

## SAFETY DATA SHEET

Product: High density polyethylene Last revision date: January/11/2018 Revision: 06

### SECTION 1. IDENTIFICATION

GHS product identifier : High Density Polyethylene - Homopolymer and Copolymer.

Products : HDB0763, HDB0355, HDB1052, HDB6050, HDB6050U1, HDB0358, HDF1050, HDF1050XP, HDP0353, HDP3049LS, HDE0960, HDI4553, HDI2061, HDI0861U1, HDI0661U1, HDS0255, HDI0653U1, HDG0739

Other means of identification : HD-Series, Experimental formulations PE, PE Homopolymer, PE Copolymer.

Product type : Pellets

#### Recommended use of the chemical and restrictions to use

Product use : Industrial applications.

Area of application : Industrial applications.

#### Supplier's details

Company Name : Braskem IDESA

Address : **Blvd. Manuel Ávila Camacho #36 piso 24**  
Col. Lomas de Chapultepec Del. Miguel Hidalgo  
CP 11000 México DF - México

Company telephone number : 52(55) 6234-1100  
Additional regulatory information may be available through our website:  
[www.braskem.com/site.aspx/braskem-mexico](http://www.braskem.com/site.aspx/braskem-mexico)

Email address of person responsible for this SDS : [product.safety@braskem.com](mailto:product.safety@braskem.com)

Emergency telephone : 229 454 6111  
Available 24 hours 7 days a week

### SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture : Classified as non-hazardous.

#### GHS label elements

Signal word : Attention

#### Precautionary statements

Prevention : NA

Response : NA

Storage : NA

Disposal : NA

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- Supplemental label elements : Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Prevent dust accumulation.
- Hazards not otherwise classified : **COMBUSTIBLE DUST.** If small particles are generated during further processing or handling or by other means, combustible dust concentrations in air may form.
- Handling and/or processing of this material may generate a dust, which can cause mechanical irritation of the eyes, skin, nose and throat.
- In the event that combustible dust is generated, the hazard is posed only by the size of the particle not its chemical content because all monomers, additives and pigment are totally encapsulated within the resin and cannot be released in pureform.

No ingredient(s) of unknown acute toxicity is intentionally used in this product.

### SECTION 3. COMPOSITION AND INFORMATION ON INGREDIENTS

- Substance : Polymer
- Common name and synonyms : HD-Series, Experimental formulations PE, PE Homopolymer, PE Copolymer. For product specific information please refer to our technical and regulatory documents on our website: [www.braskem.com/site.aspx/braskem-mexico](http://www.braskem.com/site.aspx/braskem-mexico) or contact your Braskem IDESA Account Representative.

#### CAS number or another identifiers

CAS Number	Component	CAS Number
	Homopolymer polyethylene	9002-88-4
	Polyethylene copolymer of ethylene and 1-Hexene <sup>1</sup>	25213-02-9

<sup>1</sup> Hexene content <5%

- Components contributing to the classification of the substance : 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 hence require reporting in this section.

### SECTION 4. FIRST AID MEASURES

#### Description of necessary first aid measures

- Inhalation : There is no inhalation risk at room temperature. In case of inhalation of dust or fumes at high temperatures, move the affected person into fresh air. Monitor respiratory function, if not breathing give artificial respiration. Get medical attention.
- Ingestion : Wash out the mouth of the affected person with plenty of water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick, vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be

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kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, belt or waistband.

Skin contact : There are no health risks from skin contact at room temperature, it is recommended to wash with soap and water. In case of contact with hot product, flush skin immediately with large amounts of 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.

Eyes contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove contact lenses. Continue to rinse for at least 15 minutes. Get medical attention if irritation is occurs.

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

#### Potencial acute health

Inhalation : Exposure to fine particle concentrations above statutory or recommended exposure limits may cause irritation to the nose, throat and lungs.

Ingestion : No known effects or critical hazards.

Contact with skin : No known effects or critical hazards.

Contact with eyes : Exposure to fine particle concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

### Signs and symptoms due to overexposure

Inhalation : Adverse symptoms may include the following: respiratory tract irritation and coughing.

Ingestion : ND

Contact with skin : ND

Contact with eyes : Adverse symptoms may include the following: irritation and redness

### Indication of immediate medical attention and special treatment needed, if necessary

First-aiders protection and notes to physician : Avoid contact with the product to help the victim. Keep the victim at rest. Symptomatic treatment must include, specially, support measures as the correction of electrolyte, metabolic disorders, in addition to respiratory assistance.

## SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing means : Compatible with CO<sub>2</sub>, dry chemical powder, foam, water fog.

