



HIGH DENSITY POLYETHYLENE BAPOLENE[®] 2035 BLOW MOLDING

Description: Bapolene[®] 2035 is a high density polyethylene copolymer resin. Product offers a balanced combination of superior top-load strength and ESCR properties. It complies with FDA 21CFR 177.1520¹.

Application: General purpose blow molding, household chemical and cosmetic containers.

Values reported are typical and should not be interpreted as specification.

All data are based on compression-molded plaques.

| Resin | Nominal Value | ASTM |
|-----------------------------------|---------------|--------|
| Melt Index ² g/10 min. | 0.35 | D-1238 |
| Density, g/cm ³ | 0.955 | D-4883 |

| GENERAL PROPERTIES | | Nominal Value | ASTM |
|---|-----|---------------|--------|
| Tensile Strength @ Yld | psi | 4,000 | D-638 |
| | MPa | 28 | |
| Flexural Modulus ^{Tangent} | psi | 185,000 | D-638 |
| | MPa | 1,276 | |
| Elongation @ Brk | % | > 500 | D-638 |
| ESCR ^{F50, 100% IGEPAL, Condition B} | h | 25 | D-1693 |

¹ End use and/or migration limitations may apply.

² 190°C / 2,160g

THIS PRODUCT DATA SHEET EFFECTIVE JUNE 2015 SUPERSEDES ALL DATA PREVIOUSLY PUBLISHED

SAFETY DATA SHEET

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

SECTION 1

IDENTIFICATION

Product Name: Polyethylene (High Density Polyethylene)

Covers the following grade(s): **Bapolene 2035**

Product Type: Pellet/Flake

Use: Manufacture of various plastics articles.

SECTION 2

HAZARDS IDENTIFICATION

OSHA Classification of the substance or mixture (GHS-US):

- Combustible Dust

Label Elements

- Signal word (GHS-US): Warning
- Hazard Statement(s): If small particles are generated during further processing, handling or by other means, may form combustible dust concentrations in air.

Acute Toxicity

No additional information available.

Additional Information

Keep container tightly closed and away from heat, hot surfaces, sparks, open flames and other ignition sources. Processing the polymer at high temperatures may form vapors that irritate the eyes and respiratory tract.

No smoking. Prevent dust accumulation. Airborne clouds of fine dust may form explosive mixtures with air. Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat.

Spilled pellets may create a slipping hazard. Sweep up spillage and dispose of properly.

SDS - HDPE - Bapolene 2035 - June 2015

SECTION 3**COMPOSITION / INFORMATION ON INGREDIENTS**

Substance: NA

Mixture:

| Ingredient Name | CAS # | % Wt. |
|--------------------------|--------------------------|-------|
| Ethylene-1-butene | 25087-34-7 | ≤ 100 |
| Ethylene-1-hexene-1 | 25213-02-9 | ≤ 100 |
| Ethylene-1-octene | 26221-73-8 | ≤ 100 |
| Polyethylene Homopolymer | 9002-88-4 | ≤ 100 |
| Additives | Proprietary/Trade Secret | NA |

** Compositions are typical values not part of any specification(s).*

To the best of our knowledge, 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 and require reporting in this section.

SECTION 4**FIRST AID MEASURES****Description of First Aid Measures****Eye Contact**

Flush eyes with clean, cold, low-pressure running water for at least 15 minutes. Seek immediate medical attention.

Skin Contact

If molten material contacts skin, immediately flush skin with large amounts of cold water. No attempt should be made to peel polymer from the skin or to remove clothing attached with molten material. Thermal burns require immediate medical attention.

Inhalation

Remove victim to well-ventilated area. If not breathing, provide artificial respiration by trained personnel. If difficulty breathing, provide give oxygen and seek medical attention.

Ingestion

If swallowed, do not induce vomiting. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately.

Handling and/or processing of this material may generate dust which may cause mechanical irritation of the eyes, skin, nose and throat. High dust concentrations have a potential for combustion or explosion.

