KeyForm P1110

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name	:	KeyForm P1110
Synonyms	:	1-Propene, homopolymer, PP
Substance name	:	Polypropylene
Substance No.	:	9003-07-0
Chemical characterization	:	Polypropylene Homopolymer

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**
Rotterdam Olefins & Polyolefins B.V. Aert van Nesstraat 45 3012 CA Rotterdam Netherlands	na	+31 (0) 10 713 6860

E-mail address Responsible/issuing person : RegulatoryComplianceROP@velogy.com

1.4 Emergency telephone number

Rotterdam Olefins & Polyolefins B.V.	+32 3 575 1235

Poison Center:
National Poisons Information Centre
UK: Call 111
24 hours all days

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)
Not a hazardous substance or mixture.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
May form explosible dust-air mixture if small particles are generated during further processing, handling, or by other means.

SECTION 3: Composition/information on ingredients

3.1 Substances

Substance name : Polypropylene

CAS-No. : 9003-07-0

Components

Chemical name	CAS-No. EC-No.	Concentration (% w/w)
Polypropylene	9003-07-0	> 99.5

SECTION 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.

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.

Risks : 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.

SECTION 5: Firefighting measures

5.1 Extinguishing media

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 firefighters : 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.

SECTION 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 material 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.

6.4 Reference to other sections

For disposal considerations see section 13., For personal protection see section 8.

SECTION 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 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.

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.

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)

Specific use(s) : See Section 1.2.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Non-specified (inert or nuisance) dust	Not Assigned	TWA	3 mg/m3 (respirable)	US (ACGIH)
	Not Assigned	TWA	10 mg/m3 (inhalable)	US (ACGIH)

8.2 Exposure controls

Appropriate engineering controls

Follow the recommendations in 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 NFPA 654
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).

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

Eye/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.
Hand protection		
Remarks	:	Wear gloves that provide thermal protection where there is a potential for contact with heated material.
Skin and body protection	:	Wear suitable protective clothing.
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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	solid
Form	:	pellets
Colour	:	Translucent to white
Odour	:	slight
Odour Threshold	:	no data available
pH	:	Not applicable
Melting point/range	:	50 - 170 °C
Boiling point/boiling range	:	Not applicable
Flash point	:	no data available
Evaporation rate	:	Not applicable

Flammability	:	May form combustible dust concentrations in air. Polymer will burn but does not easily ignite.
Upper explosion limit / Upper flammability limit	:	Not applicable
Lower explosion limit / Lower flammability limit	:	The minimum explosive concentration (MEC) for polymer dust varies according to particle size distribution.
Vapour pressure	:	Not applicable
Relative vapour density	:	Not applicable
Density	:	< 1 g/cm3
Solubility(ies)		
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	no data available
Viscosity		
Viscosity, dynamic	:	Not applicable
Explosive properties	:	no data available
Oxidizing properties	:	Not considered an oxidizing agent.

9.2 Other information

Self-ignition	:	> 300 °C

SECTION 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	:	None known.

10.4 Conditions to avoid

Conditions to avoid	:	Heat, flames and sparks.

10.5 Incompatible materials

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

10.6 Hazardous decomposition products

No decomposition if used as directed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Components:

Polypropylene:

Acute oral toxicity	:	Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity	:	Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Components:

Polypropylene:

Result	:	No skin irritation

Serious eye damage/eye irritation

Components:

Polypropylene:

Remarks	:	Mechanical irritation is possible.

Respiratory or skin sensitisation

Components:

Polypropylene:

Result	:	Does not cause skin sensitization.
Result	:	Does not cause respiratory sensitization.

Germ cell mutagenicity

Components:

Polypropylene:

Germ cell mutagenicity- Assessment	:	Based on available data, the classification criteria are not met.

Carcinogenicity

Components:

Polypropylene:

Carcinogenicity - Assessment : No evidence of carcinogenicity in animal studies.

Reproductive toxicity

Components:

Polypropylene:

Reproductive toxicity - Assessment : Based on available data, the classification criteria are not met.

STOT - single exposure

Components:

Polypropylene:

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

STOT - repeated exposure

Components:

Polypropylene:

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

Aspiration hazard

Components:

Polypropylene:

No aspiration toxicity classification

SECTION 12: Ecological information

12.1 Toxicity

Components:

Polypropylene:

Toxicity to fish : Remarks: Aquatic toxicity is unlikely due to low solubility.

Toxicity to daphnia and other aquatic invertebrates : Remarks: No toxicity at the limit of solubility.

Toxicity to algae/aquatic plants : Remarks: No toxicity at the limit of solubility.