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- Unsuitable extinguishing means : Water jet
- Specific hazards : At high temperatures, it may be combustible.
- Hazardous thermal decomposition products : Decomposition products may include the following materials:  
Carbon dioxide  
Carbon monoxide  
Other irritating substances
- Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons near the incident where the fire occurred. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Personal protective equipment for firefighters : Firefighters must wear appropriate personal protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

#### Personal precautions, protective equipment and emergency procedures

- Indications for non-emergency personnel : 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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- Advice for emergency team : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also information in "For non-emergency personnel".
- Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

#### Methods and materials for containment and cleaning up

- Small spill : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Large spill : The pellets spilled on the floor can cause slipping. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Prevent entry into sewers, watercourses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste

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disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.

### SECTION 7. HANDLING AND STORAGE

#### Precautions for safe handling

- |   |   |
|---|---|
| Protective measures                         | : Use the appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin, and clothing. Avoid breathing dust. Avoid creating dust when handling and avoid all possible sources of ignition (spark or flame). Avoid dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Electrical equipment and lighting should be protected with appropriate standards to prevent dust from coming into contact with hot surfaces, sparks or other sources of ignition. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous.   |
| Information concerning Occupational Hygiene | : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking or smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. Light hydrocarbon vapors can build up in the headspace of tanks. These risks may cause flammability or explosion hazards even at temperatures below the normal flash point (note: flash point must not be regarded as a reliable indicator of the potential flammability of the vapor in the tank headspace). The headspace of the deposits should be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, sampling from storage tanks. There is a risk of being splashed with molten materials. Heated material can cause thermal burns. Do not breathe gas, fumes or vapors. When handling hot material, use heat resistant protective gloves, clothing and face shield that are able to withstand the temperature of the heated product. Pneumatic conveying of powder and granules can generate large static electrical charges. Electrical discharge in the presence of air can cause an explosion. Earth all equipment. Electrical equipment and lighting should be protected to appropriate standards to prevent dust from coming into contact with hot surfaces, sparks or other ignition sources. Fine dust clouds may form explosive mixtures with air. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. |

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Conditions for safe storage, including incompatibilities : Store according to local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate safety containment to prevent environmental contamination.

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.

### SECTION 8. EXPOSURE CONTROL AND PERSONAL PROTECTION

#### Control parameters

#### Limits and values

Components	Type	Limit Value	Organización	Forma
Materials that can be formed when handling this product: Particulates Not Otherwise Specified	TWA	10 mg/m <sup>3</sup> 8 hours	ACGIH TLV (United States)	Inhalable particles
Materials that can be formed when handling this product: Particulates Not Otherwise Specified	TWA	3 mg/m <sup>3</sup> 8 hours	ACGIH TLV (United States)	Respirable fraction
Materials that can be formed when handling this product: Particulates Not Otherwise Specified	TWA	5 mg/m <sup>3</sup> 8 hours	OSHA PEL (United States)	Respirable fraction
Materials that can be formed when handling this product: Particulates Not Otherwise Specified	TWA	15 mg/m <sup>3</sup> 8 hours	OSHA PEL (United States)	Total Powder

Engineering appropriate control : Use only with adequate ventilation. 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. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications

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to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

Eye and face protection : Safety glasses with side shields: If operating conditions cause high dust concentrations, wear goggles. Avoid wearing contact lenses when handling this product.

Skin protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties.

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Suitable footwear and any other additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When handling hot material, use heat resistant gloves, clothing and face shield able to withstand the temperature of the heated product.

Cold material: None required. However, use of adequate ventilation is a good industrial practice.

Respiratory protection : Use a properly filter respirator complying with an approved standard of a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Thermal risk : When handling hot material, use heat resistant gloves, full suit with ventilation and air supply or heat-resistant suit

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. Ensure that eyewash stations and safety showers are located close to the workplace.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : Solid (Pellets)

Color : Translucent / white

Odor : ND

Odor threshold : ND

pH : ND

Melting point/range : 110 – 167 °C



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Freezing point/range	: ND
Boiling point/range	: ND
Flash Point	: ND
Evaporation Rate	: ND
Flammability	: ND
Explosiveness Limit	: ND
Note: Minimum explosive concentration of polymer powder varies depending on the distribution and size of particles.	
Vapor pressure	: ND
Vapor density	: ND
Relative density	: 0.940 – 0.970 g/cm <sup>3</sup>
Solubility	: Insoluble in water
Partition coefficient n-octanol / water	: ND
Auto-ignition temperature	: >340 °C
Decomposition temperature	: ND
Viscosity	: ND

### SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to be avoided	: If heated to more than 300°C, the product may form vapors or fumes which could cause respiratory tract irritation, coughing and shortness of breath. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material.
Incompatible materials and substances	: Fluorine, strong acids, strong oxidants, chlorinated solvents and aromatics.



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Dangerous decomposition products : Burning can produce carbon monoxide and/or carbon dioxide and other harmful products.

### SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity : Non-toxic product.  
Corrosion / Skin irritation : Not irritating under normal conditions.  
Serious eye damage /irritation : Not irritating under normal conditions.  
Respiratory or skin sensitization : Not irritating under normal conditions.  
Germ cell mutagenicity : No mutagenic effects in germ cells are known.  
Carcinogenicity : No carcinogenic effects known.  
Reproductive toxicity : Effects of reproductive toxicity are unknown.  
STOT - single exposure : In powder form, it can cause respiratory irritation with coughing and sneezing.  
STOT - repeated exposure : Effects of repeated exposure are not known  
Aspiration hazard : The effects of aspiration are not known

### SECTION 12. ECOLOGICAL INFORMATION

#### Ecotoxicity

Conclusion/Summary : It is possible that wildlife ingest product, although not toxic, such materials can physically block the digestive system, causing hunger and death.  
Persistence and degradability: : High persistence and slow decomposition is expected.  
Bioaccumulation potential : Moderate to high potential for bioaccumulation is expected.  
Mobility in soil : This product is insoluble in water and is nonvolatile  
Other adverse effects : No significant effects or critical hazards known

### SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods : Waste generation should be avoided or minimized whenever possible. Disposal of this product, and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and the requirements of local authorities. Remove leftovers and non-recyclable

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products via a licensed contractor. Waste should not be disposed to the sewer if untreated unless fully compliant with the requirements of all authorities with jurisdiction.

Incineration or landfill should only be considered only when recycling is not feasible. This material and its container must be disposed of safely. Care should be taken when handling emptied containers that have not been cleaned or rinsed.

Empty containers or coatings may retain some product residues. Avoid dispersal of spilled material and contact with soil, waterways, drains and sewers.

### SECTION 14. TRANSPORT INFORMATION

National and international regulations

UN Number	DOT Classification	IMDG	IATA
Proper UN shipping name	Not regulated	Not regulated	Not regulated
Level of risk for transport (ES)	-	-	-
Packing Group	-	-	-
Environmental Hazards	-	-	-
Additional Information	-	-	-

-: Not applicable

Transport in bulk : ND  
according to Annex  
II of MARPOL  
73/78 Agreement  
and the IBC Code

Specific precautions to the user : Transport within users' premises: always transport in closed containers that are upright and in secure position. Ensure that persons transporting the product know what to do in case of an accident or spill.

Land : UN - "United Nations"  
Recommendations on the TRANSPORT OF DANGEROUS GOODS. Model  
Regulations  
NOM-012-SCT2-2014 Regulation on weight, dimensions and capacity.

Maritime : IMO – International Maritime Organization  
International Maritime Dangerous Goods Code (IMDG Code)

Air : IATA - International Air Transport Association  
Dangerous Goods Regulation (DGR)

Transport in bulk according to Annex : Refer to regulations:

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II of MARPOL  
73/78 Agreement  
and the IBC Code

International Maritime Organization. MARPOL: items, protocols, annexes, unified interpretations from the International Convention for the Prevention of Pollution from Ships, 1973, as amended by the Protocol of 1978, consolidated edition. IMO, London, 2006.

#### SECTION 15. REGULATORY INFORMATION

For information regarding regulatory issues and global inventory, please contact:  
[serviciostecnicos@braskem.com](mailto:serviciostecnicos@braskem.com)

#### SECTION 16. OTHER INFORMATION

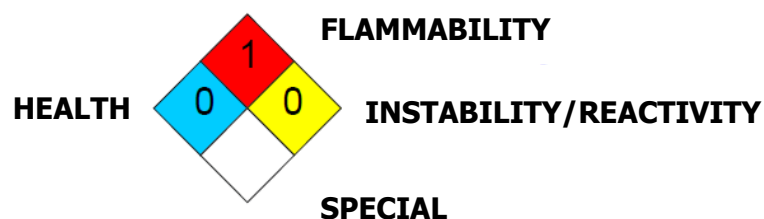
Braskem IDESA warns that any chemical manipulation requires prior knowledge of its dangers by the user. It is up to the user company of the product to promote the training of its employees and contractors with regard to potential risks from handling the product.

#### Hazardous Material Information System (U.S.A.)

Health	0
Flammability	1
Physical hazards	0

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 SDSs 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.)



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reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in

NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

**Sections of the Material Safety Data Sheet have been updated:**

First Edition: November 2015 by Braskem IDESA

Last Revision Date: February 2017

Version: 06

Last version: 05

**Acronyms:**

ACGIH – American Conference of Industrial Hygienists

AIHA – American Industrial Hygiene Association

CAS – Chemical Abstracts Service

NIOSH – National Institute of Occupational Safety and Health

OEL – Occupational Exposure Limit

OSHA – Occupational Safety and Health Administration

PEL – Permissible Exposure Limit

REL – Recommended Exposure Limit

TLV – Threshold Limit Value

TWA – Time Weighted Average

WEEL – Workplace Environmental Exposure Levels

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**Disclaimer**

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This document has been created in order to distribute health, safety and environment data. The information is correct to our knowledge at the date of publication of this SDS.

It is not a specification sheet nor should be construed as a specification. Final determination of suitability of the product for the intended, safely and legally use is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described, we can not guarantee that these are the only hazards that exist.