1. Product and company identification

Product name
POLYETHYLENE ETHENE-BUTENE-1 COPOLYMER

Supplier

Trade name

Material uses
Consumer products. Industrial applications.

MSDS #
0000002026 (NAP)

Emergency telephone number
1 (800) 424-9300
Outside the US: +1 703-527-3887 (CHEMTREC)

2. Hazards identification

Physical state
Granular solid. Pellets. Powder or flakes.

Emergency overview
This product has been evaluated and does not require any hazard warning on the label under established regulatory criteria. Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat.

No known significant effects or critical hazards. Avoid prolonged contact with eyes, skin and clothing.

Routes of entry
Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Inhalation
Dust: Exposure to airborne concentrations well above the recommended exposure limits may cause irritation of the nose, throat, and lungs. Vapor: If heated to more than 300°C, the product may form vapors or fumes which could cause irritation of the respiratory tract, coughing, and shortness of breath.

Ingestion
No significant health hazards identified.

Skin
No significant irritation expected other than possible mechanical irritation. Heated material can cause thermal burns.

Eyes
No significant irritation expected other than possible mechanical irritation. Heated material can cause thermal burns. Emits acrid smoke and fumes when heated to decomposition.

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene-Hexene-1 Copolymer (Pure)</td>
<td>25213-02-9</td>
<td>90 - 100</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polyethylene-Butene Copolymer (Pure)</td>
<td>25087-34-7</td>
<td>90 - 100</td>
</tr>
<tr>
<td>Pigments, if present</td>
<td></td>
<td>0.04 - 0.06</td>
</tr>
</tbody>
</table>

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.
4. First aid measures

Eye contact
Flush eyes with plenty of water for 15 minutes, occasionally lifting upper and lower eyelids. Get medical attention if irritation occurs.

Skin contact
If burned by contact with hot material, flush skin immediately with large amounts of cold water. If possible, submerge area in cold water. No attempt should be made to detach polymer adhering to the skin or to remove clothing attached with molten material. Thermal burns require immediate medical attention. Cold material: Wash with plenty of soap and water.

Inhalation
If affected by fumes from heated material, remove from source of exposure and move the affected person into fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion
Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

5. Fire-fighting measures

Flammability of the product
May be combustible at high temperature.

Extinguishing media
In case of fire, use water spray (fog), foam or dry chemical.

Suitable
Do not use water jet.

Not suitable
High dust concentrations have a potential for combustion or explosion.

Special exposure hazards
Decomposition products may include the following materials: carbon dioxide, carbon monoxide. May also contain low levels of aldehydes, ketones, organic acids or hydrocarbons.

Hazardous thermal decomposition products

Special protective equipment for fire-fighters
Firefighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

6. Accidental release measures

Personal precautions
No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Avoid creating dusty conditions and prevent wind dispersal.

Methods for cleaning up

Small spill
Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill
Contact emergency personnel. To avoid fire, eliminate ignition sources. Granules spilled on the floor can cause slipping. Fine dust clouds may form explosive mixtures with air. Do not touch or walk through spilled material. Personnel should wear protective clothing. Chemical/Dust Goggles Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and storage

Handling
There is a risk of being splashed with molten materials. Thermal burns are the most common injury caused while processing molten material. Do not inhale fumes or vapor from molten product. Use adequate ventilation.

When handling hot material, wear heat resistant protective gloves, clothing and face shield that are able to withstand the temperature of the heated product. Pneumatic conveying of powder and pellets can generate large static electrical charges. Electrical discharge in presence of air can cause an explosion. Earth all equipment.

High dust concentrations have a potential for combustion or explosion. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material.
7. Handling and storage

Storage
Keep container closed. Keep container in a cool, well-ventilated area. Keep away from
heat and direct sunlight.

The main hazards are related to pallet stock slippage and forklift truck maneuvers, which
can cause injury to personnel. It is highly recommended that adequate procedures
covering storage handling of pallets are established and maintained. These procedures
must be kept up to date and regularly audited. In most cases, best practice is to stack
pallets no more than 2 high. However, facilities responsible for storing the material
should perform a site specific risk assessment to determine whether pallets can be
stacked safely.

8. Exposure controls/personal protection

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLYETHYLENE ETHENE-HEXENE-1 COPOLYMER or POLYETHYLENE ETHENE-BUTENE-1 COPOLYMER</td>
<td>ACGIH TLV (United States).</td>
</tr>
<tr>
<td>Ethylene-Hexene-1 Copolymer (Pure)</td>
<td>TWA: 3 mg/m³ Form: Respirable fraction</td>
</tr>
<tr>
<td>Polyethylene-Butene Copolymer (Pure)</td>
<td>TWA: 10 mg/m³</td>
</tr>
<tr>
<td></td>
<td>ACGIH TLV (United States).</td>
</tr>
<tr>
<td></td>
<td>TWA: 10 mg/m³ 8 hour(s). Form: Inhalable</td>
</tr>
<tr>
<td></td>
<td>TWA: 3 mg/m³ 8 hour(s). Form: Respirable fraction</td>
</tr>
</tbody>
</table>

Engineering measures
Use process enclosures, local exhaust ventilation or other engineering controls to keep
worker exposure to airborne contaminants below any recommended or statutory limits. If
user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local
exhaust ventilation or other engineering controls to keep worker exposure to airborne
contaminants below any recommended or statutory limits.

Hygiene measures
Wash hands, forearms and face thoroughly after handling chemical products, before
eating, smoking and using the lavatory and at the end of the working period.

