1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1) Product : Polypropylene TOPILENE R200P

2) Recommended Use of the Chemical and Restrictions on Use

① Recommended use : Thermoplastic resin extruded or moulded by manufacturers

② Restrictions on use : No Data

3) Manufacture / Supplier Information

Supply Company	HYOSUNG CORPORATION, Yongyeon Plant		
Address	66, 487 beon-gil, Cheoyong-ro, Nam-gu, Ulsan, Korea (P.O Box 680-140)		
Telephone	+82-52-208-9311	FAX	+82-52-208-9320
Department in charge	PP Production Team		

2. HAZARDS IDENTIFICATION

1) Classification of the substance or mixture : Not applicable

2) GHS Labels, including precautionary statements

① Symbol : Not applicable

② Signal word : Not applicable

③ Hazard statement : Not applicable

④ Precautionary statements

- Prevention : Not applicable
- Response : Not applicable
- Storage : Not applicable
- Disposal : Not applicable

3) Other hazards which do not result in classification :

NFPA(0-4) : Health=1, Fire=1, Reactivity=0

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	SYNONYMS	CAS No.	Amount (wt%)
PROPYLENE-ETHYLENE COPOLYMER	1-PROPENE, POLYMER WITH ETHENE	9010-79-1	> 99
ADDITIVES	-	-	< 1

4. FIRST AID PROCEDURES

1) Eye Contact

· In case of contact with substance, rinse your eyes immediately with running water for at least 20 minutes.

· Take medical action.

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2) Skin Contact
   · In case of contact with substance, rinse your skin immediately with running water for at least 20 minutes.
   · Remove contaminated cloths including shoes immediately.
   · Take medical action.
3) Inhalation
   · Take medical action.
   · Move into fresh air.
   · If short of breathing, provide oxygen supply system.
4) Ingestion
   · Do not put anything into the mouth of an unconscious person.
   · Take medical action.
5) First-Aid Treatment and Information on Medical Doctors
   · Let a medical provider know about the substance and take appropriate protection.

5. FIRE FIGHTING MEASURES

1) Suitable(Unsuitable) Extinguishing Media
   · Extinguishing media : Water, Carbon dioxide, Extinguishing powder, Fire fighting foam
   · Unsuitable Extinguishing media : No data
   · Large fire : Fire fighting, Water spray
2) Specific Hazards from Chemical Material
   · Fire and Explosion Hazards : There is slight fire hazard.
   · Toxicant from combustion : Pyrolysis or combustion cause irritative gases or carbon dioxides.
3) Fire Fighting Procedures and Equipment
   · If it can be done without risk, move container from fire area.
   · If it will be leak, do not spray high-pressure water stream.
   · Dike for later processing.
   · Use extinguishing agents appropriate for surrounding fire.
   · Avoid inhalation of materials and combustion products.
   · Up the wind and avoid low area.

6. ACCIDENTAL RELEASE MEASURES

1) Personal Precautions, Protective Equipment and Emergency Procedures
   · Remove all flammable sources.
   · If it is not dangerous, stop leaking.
   · Take caution of substances and conditions that should be avoided.
   · Ventilate properly.
   · Do not touch the effluents or walk around the area.
   · Prevent producing dust.

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2) Environmental Precautions
- · Release to air : Not available
- · Release to soil : Not available
- · Release to water : Not available

3) Purification and Removal Methods
- · Small leak : Put in proper containers for waste.
- · Large leak : To minimize the spread, cover it with plastic sheets or water-proof cloths and keep it away from water.

7. HANDLING AND STORAGE

1) Handling
- · Avoid direct physical contact.
- · Wash thoroughly after use.
- · Take precautionary measures to prevent against explosion risks, as all types of polymers may develop dust during transporting or grinding of granules.

2) Storage
- · Keep stored in airtight containers.
- · Keep stores in a cool, dry place.
- · Place in an appropriate space in compliance with local regulation.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

1) Exposure Limits and Biological Exposure Limits of Chemical
- · KOSHA : No data
- · AIHA : No data
- · ACGIH : No data
- · OSHA : No data
- · Biological exposure limits : No data

2) Engineering Management
- · Install local ventilation system.
- · Ventilation equipment should be explosion-proof if explosive concentrations of dust, vapor of fume are present.

3) Personal Protective Equipment

① Respiratory protection
- · Use approved respirator if unable to control airborne dust, fumes, and vapor.

② Eyes protection
- · The wearing of chemical safety goggles or face shield is recommended.
- · Install eyes washing facilities and quick drench shower near work areas.

③ Hands protection
- · The wearing of protective gloves is recommended to prevent exposure.

