

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 and No. 453/2010



Lupolen 4021 K RM

Gen. Variant: SDS_GB

Version 1.0

Revision Date 07/31/2014

Print Date 10/05/2015

SDS No.: BE9885

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name	:	Lupolen 4021 K RM
Synonyms	:	Ethylene-1-hexene copolymer, Ethylene-Hexene Copolymer
Substance name	:	1-Hexene, polymer with ethene
Substance No.	:	25213-02-9

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

Use of the Substance/Mixture	:	Manufacture of plastic articles by injection moulding, extrusion or other conversion process.
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2. Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

Classification according to EU Directives 67/548/EEC or 1999/45/EC, as amended

Not a hazardous substance or mixture according to EC-directives 67/548/EEC or 1999/45/EC.

2.2 Label elements

Labeling (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

2.3 Other hazards

If small particles are generated during further processing, handling or by other means, may form combustible dust concentrations in air.

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB).

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3. Composition/information on ingredients**3.2 Mixtures****Ingredients**

Chemical Name	CAS-No. EC-No.	Classification (67/548/EEC)	Classification (REGULATION (EC) No 1272/2008)	Weight %
1-Hexene,polymer with ethene	25213-02-9	Not Classified	Not Classified	> 99.5 %

Contains: Stabilizers

4. First aid measures**4.1 Description of first-aid measures**

- General advice : Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid.
- If inhaled : Remove person to fresh air. If signs/symptoms continue, get medical attention.
In case of excessive inhalation of fumes that may be generated during heating of this material, move the person to fresh air.
Obtain medical attention.
Keep person warm, if necessary give Cardio-Pulmonary Resuscitation (CPR)
- In case of skin contact : If molten material contacts the skin, immediately flush with large amounts of water to cool the affected tissue and polymer.
Do not attempt to peel polymer from skin as this will remove the skin.
Obtain immediate emergency medical attention if burn is deep or extensive.
- In case of eye contact : Flush eyes thoroughly with water for several minutes and seek medical attention if discomfort persists.
: In case of eye contact with molten polymer:
Continuously flush eye(s) with cool running water for at least 15 minutes.
Beyond flushing, DO NOT attempt to remove the material adherent to the eye(s).
Immediately seek medical attention.
- If swallowed : Adverse health effects due to ingestion are not anticipated.

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4.2 Most important symptoms and effects, both acute and delayed

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| Symptoms | : Inhalation of process fumes and vapors may cause soreness in the nose and throat and coughing. |
| Hazards | : Dust contact with the eyes can lead to mechanical irritation. Molten polymer may cause thermal burns. |

4.3 Indication of any immediate medical attention and special treatment needed

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| Treatment | : Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient. |
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5. Fire-fighting measures

5.1 Extinguishing media

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| Suitable extinguishing media | : SMALL FIRE:
Use dry chemical, CO2, or water spray. |
| | : LARGE FIRES:
Use water spray hose nozzles from a safe location. |
| Unsuitable extinguishing media | : None known. |

5.2 Special hazards arising from the substance or mixture

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| Specific hazards during fire fighting | : Keep away from heat and sources of ignition.
In case of fire hazardous decomposition products may be produced such as:
Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke). |
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5.3 Advice for firefighters

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| Special protective equipment for fire-fighters | : Wear approved positive pressure self-contained breathing apparatus and firefighter protective clothing. |
| Further information | : Combustible particulate solid, will decompose under fire conditions.
Calorific Value: 8000 - 11000 kcal/kg
Fight fire from safe distance with hose lines or monitor nozzles.
Heat from fire may melt, decompose polymer, and generate flammable vapors.
Move containers from fire area if it can be done without risk.
Evacuate immediately in the event of opening of storage container pressure relief devices or discoloration of container.
Always stay away from tanks engulfed in fire.
Do not attempt to get on top of storage containers involved in |

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fire.
Cool storage containers with large volumes of water even after fire is out.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Equip responders with proper protection.
Creates dangerous slipping hazard on any hard smooth surface.
Equip emergency responders with proper personal protective equipment (PPE)
Avoid generating dust.
Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).
Potential combustible dust hazard.
Polymer particles create slipping hazard on hard smooth surfaces.

