

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**Lupolen 4021 K RM**

Gen. Variant: SDS_AT

Version 1.3

Revision Date 11/05/2019

Print Date 01/05/2022

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
 Chemical characterization : Polyethylene copolymer

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

Identified uses : Manufacture of plastic articles by injection molding, extrusion or other conversion process.

Prohibited uses : FDA Class III medical devices; European class III medical devices; Health Canada class IV Medical Devices; Applications involving permanent implantation into the body; Life-sustaining medical applications

1.3 Details of the supplier of the safety data sheet

Company	Registration number	Telephone
Basell Sales & Marketing Company B.V. Delftseplein 27E 3013 AA Rotterdam Netherlands	NA	31 (0) 10 275 55 00
E-mail address Responsible/issuing person	: product.safety@lyb.com	

1.4 Emergency telephone number

Basell Sales & Marketing Company B.V. +32 3 575 1235

Poison Center:

Gesundheit Österreich GMBH
 AT: +43 1 406 43 43
 24 hours all days

SAFETY DATA SHEET
 according to Regulation (EC) No. 1907/2006



Lupolen 4021 K RM

Gen. Variant: SDS_AT

Version 1.3 Revision Date 11/05/2019 Print Date 01/05/2022 SDS No.: BE9885

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.

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).

3. Composition/information on ingredients

3.2 Mixtures

Components

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

Contains: Additives and 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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Lupolen 4021 K RM

Gen. Variant: SDS_AT

Version 1.3

Revision Date 11/05/2019

Print Date 01/05/2022

SDS No.: BE9885

- 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.

4.2 Most important symptoms and effects, both acute and delayed

- 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

- Treatment : Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire-fighting measures

5.1 Extinguishing media

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Lupolen 4021 K RM

Gen. Variant: SDS_AT

Version 1.3

Revision Date 11/05/2019

Print Date 01/05/2022

SDS No.: BE9885

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

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).

5.3 Advice for firefighters

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 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.

SAFETY DATA SHEET
 according to Regulation (EC) No. 1907/2006



Lupolen 4021 K RM

Gen. Variant: SDS_AT

Version 1.3 Revision Date 11/05/2019 Print Date 01/05/2022 SDS No.: BE9885

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 containment / : On land, sweep/shovel into suitable disposal containers or
 Methods for cleaning up 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.
 Avoid generating dust; fine dust suspended in air and in the presence of an ignition source is a potential dust explosion hazard.
 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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Lupolen 4021 K RM

Gen. Variant: SDS_AT

Version 1.3

Revision Date 11/05/2019

Print Date 01/05/2022

SDS No.: BE9885

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.

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

Components	CAS-No.	Type	Limit Value	Basis Revision Date	Additional Information
------------	---------	------	-------------	------------------------	---------------------------

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Lupolen 4021 K RM

Gen. Variant: SDS_AT

Version 1.3

Revision Date 11/05/2019

Print Date 01/05/2022

SDS No.: BE9885

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

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.
 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 potential for contact with heated material.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Lupolen 4021 K RM

Gen. Variant: SDS_AT

Version 1.3

Revision Date 11/05/2019

Print Date 01/05/2022

SDS No.: BE9885

- 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.
- Flash point : No Data Available.
- Lower explosion limit : The minimum explosive concentration (MEC) for polymer dust varies according to particle size distribution.
- Upper explosion limit : Not applicable.
- Flammability (solid, gas) : Polymer will burn but does not easily ignite.
- Oxidizing properties : Not considered an oxidizing agent.
- Autoignition temperature : > 300 °C

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Lupolen 4021 K RM

Gen. Variant: SDS_AT

Version 1.3

Revision Date 11/05/2019

Print Date 01/05/2022

SDS No.: BE9885

- Decomposition temperature : not determined
- Melting point/range : 50 - 170 °C
- Boiling point/boiling range : Not applicable.
- Vapor pressure : Not applicable.
- Density : < 1 g/cm3
- Water solubility : Insoluble.
- Partition coefficient: n-octanol/water : No Data Available.
- Viscosity, dynamic : Not applicable.
- Relative vapor density : Not applicable.
- Evaporation rate : Not applicable.
- Explosive properties : No Data Available.

