SAFETY DATA SHEET

DISTRIBUTED BY:
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Regulation : In accordance with Regulation (EU) 453/2010 (REACH), Annex II

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

1.1 Product identifier

Name of the Product : KEP Ethylene Propylene Rubber

Substance Name	CAS No.	EC No.	Applicable Grade
Ethylene propylene 5-ethylidene-2-norbornene terpolymer	25038-36-2	607-505-0	KEP210, KEP240, KEP270, KEP330 KEP350, KEP370F, KEP570P, KEP430H, KEP435 KEP510, KEP570F, KEP650, KEP650L KEP281F, KEP2371, KEP1030F, KEP7141 KEP2320, KEP2380, KEP2480, KEP5770, KEP282F, KEP9590, KEP2372,
Ethylene propylene Copolymer	9010-79-1	618-455-4	KEP020P, KEP070P, KEP110, KEP2060, KEP0530

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

Relevant identified uses : Parts of automobile, Cables, Roofing Sheet, General industrial parts etc.
Uses advised against : No information

1.3 Details of the supplier of the Safety Data Sheet

Company name : KUMHO POLYCHEM CO., LTD.
Address : #144-6, Weoulha-dong, Yeosu-City, Cheonranam-Do, Korea
Contact Telephone : +82-61-688-2824
Fax : +82-61-688-2850
Email Address : khpark3738@polychem.co.kr

1.4. Emergency Telephone : +82-61-688-2700 (Fax: +82-61-688-2899)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

KEP Ethylene Propylene Rubber is not classified according to Regulation (EC) No 1272/2008 [CLP] and Directive 67/548/EEC.

2.2 Label elements

Hazard pictograms : Not applicable
Signal word : Not applicable
Hazard statements : Not applicable
Additional precautionary statements : Not applicable

2.3 Other hazards : No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

	Ethylene propylene 5-ethylidene-2-norbornene terpolymer	Ethylene propylene Copolymer
Other Name/s	2-norbornene, 5-ethylidene polymer with ethylene and propene	1-propene, polymer with ethene
Content(%)	100	100

* Monomers of the polymers have been registered under EU REACH regulation in compliance with the Article 6 of the regulation. Below is the information on the Registration.

Component	CAS No.	EC No.	EU REACH Registration No
Ethylene	74-85-1	200-815-3	01-2119462827-27-0116
Propylene	115-07-1	204-062-1	01-2119447103-50-0113
5-Etylidene-2-norbornene	16219-75-3	240-347-7	01-2119494722-31-0002

4. FIRST-AID MEASURES

4.1 Description of first aid measures

After eye contact :
- If in an eye, remove in the same manner as one would when any solid object enters the eye since the product is an inert solid.

After skin contact :
- If the skin is in contact with the heated product, immediately immerse in or flush the affected area with a large amount of cold water to dissipate heat. Cover with clean cotton sheet or gauze and get prompt medical attention.
- No attempt should be made to remove the heated product from the affected skin or to remove the contaminating clothing as the damaged flesh can easily be torn.

After inhalation :
- Using proper respiratory protection, immediately remove the affected victim from exposure.
- Administer artificial respiration if breathing has stopped.
- Keep the affected victim at rest.
- Call for prompt medical attention

After ingestion :
- First aid is normally not required

4.2 Most important symptoms and effects

Acute effects

None known.

Delayed effects

None known.

4.3 Indication of immediate medical attention and notes for physician

- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing Media :
- Foam
- Carbon dioxide
- Water spray

Unsuitable Extinguishing Media :
- No information available

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products :
- Due to thermal decomposition and incomplete combustion gases such as black smoke, carbon monoxide and other toxic gases, danger based on inhalation of such gases may occur.

5.3 Advice for firefighters

- Depending on the situation, protective equipment such as chemical cartridge respirator for fire-fighting and protective clothing shall be worn.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

- Wear protective gloves.

6.2 Environmental precautions

- Pay attention so that product does not flow into the sewage or public water area.

