1. Chemical Product and Company Information

1) Product
Hiprene M540

2) Recommended use of the chemical and restrictions on use
- Recommended use: Injection molding, Industrial Parts
- Restrictions on use: No data

3) Manufacture/Supplier information
- Supply company: GS Caltex Corporation
- Address: 679 Yoksam-dong, Kangnam-gu, Seoul, Korea
- Information service or emergency call: 1544-5151
- Department in charge: The customer service center

2. Hazards Identification

1) Classification of the substance or mixture
   No data

2) GHS labels, including precautionary statements
   - Symbol: No Data
   - Signal word: No Data
   - Hazard statement: No Data
   - Precautionary statement
     - Prevention: No Data
     - Response: No Data
     - Storage: No Data
     - Disposal: No Data
3) Other hazards which do not result in classification

- NFPA
  - Health 1
  - Fire 1
  - Reactivity 0

3. Composition and Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>Synonyms</th>
<th>CAS No.</th>
<th>Content(vol.%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYLENE-PROPYLENE COPOLYMER</td>
<td>1-PROPENE, POLYMER WITH ETHENE</td>
<td>9010-79-1</td>
<td>100%</td>
</tr>
</tbody>
</table>

4. First Aid Measures

1) Eye contact
Wash eyes thoroughly with plenty of water for at least 15 minutes.

2) Skin contact
Wash contaminated area perfectly with soap and water for at least 15 minutes during removing contaminated clothes and shoes.

3) Inhalation
Move affected individual to fresh air from the exposure area.
If person is not breathing, provide artificial respiration.
If there is labored respiration, certified person should manage the oxygen.
Seek medical attention immediately.

4) Ingestion
Seek medical attention immediately.
5) Most important symptoms/effects, acute and delayed

- **Eyes contact:**
  - Short-term effect: Irritation
  - Long-term effect: No Data

- **Skin contact:**
  - Short-term effect: Irritation
  - Long-term effect: No Data

- **Inhalation:**
  - Short-term effect: Irritation
  - Long-term effect: No Data

- **Ingestion:**
  - Short-term effect: No Data
  - Long-term effect: No Data

6) First-aid treatment and information on medical doctors

No Data

5. Fire Fighting Measures

1) Recommended extinguished media

- **Recommended extinguishing media:** Water, CO2, Extinguishing powder, Fire fighting foam
- **Prohibited extinguishing media:** No data
- **Large fire:** Fire fighting foam or water spray

2) Specific hazard from chemical material

- **Toxicant from combustion:** Carbon Oxides, Aldehydes, Hydrocarbons, Ketons

- **Fire and Explosion Hazards:** There is the slight fire hazard. Flammability

3) Extinguishment

- If it can be done without risk, Move container from fire area
- If it will be leak, do not spray high-pressure water streams
- Dike for later processing
- Use extinguishing agents appropriate for surrounding fire
- Avoid inhalation of materials and combustion products
- Up the wind and avoid low areas
6. Accidental Release Measures

1) Necessary actions to protect human health
Avoid heat, flame, spark, and other ignition sources.
If there are methods to stop release safely, do so.
Spray water to reduce vapors.

2) Necessary actions to protect the environment
   ○ Release to air: No data
   ○ Release to soil: No data
   ○ Release to water: No data

3) Purification and removal methods
   ○ For small release: No data
   ○ For large release: No data

7. Handling and Storage

1) Safety handling
   Avoid direct physical contact.
   Encourage appropriate personal hygiene habits.

2) Storage
   Pressure, cutting, grinding, heating, etc. Avoid physical shock.
   Keep stored in airtight containers.
   Keep stored in a cool, dry place.
   Place in an appropriate space in accordance with local regulation

8. Exposure Control and Personal Protection

1) Exposure limits and biological exposure limits of chemical
   ○ KOSHA: No data
   ○ AIHA: No data
   ○ ACGIH: No data
   ○ OSHA: No data
   ○ NIOSH: No data
   ○ Biological exposure limits: No data
2) **Engineering management**

Ventilation equipment should be explosion-proof if explosive concentrations of dust, vapor or fume are present.
Install local ventilation system.
Comply with limits.