9.2 Other information

- Other information : No additional information available.

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.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Lupolen 4021 K RM

Gen. Variant: SDS_AT

Version 1.3

Revision Date 11/05/2019

Print Date 01/05/2022

SDS No.: BE9885

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.

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

SAFETY DATA SHEET
 according to Regulation (EC) No. 1907/2006



Lupolen 4021 K RM

Gen. Variant: SDS_AT

Version 1.3 Revision Date 11/05/2019 Print Date 01/05/2022 SDS No.: BE9885

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.

Aspiration hazard : Not applicable.

12. Ecological information

12.1 Ecotoxicology Assessment

Short-term (acute) aquatic hazard : Not classified

Long-term (chronic) aquatic hazard : 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.

SAFETY DATA SHEET
 according to Regulation (EC) No. 1907/2006



Lupolen 4021 K RM

Gen. Variant: SDS_AT

Version 1.3 Revision Date 11/05/2019 Print Date 01/05/2022 SDS No.: BE9885

12.4 Mobility in soil

Mobility : no data available

12.5 Results of PBT and vPvB assessment

Result : 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

Environmental fate and pathways : This material is not volatile and insoluble in water.

12.7 Other information

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

14. Transport information

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Lupolen 4021 K RM

Gen. Variant: SDS_AT

Version 1.3

Revision Date 11/05/2019

Print Date 01/05/2022

SDS No.: BE9885

Not regulated for transport

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH Annex XIV

None of the substances currently listed in Annex XIV of the REACH regulation 1907/2006/EC or in the SVHC Candidate List are known to be incorporated in this product in quantities ≥ 0.1 % w/w.

REACH Annex XVII

None of the substances currently listed in Annex XIV of the REACH regulation 1907/2006/EC or in the SVHC Candidate List are known to be incorporated in this product in quantities ≥ 0.1 % w/w.

REACH - Candidate List of Substances of Very High Concern for Authorisation

This product does not contain substances of very high concern (Regulation (EC) No. 1907/2006 (REACH), Article 57).

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 registered under REACH, 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	Compliant
China	IECSC	Compliant
Europe	REACH	See REACH Compliance Statement
Japan	ENCS	Compliant
Korea	KECI	Compliant

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**Lupolen 4021 K RM**

Gen. Variant: SDS_AT

Version 1.3

Revision Date 11/05/2019

Print Date 01/05/2022

SDS No.: BE9885

New Zealand	NZIoC	Compliant
Philippines	PICCS	Compliant
United States of America	TSCA	Compliant
Taiwan	TCSCA	Compliant

Contact product.safety@lyb.com for additional global inventory information.

15.2 Chemical safety assessment

No information available.

16. OTHER INFORMATION**Material safety datasheet sections which have been updated:**

Revised Section(s): 15 16

Abbreviations and Acronyms

ACGIH - American Conference of Governmental Industrial Hygienists
 ACGIH_BEIs - American Conference of Governmental Industrial Hygienists_Biological Exposure Indices
 ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
 AICS - Australian Inventory of Chemical Substances
 ASTM - American Society for Testing and Materials
 BEL - Biological Exposure Limits
 BTEX - Benzene, Toluene, Ethylbenzene, Xylenes
 CAS - Chemical Abstracts Service
 CEFIC - European Chemical Industry Council
 CLP - Classification Packaging and Labelling
 COC - Cleveland Open-Cup
 CS - Consumer Scenario
 DIN - Deutsches Institut für Normung
 DN(M)EL - Derived No (Minimal) Effect Level
 DSL - Canada Domestic Substance List
 EC - European Commission
 EC50 - Median Effective Concentration
 ECETOC - European Center on Ecotoxicology and Toxicology of Chemicals
 ECHA - European Chemicals Agency
 EL50 - Effective Loading fifty
 ELINCS - EHR-Lab Interoperability and Connectivity Specification
 ENCS - Japanese Existing and New Chemical Substances Inventory
 ERC - Environmental Release Category