6.3 Methods and material for containment and cleaning up

- Sweep up the scattered product and recover into a suitable container.

6.4 Reference to other sections

- See also sections 8 and 13 of the Safety Data Sheet.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

- Do not handle until all safety precautions have been read and understood.

7.2 Conditions for safe storage, including any incompatibilities

- Keep away from heat, direct sunlight and ultraviolet rays. Exposure to direct sunlight and ultraviolet rays cause the polymer to generate light-induced crosslinked gel in the product.
- Avoid wetting and abrupt temperature change when storing this material.
- Please store product at room temperature, and keep it dry. Especially, high ethylene type EP(D)M should be stored in a warm room for more than 48hours prior to use and process.

7.3 Specific end use(s)

- None

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits :

- **o ACGIH regulation** **:** No information available
- **o Biological exposure index** **:** No information available
- **o OSHA regulation** **:** No information available
- **o NIOSH regulation** **:** No information available
- **o EU regulation** **:** No information available

Occupational Exposure Controls :

Exposure route of relevance	DNELs, DMELs, PNECs											
	Industrial				Professional				Consumer			
	Long term, local effects	Long term, systemic effects	Short term, local effects	Short term, systemic effect	Long term, local effects	Long term, systemic effects	Short term, local effects	Short term, systemic effects	Long term, local effects	Long term, systemic effects	Short term, local effects	Short term, systemic effects
Human: oral	-	-	-	-	-	-	-	-	-	-	-	-
Human: inhalation	-	-	-	-	-	-	-	-	-	-	-	-
Human: dermal	-	-	-	-	-	-	-	-	-	-	-	-
Environment: water	-											
Environment: air	-											
Environment: soil	-											
Environment: sediment	-											
Environment: STP	-											
Environment: oral	-											

8.2 Exposure controls

Appropriate engineering controls :

- Since volatile matters will be generated at the time of mixing, processing and molding work, install equipment to wash the hands and eyes nearby.

Individual protection measures, such as personal protective equipment :

Respiratory protection :

- Use a protective mask as required

Eye protection :

- Install equipment to wash the hands and eyes nearly.
- Wear protective glasses as required

Hand protection :

- Use protective gloves as required.

Body protection :

- Use work clothes and safety shoes as required.

Environmental exposure controls :

- Prevent entry into waterways, sewers, basements or confined areas.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	
Description :	Solid
Color :	White or yellow-Green
Odor :	Slight Odor
Odor threshold :	Not applicable
pH :	Not applicable
Melting point/freezing point :	Not applicable
Initial boiling point and boiling range :	Not applicable
Flash point :	250 ℃
Evaporation rate :	Not applicable
Flammability (solid, gas) :	Not applicable
Upper/lower flammability or explosive limits :	Not applicable
Vapor pressure :	Not applicable
Solubility (ies) :	Insoluble in water
Vapor density :	Not applicable
Specific gravity :	0.86 ~ 0.89
Partition coefficient: n-octanol/water :	Not applicable
Auto ignition temperature :	Not applicable
Decomposition temperature :	250 ℃
Viscosity :	Not applicable
Explosive properties :	Not applicable
Oxidizing properties :	Not applicable
Molecular weight :	100,000 ~ 600,000

9.2 Other information : No information available

10. STABILITY AND REACTIVITY

10.1 Reactivity/Chemical stability/Possibility of hazardous reactions

- Polymerization does not occur.
- Stable at normal temperature and pressure.