Most Important Symptoms/Effects, Acute and Delayed**Skin**

No significant irritation expected. Heated material can cause serious thermal burns. At high process temperatures, fumes may cause irritation of the nose and throat.

Eyes

Possible mechanical irritation may manifest itself as local redness with possible discomfort. Heated material can cause thermal burns. When heated, vapors formed may irritate eyes. Material is dusty and may scratch surface of eye.

Inhalation

Exposure to high concentration of airborne particles may cause upper respiratory tract irritation. If heated, the product may form fumes which could cause irritation of the respiratory tract, coughing, nausea, and shortness of breath.

Ingestion

May cause choking, diarrhea, nausea, or discomfort in the abdominal region.

Indication of any immediate medical attention and special treatment

No additional information is available.

SECTION 5**FIRE FIGHTING MEASURES****Suitable Extinguishing Media**

High dust concentrations have potential for combustion or explosion. In case of fire, use water spray (fog), foam, dry chemical or CO₂.

Unsuitable Extinguishing Media

Do *not* use water jet/stream.

Specific Hazards Arising from the Chemical

Fire- May be combustible at high temperature.

Explosion Hazards

Material is not explosive as defined by established regulatory criteria. May ignite if ignition source is available. Potential dust explosion hazard.

Hazardous Thermal Decomposition Products

Flammability

Products of Combustion

Combustion can produce carbon dioxide (CO₂), carbon monoxide (CO), hydrocarbons, aldehydes, organic vapors and other harmful products. Possible black smoke and soot.

Firefighting Protection

Wear NIOSH-approved positive pressure, self-contained breathing apparatus (SCBA) and full protective gear. Engage fire from a protected location. Avoid raising powdered materials into airborne dust, creating an explosion hazard. Apply aqueous extinguishing media carefully to prevent frothing/steam explosion. Prevent fire-fighting water from entering environment

May re-ignite after fire has been extinguished.

SECTION 6

ACCIDENTAL RELEASES MEASURES

Personal Precautions, Protective Equipment and Emergency procedures

Eliminate all ignition sources and contain spill. 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. Use suitable protective equipment.

Environmental and Clean-Up Methods

If emergency personnel are unavailable, vacuum or carefully collect spilled material(s), and place in an appropriate container for disposal. Recovered material should be packaged, labeled, transported, and disposed of in conformance to consistent with all applicable laws and regulations. If heated material is spilled, allow to cool before proceeding with cleanup methods. Avoid creating dusty conditions and prevent wind dispersal. Avoid contact of spilled material with soil and prevent runoff from entering sewers and waterways.

Personal Protection

Personnel should wear proper safety equipment.

SECTION 7

HANDLING AND STORAGE

Handling

Do not smoke, drink or eat when storing, handling or using this product. Always wash hands after handling the product.

Keep away from open flame or sources of ignition. There is a risk of being splashed with molten materials. At high temperatures, potentially toxic/irritating fumes may result from heated material - do not inhale fumes or vapor from molten product. Use with adequate ventilation. When handling hot material, wear protective gloves, clothing and face shield that are able to withstand the temperature of the molten product. After handling, always wash hands thoroughly with soap and water. Pneumatic conveying and other mechanical handling can generate combustible dust and static electrical charges. 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. Electrostatic charges may be generated when emptying sacks. It is recommended that sacks are emptied away from explosive environments.

Storage

Keep container dry, tightly closed, and stored in a well-ventilated area. Avoid contact or proximity to strong oxidizing agents. Pallet stock slippage and forklift truck maneuvers can cause injury. It is recommended that adequate procedures covering storage handling of pallets are implemented and based on good manufacturing practices.

Store at room temperature and protect from heat and direct sunlight. Store in a dry, cool, well-ventilated area. Containers that have been opened must be properly resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate procedures to avoid environmental contamination

Incompatible materials: strong oxidizing agents.

