

SECTION 1: Identification

1.1. Product identifier

Product form	: Substance
Trade name	: LLDPE - Copolymer 1-Hexene
Chemical name	: 1-Hexene, polymer with ethene
EC-No.	: 607-647-3
CAS-No.	: 25213-02-9
Product code	: Flexus 2010, Flexus 2510, Flexus 2511, Flexus 3600, Flexus 7200XP, Flexus 9200, Flexus 9200SPH, Flexus 9211, Flexus 9211SPH, Flexus 9212XP, Flexus 9212XPSPH, Flexus 9213S, HF0131XP, HF2007, HF2207B5, HF2208S3, HF3712, HF3714XP, LL2600U, M2520, ML3601U, ML3602U, Proxess1509XP, Proxess1806S3, Proxess1809, Proxess2606, Proxess3310.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture	: Polymer preparations and compounds
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1.3. Supplier's details

Braskem S.A.
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Camaçari, BA, CEP: 42810-000, Brasil

Braskem S.A.
BR 386 – Rodovia Tabai-Canoas, km 419, Via do Contorno, 850
Triunfo, RS, CEP: 95853-000, Brasil

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Rua Marumbi, 1001
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Rua da União, 756
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E-mail	: productsafety@braskem.com
Telephone	: +55 (11) 3576-9999
Website	: www.braskem.com.br

1.4. Emergency telephone number

Emergency number	: +1 703-741-5970 (International – 24h)
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to the United Nations GHS

Chemical product not classified as hazardous according to United Nations GHS

2.2. Label elements

Labelling according to the United Nations GHS

No labelling applicable

2.3. Other hazards

Other hazards not contributing to the classification	: Spills of this product present a serious slipping hazard, Electrostatic charges may be generated during handling, Dust could be formed as a result of granule degradation by impact or by abrasion during handling, grinding, or conveying operations, Dust from this product may cause respiratory irritation,
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SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to the United Nations GHS
1-Hexene, polymer with ethene (Main constituent)	(CAS-No.) 25213-02-9	<100	Not classified

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Remove victim to fresh air. Allow the victim to rest.
- First-aid measures after skin contact : After contact with the molten product, cool rapidly with cold water. Do not attempt to remove the molten material from the skin. Burns caused by molten material must be treated clinically.
- First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if pain, blinking or redness persists. Consult an eye specialist.
- First-aid measures after ingestion : If swallowed, rinse mouth with water (only if the person is conscious). Obtain emergency medical attention. Immediately call a poison center or doctor/physician. Do not induce vomiting without medical advice. May cause gastrointestinal blockage. Do not give laxatives.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/effects after inhalation : Fumes are irritating to the respiratory system. Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure.
- Symptoms/effects after skin contact : Dust from this product may cause skin irritation. The melted product adheres to the skin and causes burns.
- Symptoms/effects after eye contact : Dusts are mechanical irritants. Dust or fume may cause eye irritation. Effects may include discomfort or pain and redness.
- Symptoms/effects after ingestion : May be harmful if swallowed. Choking hazard.
- Potential Adverse human health effects and symptoms : Not expected to present a significant hazard under anticipated conditions of normal use. Contact with hot material - prevent serious burns.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Incomplete combustion releases dangerous carbon monoxide, carbon dioxide and other toxic gases.
- Explosion hazard : Dust could be formed as a result of granule degradation by impact or by abrasion during handling, grinding, or conveying operations. Potential dust explosion hazard from airborne release.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Avoid creating or spreading dust. Knock down/dilute dust cloud with water spray. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. Avoid direct water stream on molten material. Molten form explodes upon contact with water.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.
- Other information : Avoid raising powdered materials into airborne dust. Dust may form flammable and explosive mixture with air.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid creating or spreading dust. Provide adequate ventilation to minimize dust concentrations. Take precautionary measures against static discharge. Avoid contact with skin, eyes and clothing. Spills of this product present a serious slipping hazard. Do not breathe fume, vapors, dust.

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Minimize generation of dust. Take precautionary measures against static discharge. Use only non-sparking tools. Store away from other materials. Ensure all national/local regulations are observed. Comply with applicable regulations for solid waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Warning: may form combustible (explosive) dust - air mixtures. Prevent dust accumulations to minimise explosion hazard. Obtain special instructions before use. Provide good ventilation in process area to prevent formation of vapor. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Keep container closed when not in use. Avoid raising powdered materials into airborne dust. Avoid contact with skin, eyes and clothing. Do not breathe dust, fume. Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Proper grounding procedures to avoid static electricity should be followed.
- Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Handle in accordance with good industrial hygiene and safety practice.
- Additional hazards when processed : Handling this product may result in electrostatic accumulation. Use proper grounding procedures.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Provide adequate ventilation to minimize dust concentrations. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Proper grounding procedures to avoid static electricity should be followed. Use only non-sparking tools.
- Storage conditions : Keep only in the original container in a cool well ventilated place. Keep container closed when not in use. Keep away from open flames, hot surfaces and sources of ignition.
- Incompatible materials : Strong acids. Strong oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

- Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide local exhaust or general room ventilation to minimize exposure to dust. Provide adequate ventilation to minimize dust concentrations. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use only appropriately classified electrical equipment and powered industrial trucks.
- Other information : Do not eat, drink or smoke during use

8.3. Individual protection measures, such as personal protective equipment (PPE)

Hand protection	: Wear protective gloves to help prevent mechanical injury. For thermal protection from molten material, wear gloves with insulation. Check the resistance to chemicals and heat when choosing protective gloves
Eye protection	: Safety glasses with side shields should be worn when handling pellets. During hot processing, wear tightly fitting goggles and/or face shield when the possibility for eye contact exists
Skin and body protection	: Personal protective clothing should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling. When handling molten material, thermally-protective long sleeved clothing, boots and gloves should be worn
Respiratory protection	: Respirators may be required if respirable and total dust exposure limits are exceeded or irritation is experienced. Wear appropriate mask. The filter class must be suitable for the maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. 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

8.4. Exposure limit values of other components

No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Granular solid.
Color	: White to off-white.
Odor	: No data available
Odor threshold	: No data available
pH	: No data available
pH solution	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Relative evaporation rate (ether=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: 350 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: No data available
Vapor pressure at 50 °C	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Density	: 0.906 - 0.941 g/cm ³
Relative density of saturated gas/air mixture	: No data available
Specific gravity / density	: No data available
Relative gas density	: No data available
Solubility	: Soluble in : Xylene. Water: Insoluble
Log Pow	: No data available
Log Kow	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: No data available
Lower explosive limit (LEL)	: No data available
UEL	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable under normal conditions of use.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Overheating.

10.5. Incompatible materials

Strong acids. Strong oxidizers.

10.6. Hazardous decomposition products

No hazardous decomposition products known at room temperature.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified (Based on available data, the classification criteria are not met)

Acute toxicity (dermal) : Not classified (Based on available data, the classification criteria are not met)

Acute toxicity (inhalation) : Not classified (Based on available data, the classification criteria are not met)

1-Hexene, polymer with ethene (25213-02-9)

LD50 oral rat	>4 g/kg
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Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met)

Serious eye damage/irritation : Not classified (Based on available data, the classification criteria are not met)

Respiratory or skin sensitization : Not classified (Based on available data, the classification criteria are not met)

Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)

Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)

Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met)

STOT-single exposure : Not classified (Based on available data, the classification criteria are not met)

STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met)

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

Potential Adverse human health effects and symptoms : Not expected to present a significant hazard under anticipated conditions of normal use. Contact with hot material - prevent serious burns.

Other information : Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Material in pellet or bead form may mechanically cause adverse effects if ingested by waterfowl or aquatic life.

Hazardous to the aquatic environment, short-term (acute) : Not classified (Based on available data, the classification criteria are not met)

Hazardous to the aquatic environment, long-term (chronic) : Not classified (Based on available data, the classification criteria are not met)

12.2. Persistence and degradability

1-Hexene, polymer with ethene (25213-02-9)

Persistence and degradability	This water-insoluble polymeric solid is expected to be inert in the environment. Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected.
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12.3. Bioaccumulative potential

1-Hexene, polymer with ethene (25213-02-9)

Bioaccumulative potential	Not established.
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12.4. Mobility in soil

1-Hexene, polymer with ethene (25213-02-9)

Mobility in soil	No additional information available
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12.5. Other adverse effects

Ozone	: Not classified (Based on available data, the classification criteria are not met)
Other adverse effects	: No additional information available
Effect on the ozone layer	: No additional information available.
Other information	: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations. Ensure all national/local regulations are observed. Consult an expert on waste disposal or treatment. Return in the shipping container properly labeled with any valve outlet plugs or caps secured and valve protection cap in place to supplier for proper disposal.
Ecology - waste materials	: Avoid release to the environment. Prevent contamination of soil, drains and surface waters.
Additional information	: Do not re-use empty containers. Do not dispose of waste into sewer. Do not remove as household garbage.

SECTION 14: Transport information

In accordance with IMDG / IATA / UN RTDG

UN RTDG	IMDG	IATA
14.1. UN number		
Not regulated for transport		
14.2. Proper Shipping Name		
Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)		
Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable
14.4. Packing group		
Not applicable	Not applicable	Not applicable
14.5. Environmental hazards		
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No
No supplementary information available		

14.6. Special precautions for user

- UN RTDG	No data available
- IMDG	No data available
- IATA	No data available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health, and environmental national regulations specific for the product

For information on regulatory issues and global inventory, contact: productsafety@braskem.com

SECTION 16: Other information

Date of issue	: 11 October 2019
Data sources	: Loli.
Other information	: None.

Braskem - SDS_UN (modified 190221)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. It warns that the handling of any chemical substance requires the previous knowledge of its hazards for the user. It is up to the user of the product company providing this SDS to and promote the training of its employees about possible risks come upon of the product. The information contained herein is not absolute, but only general information on the use of the chemical and indication of safety and security measures.