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④ Human body protection

· The wearing of protective clothing is recommended to prevent exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

1) Appearance : White pellet
2) Odor : Odorless
3) Odor Threshold : No data
4) pH : No data
5) Melting / Freezing Point : 130 ~ 170 ℃
6) Initial Boiling Point or Boiling Point Range : No data
7) Flash Point : No data
8) Evaporation Rate : No data
9) Flammability(Solid, Gas) : No data
10) Upper / Lower Flammability or Explosive Limits: : No data
11) Vapor Pressure : No data
12) Solubility : Insoluble
13) Vapor Density : No data
14) Relative Density : 0.88~0.92 kg/L (at 20℃)
15) N-Octane / Water Partition Coefficient : No data
16) Auto Ignition Temperature : 400℃
17) Decomposition Temperature : No data
18) Viscosity : No data
19) Molecular Weight : >10,000

10. STABILITY AND REACTIVITY

1) Chemical Stability
   · Stable under normal temperature and pressure.
2) Possibility of Hazardous Reaction
   · Will not occur under normal temperature and pressure.
3) Condition to Avoid
   · Avoid contact with water.
   · Keep away from heat, sparks and flame.
   · Avoid contact with strong oxidizing agents, strong alkaline and strong acid.
4) Incompatibility with Other Materials
   · Strong oxidizing materials, Flammable substance.
5) Hazardous Decomposition Product
   · At elevated temperatures the material will begin to decompose, producing fumes that can contain carbon monoxide, acrolein, aldehydes, and unidentified organic compounds.

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11. TOXICOLOGICAL INFORMATION

1) Information on the Likely Routes of Exposure
   · Inhalation : No data
   · Ingestion : No data
   · Skin contact : No data
   · Eye contact : No data

2) Delayed and Immediate Effects and Chronic Effects From Short or Long Term Exposure
   - Acute toxicity
     · Oral : No data
     · Skin : No data
     · Inhalation : No data
   - Skin corrosion / irritation : No data
   - Serious eye damage / eye irritation : No data
   - Respiratory sensitization : No data
   - Skin sensitization : No data
   - Carcinogenicity
     · Industrial Safety & Health Law : No data
     · IARC : No data
     · OSHA : No data
     · ACGIH : No data
     · NTP : No data
     · EU CLP : No data
   - Gem cell mutagenicity : No data
   - Reproductive toxicity : No data
   - Specific target organ systemic toxicity (Single exposure)
   - Specific target organ systemic toxicity (Repeated exposure)
   - Aspiration hazard : No data

12. ECOLOGICAL INFORMATION

1) Ecotoxicity : No data
2) Persistence and Degradability : No data
3) Bioaccumulative Potential : No data
4) Mobility in Soil : No data
5) Other Adverse Effects : No data

13. DISPOSAL CONSIDERATIONS

1) Disposal Method
   · Dispose in accordance with all applicable environmental regulations.
   · Empty containers should be recycled or disposed of through an approved waste management facility.
2) Disposal Considerations
   · For proper disposal of used material, an assessment must be completed to determine the proper and permissible waste management options under applicable rules, regulations and laws.

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14. TRANSPORT INFORMATION

1) UN Number : Not regulated as a hazardous material
2) UN Proper Shipping Name : Not applicable
3) Hazard Class : Not applicable
4) Packing Group : Not applicable
5) Marine Pollutant : Not applicable
6) Special Precautions for User
   · Emergency management type of fire : Not applicable
   · Emergency management type of leak : Not applicable

15. REGULATORY INFORMATION

1) Industrial Safety and Health Law (KOREA) : Not applicable
2) Toxic Chemical Substance Subject to Management Act (KOREA) : Not applicable
3) Hazardous Material Safety Act (KOREA) : Not applicable
4) Other Local or International Regulation
   - Persistent Organic Pollutant Management Law (KOREA) : Not applicable
   - EU Classification
     · Classification : Not applicable
     · Risk Phrases : Not applicable
     · Safety Phrases : Not applicable
   - US Regulations
     · OSHA : Not applicable
     · CERCLA : Not applicable
     · EPCRA 302 : Not applicable
     · EPCRA 304 : Not applicable
     · EPCRA 301 : Not applicable
   - Rotterdam Convention material : Not applicable
   - Stockholm Convention material : Not applicable
   - Montreal Protocol on Substance : Not applicable

16. OTHER INFORMATION

1) Reference
   · KOSHA : Material Safety Data Sheet
2) Issued Date : 1996. 05. 25
3) Revision Number and Last Date Revised : 2015. 01. 01 (6 Version)
4) Others :

The information contained herein is current as of the date of this Material Safety Data Sheet, but no warranty, guarantee or representation is made by HYOSUNG Corp. as to the absolute correctness or sufficiency of the information & recommendations in this Material Safety Data Sheet.

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Since the use of this information and the conditions of the use of the product are not under the control of HYOSUNG, it is the user's obligation to determine conditions of safe use of the product.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.

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