources from handling, transfer, and processing areas where dust may be present. Provide mechanical and local exhaust in work areas.

Do not use near open flames or smoking areas. Maintain good housekeeping and prevent product accumulation, as spills may create slipping hazards. Equipment should allow for safe dissipation of static charges. Avoid vapors from heated product. Use adequate ventilation or engineering controls during high-temperature processing to prevent exposure to irritating fumes.

7.2 Storage

Store in a cool, dry, and well-ventilated location.

Section 8: Exposure Controls/Personal Protection

Protective equipment and ventilation measures to minimize exposure during use or processing.

8.1 Control Parameters

- **Comp. OSHA ACGIH:** None established
- No PEL/TWA, PEL/CEILING, TVL/TWA, or TLV/STEL limits identified for this product.

8.2 Respiratory Protection

Use a NIOSH-approved respirator if needed to prevent overexposure. In line with 29 CFR 1910.134, either an atmosphere-supplying respirator or an air-purifying respirator for particulates may be used.

8.3 Protective Clothing

Wear safety glasses and protective clothing when the product is heated during processing.

8.4 Additional Protective Measures

Provide adequate ventilation or engineering controls when the product is heated to minimize exposure to fumes.

Section 9: Physical and Chemical Properties

A summary of the key characteristics of SimuGel™, such as melting point, solubility, and appearance.

- **Boiling Point (°F):** Typically above 600°F (315°C), varies with formulation; considered very high for all components.
- **Melting Point (°F):** 198°F
- **Specific Gravity (H_2O=1):** 0.91
- **Solubility in Water:** Insoluble
- **Vapor Pressure (mm Hg):** Negligible at room temperature, effectively close to zero.
- **Vapor Density (Air=1):** Not applicable due to negligible vaporization under normal conditions.
- **Evaporation Rate (Butyl Acetate=1):** Negligible; product does not evaporate appreciably.
- **Appearance:** Solid gel-like consistency at room temperature.
- **Odor:** Essentially odorless or may have a faint petroleum-like scent depending on batch and additives.

Section 10: Stability and Reactivity

Details on how stable the product is under normal use and what conditions to avoid.

10.1 Stability - Stable. Hazardous polymerization will not occur.

10.2 Conditions and Materials to Avoid - Avoid contact with strong oxidizing agents.

10.3 Hazardous Decomposition Products - At processing temperatures, some degree of thermal degradation may occur. Depending on conditions, decomposition products may include simple hydrocarbons (such as methane and propane) as well as toxic or irritating gases (such as carbon monoxide and carbon dioxide).

Section 11: Toxicological Information

Not expected to cause significant acute or chronic effects under normal use.

Section 12: Ecological Information

Not expected to be hazardous to the environment. Insoluble in water and not readily biodegradable.

Section 13: Disposal Considerations

No special disposal method has been established. Dispose of in accordance with local, state, and federal regulations.

13.1 Waste Disposal Method

No special method was established. Dispose of it in accordance with local, state, and federal regulations.

13.2 RCRA Hazard Class

Not classified as hazardous waste.

Section 14: Transport Information

Shipping and transportation guidelines, including regulatory status and labeling.

- **Proper Shipping Name** - Not regulated as hazardous material.
- **Hazard Class** - Not classified.
- **ID Number** - None assigned.
- **Packing Group** - Not applicable.
- **Label Statement** - No special labeling required.
- **Water Transportation** - Not regulated as hazardous under U.S. DOT, IMDG, or IATA transport guidelines

Section 15: Regulatory Information

Key U.S. and international regulations that apply to SimuGel™, including compliance notes.

15.1 U.S. Federal Regulations

- **TSCA (Toxic Substances Control Act)**
  Humimic SimuGel™ is a mixture. Based on supplier data, its ingredients are listed on the TSCA Inventory or are exempt.
- **CERCLA**
  No CERCLA hazardous substances are present at reportable quantities.
- **SARA Title III (Sections 302/304)**
  No extremely hazardous substances. No emergency release notification thresholds apply.
- **SARA Title III (Sections 311/312) Hazard Categories**
  Not classified as a hazardous chemical under OSHA HCS.
- **SARA Title III (Section 313) Reportable Ingredients**
  No Section 313 reportable toxic chemicals are present above de minimis levels.

15.2 State Regulations

- **California Proposition 65**
  No intentionally added chemicals known to the State of California to cause cancer or reproductive harm.

15.3 International Regulations

- **GHS/CLP**
  Not classified as hazardous based on available data.
- **REACH (EU)**
  Product is a mixture. Components are expected to be supplied in compliance with REACH by upstream suppliers.

Regulatory note: Requirements can change. Users should follow all local, state, and national regulations for their location and use case.