6.2 Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : On land, sweep/shovel into suitable disposal containers or vacuum using equipment which avoids ignition risk.
On water, material is insoluble; collect and contain as any solid.
All recovered material should be packaged, labeled, transported and disposed of or reclaimed in conformance with applicable laws and regulations and in conformance with good engineering practices. Reclaim where possible.

7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Material is in a pellet form.
If converted to small particles during further processing, handling, or by other means, may form combustible dust concentrations in air.
Avoid dust accumulation in enclosed space.
Use dust collection systems designed in accordance with ATEX 95.
Avoid generating dust; fine dust suspended in air and in the presence of an ignition source is a potential dust explosion hazard.

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Static discharge (spark), or other ignition sources, in high dust environments may ignite the dust and result in a dust explosion
Electrostatic charge may build during conveying or handling. Equipment handling polymer should be conductive and grounded (earthed) and bonded.
Metal containers involved in the transfer of this material should be grounded and bonded.
All electrical equipment should conform to applicable electric codes and regulatory requirements for areas handling combustible dusts.
After handling, always wash hands thoroughly with soap and water.
When bringing the material to processing temperatures vapors may develop may condense in the exhaust ventilation. See section 10.

: Refer to ATEX 95 and ATEX 137 and related Harmonized European Standards: EN 1127-1 (Explosive atmospheres – Explosion prevention and protection).

Fire-fighting class : Polymer will burn but does not easily ignite.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in a dry location.
Use good housekeeping practices during storage, transferring and handling. Process enclosures and adequate ventilation should be used to avoid excessive dust accumulation.
Store away from excessive heat and away from strong oxidizing agents.
Keep container closed to prevent contamination.
Take measures to prevent the build up of electrostatic charge.

7.3 Specific end use(s)

: See Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

Occupational Exposure Limits

Ingredients	CAS-No.	Type	Limit Value	Basis	Additional
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				Revision Date	Information
Materials that can be formed when handling this product: Non-specified (inert or nuisance) dust		TWA	10 mg/m3 inhalable	US (ACGIH) 2005	
Materials that can be formed when handling this product: Non-specified (inert or nuisance) dust		TWA	3 mg/m3 respirable	US (ACGIH) 2005	

Consult local authorities for acceptable exposure limits.

8.2 Exposure controls**Engineering measures**

In accordance with ATEX 137, follow the recommendations in EN 1127-1(Explosive atmospheres – Explosion Prevention and protection).

Follow the recommendations in international standard NFPA 654 (as amended and adopted) for equipment used to handle this product.

Engineering controls, i.e. enclosed systems, should be used whenever feasible to maintain exposures below acceptable criteria. When such controls are not feasible, or sufficient to achieve full conformance, other engineering controls such as local exhaust ventilation should be used. Equipment and vessels handling combustible dust from this material should be designed to either prevent dust explosions (inerting) or safely vent dust explosions per ATEX 95 and related Harmonized European Standards.

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).

Personal protective equipment

Respiratory protection : Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Use appropriate respiratory protection where atmosphere exceeds recommended limits.
Where workers could be exposed to dust concentrations above the exposure limit they must use appropriate certified respirators.

Hand protection : Wear gloves that provide thermal protection where there is a

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potential for contact with heated material.

Eye and face protection : Dust service goggles should be worn to prevent mechanical injury or other irritation to eyes due to airborne particles which may result from handling this product.

Skin and body protection : Wear suitable protective clothing.

Hygiene measures : Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the hazards and/or potential hazards that may be encountered during use.
Use good personal hygiene practices.
Wash hands before eating, drinking, smoking, or using toilet facilities.
Take off contaminated clothing and wash before reuse.

Environmental exposure controls

General advice : See section 6.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : Pellets.

Color : Translucent to white

Odor : Slight.

Lower explosion limit : Note: The minimum explosive concentration (MEC) for polymer dust varies according to particle size distribution.

Upper explosion limit : Note: Not applicable.

Flammability (solid, gas) : Polymer will burn but does not easily ignite.

Oxidizing properties : Not considered an oxidizing agent.

Autoignition temperature : > 300 °C

pH : Note: Not applicable.

Melting point/range : 50 - 170 °C

Boiling point/boiling range : Note: Not applicable.