SECTION 8**EXPOSURE CONTROLS/PERSONAL PROTECTION**

Occupational Exposure Limits

| Ingredients | Type | Limit Value | Basis |
|---|------|-----------------------------------|-----------------|
| Materials that can be formed when handling this product: Non-specified (inert or nuisance) dust | TWA | 10 mg/m ³ (Inhalable) | US (ACGIH) 2005 |
| Materials that can be formed when handling this product: Non-specified (inert or nuisance) dust | TWA | 3 mg/m ³ (Respirable) | US (ACGIH) 2005 |
| Materials that can be formed when handling this product: Non-specified (inert or nuisance) dust | TWA | 15 mg/m ³ (Total Dust) | US (OSHA) 2005 |
| Materials that can be formed when handling this product: Non-specified (inert or nuisance) dust | TWA | 5 mg/m ³ (Respirable) | US (OSHA) 2005 |

Control Measures

Use enclosures around process, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If high concentrations of airborne matter or fumes are generated, use ventilation to ensure levels are kept below the exposure limit. Clothing and shoes should be dusted before re-used.

Personal protection**Eyes**

Safety glasses with side shields are required as minimum requirements. Use full-face respirator if a high dust concentration is generated.

Skin

Minimize contact. The use of heat-resistant protective gloves and clothing and face shield is good industrial practice and recommended.

Respiratory

Product processing may produce dust, vapor or fumes. To minimize risk of overexposure to dust, vapor or fumes it is recommended to use process enclosures and a local exhaust system, and that the working area is properly ventilated. If ventilation is inadequate, use certified respirator that will protect against dust/mist. Do not consume food in the work area.

Hands

Use of heat-resistant protective gloves, clothing and face shield capable of withstanding temperature of molten product, is good industrial practice. The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves. Since even the best chemically resistant glove will break down after repeated chemical exposures, gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Consult your local authorities, supervisor or standard operating procedures for special handling directions and acceptable exposure limits.

SECTION 9**PHYSICAL AND CHEMICAL PROPERTIES**

| Appearance | |
|--|---|
| Physical state/form | Solid (pellets or powder) |
| Color | Opaque / Translucent / White |
| Odor | Mild to none |
| Safety Data | |
| Lower explosion limit | No data available |
| Upper explosion limit | No data available |
| Flammability (solid, gas) | Polymer will burn but does not easily ignite. |
| Oxidizing properties | Not considered an oxidizing agent. |
| Autoignition temperature | > 572 °F (300 °C) |
| Decomposition temperature | Not determined |
| pH | No data available |
| Approximate melting point range | 122 - 338 °F (50 - 170 °C) |
| Boiling point/boiling range | No data available |
| Flash point | No data available |
| Vapor pressure | Not applicable |
| Density | < 1 g/cm ³ |
| Water solubility | Negligible |
| Partition coefficient: n-octanol/water | No data available |
| Viscosity | No data available |
| Relative vapor density | No data available |
| Evaporation rate | No data available |

SECTION 10**STABILITY AND REACTIVITY****Reactivity**

No known reactivity hazards.

Chemical Stability

Stable under appropriate handling and storage conditions.

Conditions to avoid

Excessive temperatures, strong oxidizers, and all possible sources of ignition (spark or flame), heat, and direct sunlight. Avoid dust formation.

Incompatibility

Strong oxidizing materials, fluorine, halogens, benzene, aromatic and chlorinated hydrocarbons, nitric and perchloric acids and others.

Decomposition products (*not expected to decompose under normal conditions*)

Combustion can produce carbon monoxide and/or carbon dioxide and other toxic products (fumes). Decomposition can yield traces amount of hydrocarbons. Degradation products may include, among others, aldehydes, alcohols, ketones, and organic acids.

Hazardous polymerization is not expected to occur.

SECTION 11

TOXOLOGICAL INFORMATION

Likely Routes of Exposure: oral, dermal, inhalation, ingestion.

