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## Material Safety Data Sheet

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# Safety Data Sheet Separators

## 1. Identification

### Identification

**Product name:** Separators

### Additional identification

**Chemical name:** Mixture

### Recommended use and restriction on use

**Recommended use:** Medical Use

**Restrictions on use:** None identified.

### Details of the supplier of the safety data sheet

#### Supplier

**Company Name:** RMO  
**Address:** 2164 Earlywood Drive  
Franklin, IN 46131

**Telephone:** (800)-525-6375

### Emergency telephone number:

FOR TRANSPORT EMERGENCY CALL CHEMTREC WITHIN USA 800 262 8200

## 2. Hazard(s) identification

### Hazard Classification

Not classified

### Label Elements:

**Hazard Symbol:** No symbol

**Signal Word:** No signal word.

**Hazard Statement:** Not applicable

**Precautionary Statements:** Not applicable

**Other hazards which do not result in GHS classification:** None identified.



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### 3. Composition/information on ingredients

Chemical name	CAS number	Percent by Weight
Barium sulfate	7727-43-7	10 – 20%

### 4. First-aid measures

<b>Ingestion:</b>	Treat symptomatically. Get medical attention.
<b>Inhalation:</b>	Remove exposed person to fresh air if adverse effects are observed.
<b>Skin Contact:</b>	For contact with molten product, do not remove contaminated clothing. Flush skin immediately with large amounts of cold water. If possible submerge area in cold water. Pack with ice. DO NOT attempt to peel polymer from skin. Seek medical attention immediately. Wash with soap and water. If skin irritation occurs, get medical attention.
<b>Eye contact:</b>	If hot melted material should splash into the eyes, flush eyes immediately with water for 15 minutes while holding the eyelids open. Immediately call a poison center or doctor. Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses.
<b>Personal Protection for First-aid Responders:</b>	When providing first aid always protect yourself against exposure to chemicals or blood born diseases by wearing gloves, masks and eye protection. After providing first aid wash your exposed skin with soap and water.

#### Most important symptoms/effects, acute and delayed

**Symptoms:** See section 11.

#### Indication of immediate medical attention and special treatment needed

**Treatment:** Treat symptomatically.

### 5. Fire-fighting measures

**General Fire Hazards:** No unusual fire or explosion hazards noted.

#### Suitable (and unsuitable) extinguishing media

**Suitable extinguishing media:** Use water spray, dry chemical or foam for extinction. CO2 may be ineffective on large fires.

**Unsuitable extinguishing media:** Not determined.

**Specific hazards arising from the chemical:** See section 10 for additional information.

#### Special protective equipment and precautions for fire-fighters



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**Special fire-fighting procedures:**

Thermoplastic polymers can burn. Protect product from flames; maintain proper clearance when using heat devices, etc. Irritating or toxic substances will be emitted upon burning, combustion or decomposition. Large masses of molten polymer held at elevated temperatures for extended periods of time may auto-ignite. May self-react upon long standing or exposure to heat with generation of enough heat to cause fire.

**Special protective equipment for fire-fighters:**

Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots.

### 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures:**

No data available.

**Environmental Precautions:**

Avoid release to the environment. Do not contaminate water sources or sewer. Environmental manager must be informed of all major spillages. Prevent further leakage or spillage if safe to do so.

**Methods and material for containment and cleaning up:**

Pick up free solid for recycle and/or disposal.

### 7. Handling and storage

**Precautions for safe handling:**

Contact with heated material may cause thermal burns. Wash thoroughly after handling.

Refer to Processing Guide and/or contact your local Technical Service representative for melt processing temperature range. For most thermoplastic polyurethanes, melt processing is in the range of 177 - 232 deg. C (350 - 450 deg. F), however, some products may process at different temperatures. Heating above the maximum handling temperature can generate hazardous decomposition products (see Section 10).

Fume condensates may include hazardous contaminants from additives. Condensate may be combustible and should be periodically removed from exhaust hoods, ductwork, and other surfaces. Impervious gloves should be worn during cleanup operations to prevent skin contact.