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Vapor pressure	: Note: Not applicable.
Density	: < 1 g/cm ³
Water solubility	: Note: Insoluble.
Partition coefficient: n-octanol/water	: Note: No Data Available.
Viscosity, dynamic	: Note: Not applicable.
Relative vapor density	: Note: Not applicable.
Evaporation rate	: Note: Not applicable.
Explosive properties	: No Data Available.

9.2 Other information

10. Stability and reactivity

10.1 Reactivity

No known reactivity hazards.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Will not occur.

10.4 Conditions to avoid

Conditions to avoid : Avoid contact with strong oxidizers, excessive heat, sparks or open flame.

10.5 Incompatible materials

Materials to avoid : Material may be softened by some hydrocarbons.

10.6 Hazardous decomposition products

Hazardous decomposition products : Not expected to decompose under normal conditions.
 Thermal decomposition : Note: Carbon monoxide, olefinic and paraffinic compounds, trace amounts of organic acids, ketones, aldehydes and alcohols may be formed.

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11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity : Not classified

Acute inhalation toxicity : Not classified

Acute dermal toxicity : Not classified

Skin corrosion/irritation : Not a skin irritant.

Serious eye damage/eye irritation : Not an eye irritant.
Mechanical irritation is possible.

Respiratory or skin sensitization : Not classified

Chronic toxicity

Carcinogenicity : Not classified

Germ cell mutagenicity : Not classified

Reproductive toxicity

Effects on fertility / : Not classified

Effects on or via lactation

Effects on Development : Not classified

Target Organ Systemic Toxicant - Single exposure

: The substance or mixture is not classified as specific target organ toxicant, single exposure.

Target Organ Systemic Toxicant - Repeated exposure

: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

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Aspiration hazard : Not applicable.

12. Ecological information

12.1 Toxicity

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified

Chronic aquatic toxicity : Not classified

12.2 Persistence and degradability

Biodegradability : Not expected to be biodegradable.

12.3 Bioaccumulative potential

Bioaccumulation : This material is not expected to bioaccumulate.

12.4 Mobility in soil

Additional advice : This material is not volatile and insoluble in water.

Environmental fate and pathways

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB).

12.6 Other adverse effects

Additional ecological information : Ecotoxicity is expected to be minimal based on the low water solubility of polymers.
No data available on this product. However, birds, fish and other wildlife may eat pellets which may obstruct their intestinal tracts.

13. Disposal considerations

13.1 Waste treatment methods

Product : All recovered material should be packaged, labeled, transported and disposed of or reclaimed in conformance with

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applicable laws and regulations and in conformance with good engineering practices. Reclaim where possible.
Recycle if possible.

14. Transport information

Not regulated for transport

15. Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****REACH status**

If the product has been purchased from any company of the LyondellBasell group of companies registered in the European Union, we confirm that all substances in this preparation have been pre-registered or, where required under REACH, registered, and that we have the intention to proceed with their registration in accordance with the deadlines set forth in REACH. (Regulation (EU) No. 1907/2006)

Other international regulations**Global Inventory Status**

The ingredients of this product are compliant with the following chemical inventory requirements or exemptions.

*Additional Explanatory Status Statements follow the table, as necessary.

Country/Region	Inventory	Status Description
Australia	AICS	Compliant
Canada	DSL	Not Compliant
China	IECSC	Compliant
Europe	REACH	See REACH Compliance Statement
Japan	ENCS	Compliant
Korea	KECI	Compliant
New Zealand	NZIoC	Not Compliant
Philippines	PICCS	Compliant
United States of America	TSCA	Compliant

15.2 Chemical Safety Assessment

No information available.

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16. Other information

Material safety datasheet sections which have been updated:

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Disclaimer

Multiple legal entities and registration numbers may be displayed in Section 1. The Recipient shall refer to the shipping documents to identify the legal entity that supplied this product.

This document is generated for the purpose of distributing health, safety, and environmental data.

Information is correct to the best of our knowledge at the date of the SDS publication.

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The presentation of numerical data, such as that used for physical and chemical properties and toxicological values, is expressed using a comma (,) to separate digits into groups of three and a period (.) as the decimal marker. For example, 1,234.56 mg/kg = 1 234,56 mg/kg.

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