Personal protection

Respiratory
Product processing, heat sealing of film, or operations involving the use of wires or
blades heated above 300°C may produce dust, vapor or fumes. To minimize risk of
overexposure to dust, vapor or fumes it is recommended that a local exhaust system is
placed above the equipment, and that the working area is properly ventilated. If
ventilation is inadequate, use certified respirator that will protect against dust/mist.

Hands
Hot material: Wear heat-resistant protective gloves that are able to withstand the
temperature of heated product.
Cold material: None required; however, use of gloves is good industrial practice.

Eyes
Safety glasses with side shields. Use dust goggles if high dust concentration is
generated.

Skin
Hot material: Wear heat-resistant protective gloves that are able to withstand the
temperature of molten product.
Cold material: None required; however, use of protective clothing is good industrial
practice.

9. Physical and chemical properties

| Physical state | Granular solid. Pellets. Powder or flakes. |
| Flash point | Closed cup: >343°C (>649.4°F) |
| Auto-ignition temperature | 390°C (734°F) |
| Color | White, translucent or colorless, OR
| | Yellow. |
| Odor | Odorless. |
| Melting/freezing point | 110 to 135°C (230 to 275°F) |
10. Stability and reactivity

- **Chemical stability**: The product is stable.
- **Hazardous polymerization**: Will not occur.
- **Conditions to avoid**: Stable under recommended storage and handling conditions (see section 7). If heated to more than 300°C, the product may form vapors or fumes which could cause irritation of the respiratory tract, coughing, and shortness of breath. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material.
- **Materials to avoid**: No specific data.
- **Hazardous decomposition products**: These products are carbon oxides (CO, CO₂). May also contain low levels of aldehydes, ketones, organic acids or hydrocarbons.
- **Incompatibility with various substances**: None identified.

11. Toxicological information

- **Carcinogenicity**: No component of this product at levels greater than 0.1% is identified as a carcinogen by ACGIH or International Agency for Research on Cancer (IARC).
- **Mutagenicity**: No component of this product at levels greater than or equal to 0.1% is classified by established regulatory criteria as a mutagen.
- **Teratogenicity**: No component of this product at levels greater than or equal to 0.1% is classified by established regulatory criteria as teratogenic or embryotoxic.
- **Fertility effects**: No component of this product at levels greater than or equal to 0.1% is classified by established regulatory criteria as a reproductive toxin.

12. Ecological information

- **Environmental effects**: No testing has been performed by the manufacturer.
- **Other adverse effects**: No known significant effects or critical hazards.

13. Disposal considerations

- **Waste disposal**: Recycle to process, if possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Comply with all local, regional, and national laws pertaining to waste management. Use only approved transporters, recyclers, treatment, storage or disposal facilities. Dispose of in accordance with all applicable local and national regulations.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

Not classified as hazardous for transport (IMO, IATA/ICAO, DOT, TDG, Mexico).

---

**Product name**: POLYETHYLENE ETHENE-HEXENE-1 COPOLYMER or POLYETHYLENE ETHENE-BUTENE-1 COPOLYMER  
**Product code**: 0000002026 (NAP)  
**Date of issue**: 16 May 2012  
**Language**: ENGLISH
15. Regulatory information

HCS Classification
Not regulated.

U.S. Federal regulations
TSCA 8(a) IUR Exempt/Partial exemption: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: No products were found.
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found.
Clean Air Act (CAA) 112 accidental release prevention: No products were found.

State regulations
Connecticut Carcinogen Reporting: None of the components are listed.
Connecticut Hazardous Material Survey: None of the components are listed.
Florida substances: None of the components are listed.
Illinois Chemical Safety Act: None of the components are listed.
Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.
Louisiana Reporting: None of the components are listed.
Louisiana Spill: None of the components are listed.
Massachusetts Spill: None of the components are listed.
Massachusetts Substances: None of the components are listed.
Michigan Critical Material: None of the components are listed.
Minnesota Hazardous Substances: None of the components are listed.
New Jersey Hazardous Substances: None of the components are listed.
New Jersey Spill: None of the components are listed.
New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.
New York Acutely Hazardous Substances: None of the components are listed.
New York Toxic Chemical Release Reporting: None of the components are listed.
Pennsylvania RTK Hazardous Substances: None of the components are listed.
Rhode Island Hazardous Substances: None of the components are listed.

United States inventory (TSCA 8b)
All components are listed or exempted.

WHMIS (Canada)
Not controlled under WHMIS (Canada).

International regulations

International lists
Please go to RPS online at www.ineos-op.com

16. Other information

Label requirements
This product has been evaluated and does not require any hazard warning on the label under established regulatory criteria.
Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat.

Hazardous Material Information System (U.S.A.)
16. Other information

<table>
<thead>
<tr>
<th>Physical hazards</th>
<th>Flammability</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Date of issue: 5/16/2012.
Version: 0.37
Prepared by: Product Stewardship

Indicates information that has changed from previously issued version.

Notice to reader
The information in this Material Safety Data Sheet is based upon data considered to be accurate at the time of its preparation. This information in no way modifies, amends, enlarges, or creates any specification or warranty, and ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY EXCLUDED. This information is a recommendation for safe handling, use, processing, storage, transportation, disposal, and release and INEOS USA LLC shall not be responsible for any damage or injury resulting from abnormal use, from any failure to follow appropriate practices, or from hazards inherent in the nature of the product and/or material. This information relates only to the specific product and/or material designated and may not be valid for such product and/or material used in combination with any other product and/or material or in any process, unless otherwise specified.