Post thermal processing activities necessary to produce molded articles (such as cutting, sanding, sawing, grinding, drilling, or regrinding) may create dust or "fines." Powders, dust, and/or fines may pose a dust explosion hazard. Avoid breathing dust.

Loading and unloading operations may cause nuisance dust to form. Electrostatic buildup may occur when pouring or transferring this product from its container. The spark produced may be sufficient to ignite vapors of flammable liquids. Always transfer product by means which avoid static buildup. Avoid pouring product directly from its container into combustible or flammable solvent.



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Conduct any operations emitting fumes or vapors (including thermoforming, heat joining, cutting and or sealing of articles and clean up) under well-ventilated conditions. Avoid breathing process vapors. Do not hold product for extended periods of time at elevated temperatures or allow thick masses of hot polymer to accumulate because they can decompose emitting hazardous gasses. Do not taste, swallow, or chew products. Wash thoroughly after processing. Do not store or consume food in processing areas. The major off-gasses from normal melt processing are expected to be water vapor and carbon dioxide. Other trace volatile organic components may also be emitted. Observe good industrial hygiene practices. Provide adequate ventilation. Wear appropriate personal protective equipment.

**Maximum Handling Temperature:** 232 °C 450 °F

**Conditions for safe storage, including any incompatibilities:** Store in dry, well ventilated place away from sources of heat and direct sunlight. Store away from incompatible materials. See section 10 for incompatible materials.

**Maximum Storage Temperature:** Not determined.

**8. Exposure controls/personal protection**

**Control Parameters:  
Occupational Exposure Limits**

Chemical name	Type	Exposure Limit Values	Source
Barium sulfate - Inhalable fraction.	TWA	5 mg/m3	US. ACGIH Threshold Limit Values, as amended (02 2014)
Barium sulfate - Total	REL	10 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended (2010)
Barium sulfate - Respirable.	REL	5 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended (2010)
Barium sulfate	IDLH	50 mg/m3	US. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended (10 2019)
Barium sulfate - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)
Barium sulfate - Respirable fraction.	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)
Barium sulfate - Total dust.	TWA	15 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (03 2016)
Barium sulfate - Respirable fraction.	TWA	5 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (03 2016)
Barium sulfate - Respirable fraction.	TWA	15 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (03 2016)



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Barium sulfate - Total dust.	TWA	50 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (03 2016)
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**Appropriate engineering controls:**

Thermal processing operations should be ventilated to control gases and fumes given off during processing.

**Individual protection measures, such as personal protective equipment**

**General information:**

Use personal protective equipment as required.

**Eye/face protection:**

If contact is likely, safety glasses with side shields are recommended.

**Skin Protection**

**Hand Protection:**

To avoid burns from contact with molten product, use thermal insulating gloves.

**Other:**

Long sleeve shirt is recommended.

**Respiratory Protection:**

Under normal use conditions, respirator is not usually required. Use appropriate respiratory protection if exposure to dust particles, mist or vapors is likely. Cutting operations may create small particles from this product. If inhalation of particles cannot be avoided, wear a dust respirator. Consult with an industrial hygienist to determine the appropriate respiratory protection for your specific use of this material. A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator.

**Hygiene measures:**

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

### 9. Physical and chemical properties

**Appearance**

<b>Physical state:</b>	solid
<b>Form:</b>	Pellets
<b>Color:</b>	White
<b>Odor:</b>	Slight
<b>Odor threshold:</b>	No data available.
<b>pH:</b>	Not applicable based on solubility in water.
<b>Melting Point:</b>	No data available.
<b>Boiling Point:</b>	No data available.
<b>Flash Point:</b>	Not applicable.
<b>Evaporation rate:</b>	No data available.
<b>Flammability (solid, gas):</b>	No data available.
<b>Upper/lower limit on flammability or explosive limits</b>	
<b>Flammability limit - upper (%):</b>	No data available.