Acute toxicity: Not classified.

| Acute Toxicity (Listed for components where information is available) | | | |
|---|---------------------------|--------------|-----------------------------------|
| PE | LD ₅₀ oral rat | > 8000 mg/kg | Based on polyethylene homopolymer |
| Polyethylene (25213-02-9 or 25087-34-7 or 9002-88-4) | LD ₅₀ oral rat | > 8000 mg/kg | Based on polyethylene homopolymer |

- Skin corrosion/irritation: Not classified
- Acute oral toxicity: Not classified
- Acute inhalation toxicity: Not classified
- Acute dermal toxicity: Not classified
- Serious eye damage/irritation: Not classified. Mechanical irritation is possible.
- Respiratory or skin sensitization: Not classified
- Carcinogenicity: IARC Group 3 - Not classifiable
- Germ cell mutagenicity: Not classified
- Reproductive toxicity: Not classified
- Specific target organ toxicity (single exposure): Not classified
- Specific target organ toxicity (repeated exposure): Not classified
- Aspiration hazard: Not classified

This product is not considered a “Hazardous Chemical” as defined by the OSHA Hazard Communication Standard.

Other Information

During thermal processing polyolefins can release vapors and gases (aldehydes, ketones and organic acids) which are irritating to the mucous membranes of the eyes, mouth, throat, and lungs. Generally these irritant effects are all transitory. However, prolonged exposure to irritating off-gases can lead to pulmonary edema. Formaldehyde (an aldehyde) has been classified as a carcinogen based on animal data and limited epidemiological evidence.

SECTION 12

ECOLOGICAL INFORMATION

Ecotoxicology Assessment

The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment. Wildlife may ingest plastic pellets or bags. Although not toxic, such materials may physically obstruct the digestive system, causing starvation or death.

No testing has been performed by the manufacturer(s).

Acute aquatic toxicity: Not classified

Chronic aquatic toxicity: Not classified

Persistence and degradability

Biodegradability: Not inherently biodegradable.

Bioaccumulative potential: This material is not expected to bioaccumulate.

Mobility

This product is expected to float on water, and is not likely to move rapidly with surface or groundwater flows due to its low water solubility. This material is insoluble in water.

Results of PBT and vPvB assessment: Not applicable.

Other Information

This material is not volatile and insoluble in water. Avoid release to the environment.

SECTION 13

DISPOSAL CONSIDERATIONS

The information in this SDS pertains only to the product as shipped.

Waste Information

Avoid contact of spilled material and/or runoff with soil and surface waterways. Consult an environmental professional to determine if local, regional or national regulations would classify spilled or contaminated materials as hazardous waste. Use only approved transporters, recyclers, and treatment, storage or disposal facilities. Dispose of in accordance with all applicable Federal, State and local control regulations. Recycle the material to fullest extent possible.

Consult your local, regional and federal (EPA) authorities for all pertinent regulations and procedures.

SECTION 14

TRANSPORT INFORMATION

Polyethylene, other than liquid, is not regulated.

| Regulatory Authority | Shipping Description |
|----------------------|--|
| DOT (USA) | Not regulated as a hazardous material or dangerous goods for transportation. |
| IATA | Not regulated as a hazardous material or dangerous goods for transportation. |
| IMDG | Not regulated as a hazardous material or dangerous goods for transportation. |

This information is not intended to convey all specific regulatory or operational requirements/ information relating to this product. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

SECTION 15

REGULATORY INFORMATION

TSCA

All components of this product are listed or exempted from listing on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

SARA 311/312 Hazard Classification

Fire

SECTION 16

OTHER INFORMATION

Label requirements

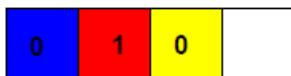
This product has been evaluated and does not require any hazard warning on the label under established regulatory criteria.

HMIS

Health Hazard: 0

Flammability: 1

Physical hazards: 0

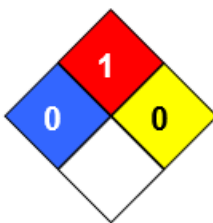


NFPA

Health: 0

Fire Hazard: 1

Reactivity: 0



Rating Scale Information

HMIS: (0 = minimal hazard; 4 = severe hazard)

NFPA: (0 = minimal hazard; 4 = severe hazard)