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Lupolen 4021 K RM

Gen. Variant: SDS_AT

Version 1.3

Revision Date 11/05/2019

Print Date 01/05/2022

SDS No.: BE9885

EUSES - European Union System for the Evaluation of Substances
 EWC - European Waste Code
 GHS - Globally Harmonized System of Classification and Labelling of Ch
 IARC - International Agency for Research on Cancer
 IATA - International Air Transport Association
 IC50 - Inhibitory Concentration fifty IL50 = Inhibitory Level fifty
 IMDG - International Maritime Dangerous Goods
 IECSC - Chinese Chemicals Inventory
 IOELV - Indicative Occupational Exposure Limit Values
 IP346 - Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables
 KECI - Korea Existing Chemicals Inventory
 Koc - Organic Carbon/Water Partition Coefficient
 LC50 - Lethal Concentration fifty
 LD50 - Lethal Dose fifty per cent.
 LL/EL/IL - Lethal Loading/Effective Loading/Inhibitory Loading
 LL50 - Lethal Loading fifty
 MAK Commission - Permanent Senate Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area
 MARPOL - International Convention for the Prevention of Pollution from Ships
 No. - Number
 NOEC/NOEL - No Observed Effect Concentration / No Observed Effect Level
 NZIoC - New Zealand Inventory of Chemicals
 OE_HP - Occupational Exposure - High Production Volume
 OECD - Organization for Economic Co-operation and Development
 OEL - Occupational Exposure Limit
 PBT - Persistent, Bio accumulative and Toxic
 PICCS - Philippine Inventory of Chemicals and Chemical Substances
 PNEC - Predicted No Effect Concentration
 PPE - Personal Protective Equipment
 PROC - Process Category
 QSAR - Quantitative Structure-Activity Relationship
 REACH - Registration Evaluation and Authorization of Chemicals
 RID - Regulations Relating to International Carriage of Dangerous Goods by Rail
 SDS - Safety Data Sheet
 SKIN_DES - Skin Designation
 STEL - Short term exposure limit
 STP - Standard Temperature and Pressure
 TCSCA - Taiwan inventory of chemicals
 TGD - Technical Guidance Document
 TRA - Targeted Risk Assessment
 TSCA - US Toxic Substances Control Act
 TWA - Time-Weighted Average
 UN - United Nations
 vPvB - very Persistent and very Bioaccumulative
 WGK - German Water Endangerment Class

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

lyondellbasell

Lupolen 4021 K RM

Gen. Variant: SDS_AT

Version 1.3

Revision Date 11/05/2019

Print Date 01/05/2022

SDS No.: BE9885

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.

Information in this document is accurate to the best of our knowledge at the date of publication. The document is designed to provide users general information for safe handling, use, processing, storage, transportation, disposal and release and does not constitute any warranty or quality specification, either express or implied, including any warranty of merchantability or fitness for any particular purpose. Users shall determine whether the product is suitable for their use and can be used safely and legally.

In addition to any prohibitions of use specifically noted in this document, LyondellBasell may further prohibit or restrict the sale of its products into certain applications. For further information, please contact a LyondellBasell representative or visit the LyondellBasell website at: <https://www.lyondellbasell.com/en/products-technology/product-safety-stewardship/>
The Trade Name referenced in section 1 is a trademark owned or used by the LyondellBasell family of companies.

Numerical Data Presentation

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.

Language Translations

The information presented in this document has been translated from English by a vendor LyondellBasell believes to be reliable. LyondellBasell and its vendor have made a good-faith effort to verify the accuracy of the translation, but assume no liability or other responsibility for any errors that may have occurred. Please refer to our web site (www.lyondellbasell.com) for the original document written in English.

End of Material Safety Data Sheet