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<b>Flammability limit - lower (%):</b>	No data available.
<b>Explosive limit - upper:</b>	No data available.
<b>Explosive limit - lower:</b>	No data available.
<b>Vapor pressure:</b>	No data available.
<b>Vapor density:</b>	No data available.
<b>Relative density:</b>	1 - 1.1 68 °F (20 °C)
<b>Solubility(ies)</b>	
<b>Solubility in water:</b>	No data available.
<b>Solubility (other):</b>	No data available.
<b>Partition coefficient (n-octanol/water):</b>	No data available.
<b>Auto-ignition temperature:</b>	No data available.
<b>Decomposition temperature:</b>	No data available.
<b>Viscosity:</b>	No data available.

### 10. Stability and reactivity

<b>Reactivity:</b>	No data available.
<b>Chemical Stability:</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions:</b>	Will not occur.
<b>Conditions to avoid:</b>	Not determined.
<b>Incompatible Materials:</b>	None known, avoid contact with reactive chemicals.
<b>Hazardous Decomposition Products:</b>	May also include isocyanates and small amounts of hydrogen cyanide. Thermal decomposition or combustion may generate smoke, carbon monoxide, carbon dioxide, nitrogen oxides, sulfur oxides, mercaptans, sulfides, including hydrogen sulfide and other products of incomplete combustion. Thermal decomposition may generate barium oxides and other barium containing compounds.

### 11. Toxicological information

#### Information on likely routes of exposure

<b>Inhalation:</b>	No data available.
<b>Ingestion:</b>	No data available.
<b>Skin Contact:</b>	No data available.
<b>Eye contact:</b>	No data available.

#### Information on toxicological effects

##### Acute toxicity



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### Oral

Product: Not classified for acute toxicity based on available data.

### Dermal

Product: Not classified for acute toxicity based on available data.

### Inhalation

Product: Overexposure to vapors or mist may cause dizziness, headache, nausea, and/or flu-like symptoms. Persons with sensitive airways (e.g., asthmatics) may react to vapors.

### Skin Corrosion/Irritation:

Product: Remarks: Not classified as a primary skin irritant. Prolonged or repeated skin contact as from clothing wet with material may cause dermatitis. Symptoms may include redness, edema, drying, and cracking of the skin.

### Serious Eye Damage/Eye Irritation:

Product: Remarks: Not classified as a primary eye irritant.

### Respiratory sensitization:

Product: Remarks: Under decomposition conditions, isocyanates may be generated from this product. Isocyanates can cause skin sensitization and/or respiratory sensitization.

### Skin sensitization:

Product: Remarks: Under decomposition conditions, isocyanates may be generated from this product. Isocyanates can cause skin sensitization and/or respiratory sensitization.

### Specific Target Organ Toxicity - Single Exposure:

No data available

### Aspiration Hazard:

No data available

### Chronic Effects

#### Carcinogenicity:

No data available

#### IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

#### US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

#### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended:



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No carcinogenic components identified

**Germ Cell Mutagenicity:**

No data available

**Reproductive toxicity:**

No data available

**Specific Target Organ Toxicity - Repeated Exposure:**

Product:

Prolonged inhalation of high levels of barium sulfate dust may cause lung damage resulting in a benign pneumoconiosis.

Barium sulfate

Prolonged inhalation of high levels of barium sulfate dust may cause lung damage resulting in a benign pneumoconiosis.





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### Ecotoxicity

#### Fish

No data available

#### Aquatic Invertebrates

No data available

#### Toxicity to Aquatic Plants

No data available

#### Toxicity to soil dwelling organisms

No data available

#### Sediment Toxicity

No data available

#### Toxicity to Terrestrial Plants

No data available

#### Toxicity to Above-Ground Organisms

No data available

#### Toxicity to microorganisms

No data available

#### Persistence and Degradability Biodegradation

No data available

### Bioaccumulative potential

#### Bioconcentration Factor (BCF)

No data available

#### Partition Coefficient n-octanol / water (log Kow)

No data available

### Mobility:

No data available

### Other adverse effects

No data available

### Disposal instructions:

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Since emptied containers retain product residue, follow label warnings even after container is emptied.

### Contaminated Packaging:

Container packaging may exhibit hazards.