3) **Personal protection equipment**

○ **Respiratory protection** :
Use approved supplier air respiratory protection for entry into confined space.

○ **Eyes protection** :
Safety glasses or goggles are recommended for the eyes protection from dusts or mists.
A business proprietor should install eyes washing facilities near working areas to protect worker’s eyes for emergency.

○ **Hands protection** :
Use proper protective gloves.

○ **Human body protection** :
Use proper protective clothes.

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9. **Physical and Chemical Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Appearance</td>
<td>White solid</td>
</tr>
<tr>
<td>2) Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>3) Odor threshold</td>
<td>No data</td>
</tr>
<tr>
<td>4) pH</td>
<td>No data</td>
</tr>
<tr>
<td>5) Melting point/freezing point</td>
<td>&lt;165°C</td>
</tr>
<tr>
<td>6) Initial boiling point or boiling range</td>
<td>No data</td>
</tr>
<tr>
<td>7) Flash point</td>
<td>No data</td>
</tr>
<tr>
<td>8) Evaporation rate</td>
<td>No data</td>
</tr>
<tr>
<td>9) Flammability(solid, gas)</td>
<td>No data</td>
</tr>
<tr>
<td>10) Upper/lower flammability or explosive limits</td>
<td>–/–</td>
</tr>
<tr>
<td>11) Vapor pressure</td>
<td>No data</td>
</tr>
<tr>
<td>12) Solubility</td>
<td>Insolubility</td>
</tr>
<tr>
<td>13) Vapor density</td>
<td>No data</td>
</tr>
<tr>
<td>14) Relative density</td>
<td>0.9</td>
</tr>
<tr>
<td>15) Partition coefficient: n-octano/water</td>
<td>No data</td>
</tr>
<tr>
<td>16) Auto-ignition temperature</td>
<td>375~400°C</td>
</tr>
<tr>
<td>17) Decomposition temperature</td>
<td>No data</td>
</tr>
<tr>
<td>18) Viscosity</td>
<td>No data</td>
</tr>
<tr>
<td>19) Molecular weight</td>
<td>&gt;40,000</td>
</tr>
</tbody>
</table>
10. Stability and Reactivity

1) Chemical stability
Stable at room temperature and pressure

2) Toxicant generation possibility during reaction
For combustion reaction, toxic carbon compounds may generate.

3) Prohibited conditions
Avoid heat, sparks, open flames and other ignition sources
If containers are exposed to heat, container damage or explosion may occur.
Keep away from water supply facilities and sewage.

4) Prohibited materials
Oxidizing agent, peroxides

5) Toxicant during decomposition
Carbon Oxides, Aldehydes, Hydrocarbons, Ketons

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 : LD50 > 8,000 mg/kg Rat
     - Dermal : No data
     - Inhalation : No data
   - Skin corrosion/irritation : Harmlessness
   - Serious eye damage/eye irritation : Harmlessness
   - Respiratory sensitization : No data
   - Skin sensitization : No data
   - Carcinogenicity : IARC Group 3
   - Germ cell mutagenicity : No data
   - Reproductive toxicity : No data
   - Specific target organ systemic toxicity(single exposure) : Harmlessness
   - Specific target organ systemic toxicity(repeated exposure) : No data
   - Aspiration hazard : No data
12. Ecological Information

1) Hazardous to the aquatic environment
   ○ Fish : No data
   ○ Crustacea : No data
   ○ Algae : No data

2) Persistence and degradability
   ○ Persistence : No data
   ○ Degradability : No data

3) Bioaccumulative potential
   ○ Biodegradability : No data
   ○ Bioaccumulation : No data

4) Mobility in soil
   No data

5) Other adverse effects
   No data

13. Disposal Considerations

1) Disposal methods
   Dispose according to the related regulations.

2) Disposal cautions
   Follow details of related waste management act.