Toxicity to microorganisms : Remarks: No toxicity at the limit of solubility.

Toxicity to fish (Chronic toxicity)	:	Remarks: No toxicity at the limit of solubility.
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	Remarks: No toxicity at the limit of solubility.

12.2 Persistence and degradability

Components:

Polypropylene:

Biodegradability	:	Remarks: The polymer is too large to be bioavailable.

12.3 Bioaccumulative potential

Components:

Polypropylene:

Bioaccumulation	:	Remarks: This material is not expected to bioaccumulate.

12.4 Mobility in soil

Components:

Polypropylene:

Mobility	:	Remarks: no data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Product:

Endocrine disrupting potential	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Components:

Polypropylene:

Environmental fate and pathways	:	This material is not volatile and insoluble in water.
Additional ecological information	:	Ecotoxicity is expected to be minimal based on the low water solubility of polymers.

SECTION 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.

SECTION 14: Transport information

14.1 UN number

ADN : Not regulated as a dangerous good

ADR : Not regulated as a dangerous good

RID : Not regulated as a dangerous good

IMDG : Not regulated as a dangerous good

IATA : Not regulated as a dangerous good

14.2 UN proper shipping name

ADN : Not regulated as a dangerous good

ADR : Not regulated as a dangerous good

RID : Not regulated as a dangerous good

IMDG : Not regulated as a dangerous good

IATA : Not regulated as a dangerous good

14.3 Transport hazard class(es)

ADN : Not regulated as a dangerous good

ADR : Not regulated as a dangerous good

RID : Not regulated as a dangerous good

IMDG : Not regulated as a dangerous good

IATA : Not regulated as a dangerous good

14.4 Packing group

ADN : Not regulated as a dangerous good

ADR : Not regulated as a dangerous good

RID : Not regulated as a dangerous good

IMDG : Not regulated as a dangerous good

IATA (Cargo) : Not regulated as a dangerous good

IATA (Passenger) : Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

UK REACH List of substances subject to authorisation (Annex XIV) UK REACH List of substances subject to authorisation (Annex XIV)	:	Not applicable
UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation	:	Not applicable
The Persistent Organic Pollutants Regulations (retained Regulation (EU) 2019/1021 as amended for Great Britain)	:	Not applicable
GB Export and import of hazardous chemicals - Prior Informed Consent (PIC) Regulation	:	Not applicable
UK REACH List of restrictions (Annex 17)	:	Not applicable

Other regulations:

Take note of The Management of Health and Safety at Work Regulations 1999 (requirements relating to new and expectant mothers at work contained in Regulation 16 to 18) and of the Pregnant Workers Directive 92/85/EEC.
Take note of The Management of Health and Safety at Work Regulations 1999 (requirements relating to protection of young people at work contained in Regulation 19) and of Directive 94/33/EC on the protection of young people at work.

The components of this product are reported in the following inventories:

TCSI	:	On the inventory, or in compliance with the inventory
TSCA	:	All substances listed as active on the TSCA inventory
AIIC	:	On the inventory, or in compliance with the inventory
DSL	:	All components of this product are on the Canadian DSL
ENCS	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
REACH	:	If the product has been purchased from Rotterdam Olefins & Polyolefins B.V., we confirm that the chemical substances in this product have been registered under REACH, in accordance with the deadlines set forth in REACH. (Regulation (EU) No. 1907/2006).

NZIoC	:	On the inventory, or in compliance with the inventory
TECI	:	On the inventory, or in compliance with the inventory
CH BAGREG	:	On the inventory, or in compliance with the inventory
MXINSQ	:	On the inventory, or in compliance with the inventory
NCI	:	On the inventory, or in compliance with the inventory
UKREACH	:	If the product has been purchased from Rotterdam Olefins & Polyolefins B.V., we confirm that the chemical substances in this product have been notified with a DUIN or, where required under UK-REACH, registered, and that we have the intention to proceed with any required registration in accordance with the deadlines set forth in the regulation REACH etc. (Amendment etc.) (EU Exit) Regulations 2019.
KKDIK	:	If the product has been purchased from Rotterdam Olefins & Polyolefins B.V., we confirm that the chemical substances in this product have been pre-registered or, where required under KKDIK, registered, and that we have the intention to proceed with any required registration in accordance with the deadlines set forth in the regulation.

15.2 Chemical safety assessment

SECTION 16: Other information

Full text of other abbreviations

US (ACGIH)	:	US (ACGIH)
US (ACGIH) / TWA	:	Time weighted average

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified;

NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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