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**Material Safety Data Sheet****Page 10 of 13****14. Transport information****DOT**

Not regulated.

**IMDG**

Not regulated.

**IATA**

Not regulated.

**Transport in bulk according to Annex II of MARPOL and the IBC Code**

None known.

The DOT shipping information in this section is based on a bulk container. Please review the accompanying shipping papers for the correct shipping descriptions based the size of the package. Shipping descriptions may vary based on mode of transport, quantities, temperature of the material, package size, and/or origin and destination. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

During transportation, steps must be taken to prevent load shifting or materials falling, and all relating legal statutes should be obeyed. Review classification requirements before shipping materials at elevated temperatures.

**15. Regulatory information****US Federal Regulations****TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

None present or none present in regulated quantities.

**TSCA Section 5(a)2 Significant New Use Rule (SNURs) (40CFR 721, Subpt E)**

None present or none present in regulated quantities.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

None present or none present in regulated quantities.

**Superfund amendments and reauthorization act of 1986 (SARA)****SARA 311 Classifications**

Not classified


**SARA 302 Extremely Hazardous Substance**

None present or none present in regulated quantities.

**SARA 304 Emergency Release Notification**

None present or none present in regulated quantities.

**SARA 313 (TRI Reporting)**

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<u>Chemical Identity</u>	<u>CAS number</u>	<u>Reporting threshold for other uses</u>	<u>Reporting threshold for manufacturing and processing</u>
Barium sulfate	7727-43-7	10000 lbs	25000 lbs

## US State Regulations

### US. California Proposition 65



This product may contain chemical(s) known to the state of California to cause cancer and/or birth defects. Additional information can be received upon request.

## Inventory Status

### Australia (AIC)

All components are in compliance with chemical notification requirements in Australia.

### Canada (DSL/NDSL)

This product contains one or more substances that are present on the Non-Domestic Substances List (NDSL). This product may be imported to Canada in limited quantities.

### China (IECSC)

This product contains a substance or polymer that has been notified and is restricted to import by the notifier.

### European Union (REACH)

To obtain information on the REACH compliance status of this product, please e-mail REACH@SDSInquiries.com.

### Great Britain (UK REACH)

To obtain information on the UK REACH compliance status of this product, please e-mail REACH@SDSInquiries.com.

### Japan (ENCS)

All components are in compliance with the Chemical Substances Control Law of Japan.

### Korea (ECL)

All components are in compliance in Korea.

### New Zealand (NZIoC)


All components are in compliance with chemical notification requirements in New Zealand.

### Philippines (PICCS)

All components are in compliance with the Philippines Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 (R.A. 6969).

### Switzerland (SWISS)

All components are in compliance with the Environmentally Hazardous Substances Ordinance in Switzerland.

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**Taiwan (TCSCA)**

All components of this product are listed on the Taiwan inventory.

**Turkey (KKDIK)**

To obtain information on the KKDIK compliance status of this product, please e-mail REACH@SDSInquiries.com.

**United States (TSCA)**

All substances contained in this product are listed on the TSCA inventory or are exempt.

The information that was used to confirm the compliance status of this product may deviate from the chemical information shown in Section 3.

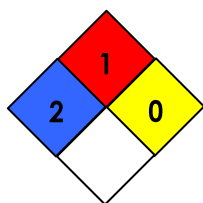
**16. Other information, including date of preparation or last revision**

**HMIS Hazard ID**

<b>Health</b>		<b>0</b>
<b>Flammability</b>		<b>1</b>
<b>Physical Hazards</b>		<b>0</b>

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; \*Chronic health effect

**NFPA Hazard ID**



- Flammability
- Health
- Reactivity
- Special hazard.

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible


**Issue Date:** 09/01/2022

**Version #:** 7.0

**Source of information:** Internal company data and other publically available resources.

**Further Information:** Contact supplier (see Section 1)

Revision(s) are noted by the double bar in the margin and the light gray box.

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**Notice to reader**

To the best of our knowledge, the information contained herein is accurate. However RMO assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.