14. Transport Information

1) UN number
   N/A

2) UN Proper Shipping Name
   N/A
3) Transport hazard classes
N/A

4) Packing group, if applicable
N/A

5) Environmental hazards
N/A

6) Special precautions for user
- Emergency management type of fire : N/A
- Emergency management type of leak : N/A

15. Regulatory Information

1) Industrial safety and health act (Korea)
No data

2) Toxic chemical substance subject to management act (Korea)
No data

3) Wastes control act (Korea)
No data

4) Hazardous material safety act (Korea)
No data

5) Other internal and foreign acts
- Persistent organic pollutant control act (Korea) : N/A
- EC classification
  - Classification : N/A
  - Risk Phrases : N/A
  - Safety Phrases : N/A
- U.S. acts
  - OSHA (29CFR1910.119) : N/A
  - CERCLA 103 (40CFR302.4) : N/A
  - EPCRA 302 (40CFR355.30) : N/A
  - EPCRA 304 (40CFR355.40) : N/A
  - EPCRA 313 (40CFR370.21) : N/A
  - EPCRA 313 (40CFR372.65) : Applicable
- Rotterdam Convention on Harmful Chemicals & Pesticides : N/A
- Stockholm document : N/A
- Montreal protocol : N/A
16. Other Information

1) References
UN RTDG  Recommendations on the TRANSPORT OF DANGEROUS GOODS
NITE   http://www.safe.nite.go.jp/data/sougou/pkc_e_search_frm.html
IPCS    http://www.inchem.org/documents/icsc/icsc/eics0559.htm
IUCLID  http://ecb.jrc.it/esis/index.php?PGM=dat
KOSHA   Material Safety Data Sheet
OECD SDS Initial Assessment Profile
Westlake CA& O MSDS http://www.westlakechemical.com/_filelib/FileCabinet/pdfs
BOC Gases MSDS http://www.vngas.com/pdf/g75.pdf
ACGIH   2008 Guide to occupational exposure values
         Ministry of Labour Notification No. 2008–26 based on the exposure of chemical substances and physical agents

2) Date of preparation of the first version of the SDS
2008–07–25

3) Revised frequency and Date of preparation of the latest version of the SDS
2011–09–30 (1 version)

4) Others
ACGIH: American Conference of Governmental Industrial Hygienists(www.acgih.org_  
AIHA : American Industrial Hygiene Association
ANSI : American National Standards Institute
API: American Petroleum Institute
CERCLA: Comprehensive Emergency Response, Compensation, and Liability Act
DOT: U.S. Department of Transportation
EPA: US Environmental Protection Agency(www.epa.gov)
HMIS: Hazardous Materials Identification System
IARC: International Agency for Research on Cancer
KOSHA   Korea Occupational Safety and Health Agency (www.kosha.net)
NFPA: National Fire Protection Association
N/A: Not Applicable
NIOSH: National Institute for Occupational Safety and Health
NTP: National Toxicology Program
LC50: Lethal Concentration, 50 Percent
LD50: Lethal Dose, 50 Percent
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
OPA: Oil Pollution Act of 1990
OSHA :U.S. Occupational Safety & Health Administration
PEL: Permissible Exposure Limit (OSHA)
REL: Recommended Exposure Limit (NIOSH)
RCRA: Resource Conservation and Recovery Act
RTECS: Registry of Toxic Effects of Chemical Substances(http://www.cdc.gov/niosh/rtecs/)
STEL Short-Term Exposure Limit (generally 15 minutes)
SARA: Superfund Amendments and Reauthorization Act of 1986 Title III
SPCC: Spill Prevention, Control, and Countermeasures
TLV: Threshold Limit Value (ACGIH)
TSCA: Toxic Substances Control Act
TWA: Time Weighted Average (8 hr.)
WHMIS: Workplace Hazardous Materials Information System (Canada)(http://www.whmis.net/)
WEEL: Workplace Environmental Exposure Level (AIHA)
MOL: Ministry of Labor, Korea