10.2 Conditions to avoid : Not applicable

10.3 Incompatible materials : Not applicable

10.4 Hazardous decomposition products : Not applicable

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicology effects

Acute toxicity;	
Oral	Not applicable
Dermal	Not applicable
Inhalation	Not applicable
Skin Corrosion/ Irritation;	Not applicable
Serious Eye Damage/ Irritation;	Not applicable
Respiratory sensitization;	Not applicable
Skin Sensitization;	Not applicable
Carcinogenicity;	Not applicable
Mutagenicity;	Not applicable
Reproductive toxicity;	Not applicable
Specific target organ toxicity (single exposure);	Not applicable
Specific target organ toxicity (repeat exposure);	Not applicable
Aspiration Hazard;	Not applicable

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Acute toxicity	No information available
Chronic toxicity	No information available
12.2 Persistence and degradability	No information available
12.3 Bioaccumulative potential	No information available
12.4 Mobility in soil	No information available
12.5 Results of PBT and vPvB assessment	No information available
12.6 Other adverse effects	No information available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Disposal Methods

- Observe all regulations made by administration

Precautions for disposal

- Observe all regulations made by administration

14. TRANSPORT INFORMATION

14.1 UN number	**:** Not applicable to the criteria for classification
14.2 UN proper shipping name	**:** Not applicable to the criteria for classification
14.3 Transport hazard class	**:** Not applicable to the criteria for classification
14.4 Packing group	**:** Not applicable to the criteria for classification
14.5 Environmental hazards	**:** Not applicable to the criteria for classification

14.6 Special precautions for user

- in case of fire **:** Not applicable

- in case of leakage **:** Not applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not applicable

15. REGULATORY INFORMATION

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

	Ethylene propylene 5-ethylidene-2-norbornene terpolymer	Ethylene propylene Copolymer
EU Regulatory Information		
EU classification		
Annex I of Directive 67/548/EEC :		
Classification :	Not regulated	Not regulated
Risk phrases :	Not regulated	Not regulated
Safety phrases :	Not regulated	Not regulated
EU CLP 2008 :		
Classification :	Not regulated	Not regulated
Hazard statement codes :	Not regulated	Not regulated
Precautionary statement codes :	Not regulated	Not regulated
EU SVHC list :	Not regulated	Not regulated
EU Authorisation List :	Not regulated	Not regulated
EU Restriction list :	Not regulated	Not regulated
Foreign Regulatory Information		
Korea management information :	Existing Chemical Substance (KE-13881)	Existing Chemical Substance (KE-29433)

15.2 Chemical safety assessment :

- No chemical safety assessment has been carried out for this substance by the supplier.

16. OTHER INFORMATION

Product safety data sheet was prepared for KEP Ethylene Propylene Rubber in accordance with Regulation (EU) 453/2010 (REACH), Annex II

16.1 Indication of changes:

Version **:** Rev. 23

Revision date **:** 10 April 2017

16.2. Abbreviations and acronyms:

CLP = Classification Labelling Packaging Regulation ; Regulation (EC) No 1272/2008

CAS No. = Chemical Abstracts Service number

DNEL = Derived No Effect Level

EC Number = EINECS and ELINCS Number (see also EINECS and ELINCS)

EU = European Union

OSHA = European Agency for Safety and Health at work

PBT = Persistent, Bioaccumulative and Toxic substance

PNEC(s) = Predicted No Effect Concentration(s)

REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006

SVHC = Substances of Very High Concern

vPvB = Very Persistent and Very Bioaccumulative

16.3 Key literature reference and sources for data:

- HSDB (Hazardous Substances Data Bank)
- ICSC (International Chemical Safety Cards)
- NLM (United States National Library of Medicine)
- IUCLID (International Uniform Chemical Information Database)

- NCIS (National Chemicals Information System of South Korea)

16.4 Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]: Not applicable

16.5 Relevant R-phrases and/or H-statements (number and full text): Not applicable

16.6 Training advise:

- Do not handle until all safety precautions have been read and understood.

16.7 Further information: No information available

This safety data sheet (SDS) is based on the legal provisions of the REACH Regulation, as amended. Its contents are intended as a guide to the appropriate precautionary handling of the material. It is the responsibility of recipients of this SDS to ensure that the information contained therein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. Information and instructions provided in this SDS are based on the current state of scientific and technical knowledge at the date of issue indicated. It should not be construed as any guarantee of technical performance, suitability for particular applications, and does not establish a legally valid contractual relationship.