



TWO NINE SIX O TRADING PTE LTD
18, FAN YONG ROAD, SINGAPORE 629 795
Tel: +65 6267 1300 Fax: +65 6264 2960

Material Safety Data Sheet

KM Polyethylene [PE] Backer Foam

No. MSDS-PE-02

Established date Apr. 2, 2004

Revised date Jul. 2, 2006

Revised contents

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SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1) PRODUCT NAME :

① TRADE NAME/SYNONYMS : KM Polyethylene [PE] Backer Foam

② PRODUCTS COMPOSITION

- Low Density Polyethylene
- Additives
(Glyceryl Monostearate, Silicon Dioxide, Magnesium Oxide, and ISO Butane)
- Aluminium foil

2). GENERAL PROPERTY : Semihard foamed material with closed cell structure

3). CLASSIFICATION OF HAZARDS (The Numeric Index of NFPA)

Chemical Material	Health	Fire	Reactivity
Polyethylene	1	1	0
Glyceryl Monostearate	1	1	0
Silicon Dioxide	1	0	0
Magnesium Oxide	1	0	0
ISO Butane	2	4	0

4) USING OF PRODUCT

A thermostat for hot water supply system (hot water pipe laying), Pipe lagging for Construction, Material for Refrigerator, Air-conditioner system, Packing Materials, Sundry goods sports & Leisure

5) MANUFACTURER IDENTIFICATION

① COMPANY NAME : Hansung Hanalon Co., Ltd.

② ADDRESS : 653-10 Yuram-ri, Paltan-myeon, Hwaseong-si, Gyeonggi-do
SEOUL 445-913 KOREA



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SECTION 2. COMPOSITION, INFORMATION ON INGREDIENTS

Component	CAS Number	Percentage
Polyethylene	9002-88-4	82.7
Glyceryl Monostearate	31566-31-1	7.4
Silica Gel	231-546-4	1.5
Magnesium Oxide	215-171-9	1.4
Isobutane	75-28-5	7.0

SECTION 3. HAZARDS IDENTIFICATION

1) POLYETHYLENE

① EMERGENCY OVERVIEW

- Color : White
- Physical Foam : Solid
- Major Health Hazards : Harmful if inhaled
- Physical Risk : Hot materials(Powder & air compound) may cause thermal Burns and Explosion

② EYE

- Short Term Exposure : irritation
- Long Term Exposure : no information is available

③ SKIN

- Short Term Exposure : no information on significant adverse effects
- Long Term Exposure : no information is available

④ INHALATION

- Short Term Exposure : Harmful if inhaled
- Long Term Exposure : no information is available

⑤ INGESTION

- Short Term Exposure : no information on significant adverse effects
- Long Term Exposure : no information on significant adverse effects

⑥ CHRONIC SYMPTOM & CONDITIONS

- Carcinogenic : The Law of Industrial Safety & Health (Korea)
 - It's No prescribed in the law
 - OSHA - No



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NTP - No

IARC - No

2) GLYCERYL MONOSTEARATE

① EMERGENCY OVERVIEW

- Color : White & White line
- Physical Foam : Splinter, a precious stone, wax
- Major Health Hazards : There are no reports which include any caution about the principal internal organs.
- Physical Risk : Hot materials(Powder & air compound) may cause thermal Burns and Explosion.

② EYE

- Short Term Exposure : producing tears
- Long Term Exposure : no information is available

③ SKIN

- Short Term Exposure : a little of impetus
- Long Term Exposure : no information is available

④ INHALATION

- Short Term Exposure : no information on significant adverse effects
- Long Term Exposure : no information on significant adverse effects

⑤ INGESTION

- Short Term Exposure : no information on significant adverse effects
- Long Term Exposure : no information on significant adverse effects

⑥ CHRONIC SYMPTOM & CONDITIONS

- Carcinogenic : The Law of Industrial Safety & Health (Korea)
 - It's No prescribed in the law
- OSHA - No
- NTP - No
- IARC - No

3) SILICON DIOXIDE

① EMERGENCY OVERVIEW

- Color : White
- Physical Foam : Crystalloid



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- Major Health Hazards : There are no reports which include any caution about the principal internal organs.
- Physical Risk : Hot materials(Powder & air compound) may cause thermal Burns and Explosion.

② EYE

- Short Term Exposure : producing tears
- Long Term Exposure : no information is available

③ SKIN

- Short Term Exposure : impetus
- Long Term Exposure : no information is available

④ INHALATION

- Short Term Exposure : impetus
- Long Term Exposure : no information is available

⑤ INGESTION

- Short Term Exposure : no information on significant adverse effects
- Long Term Exposure : no information is available

⑥ CHRONIC SYMPTOM & CONDITIONS

- Carcinogenic : The Law of Industrial Safety & Health (Korea)
 - It's No prescribed in the law
- OSHA - No
- NTP - No
- IARC - No

4) MAGNESIUM OXIDE

① EMERGENCY OVERVIEW

- Color : White
- Physical Foam : Powder
- Smell : Scentless
- Major Health Hazards : There are no reports which include any caution about the principal internal organs.

② EYE

- Short Term Exposure : impetus
- Long Term Exposure : impetus



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③ SKIN

- Short Term Exposure : impetus
- Long Term Exposure : Skin trouble

④ INHALATION

- Short Term Exposure : impetus, meta, fume, fever
- Long Term Exposure : impetus, difficulty in breathing

⑤ INGESTION

- Short Term Exposure : impetus, nausea, vomiting, diarrhea, stomachache
- Long Term Exposure : no information is available

⑥ CHRONIC SYMPTOM & CONDITIONS

- Carcinogenic : The Law of Industrial Safety & Health (Korea)
 - It's No prescribed in the law
- OSHA - No
- NTP - No
- IARC - No

5) ISOBUTANE

① EMERGENCY OVERVIEW

- Color : Achromatic
- Physical Foam : GAS
- Smell : Scent of petroleum
- Major Health Hazards : Given an impetus to the air-way an impetus, repress the central nerve, difficulty in breathing
- Physical Risk : Flammable gas, It may burn with vaporization, also has danger with reverse flame.

② EYE

- Short Term Exposure : frostbite
- Long Term Exposure : no information is available

③ SKIN

- Short Term Exposure : frostbite
- Long Term Exposure : no information is available

④ INHALATION

- Short Term Exposure : impetus, nausea, vomiting, headache, sleepiness,



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dizziness, changing the emotion, miss the body control,
suffocation, lose one's consciousness, coma

• Long Term Exposure : no information on significant adverse effects

⑤ INGESTION

• Short Term Exposure : no genesis

• Long Term Exposure : no genesis

⑥ CHRONIC SYMPTOM & CONDITIONS

Carcinogenic : The Law of Industrial Safety & Health (Korea)

- It's No prescribed in the law

OSHA - No

NTP - No

IARC - No

SECTION 4. FIRST AID MEASURES

1) INHALATION

If symptoms are experienced, move victim to fresh air. Obtain medical attention if breathing difficulty persists.

2) SKIN

For skin contact, wash immediately with soap and water more 15min.
Obtain immediate emergency medical attention. Before the using cloth and footwear again, washing and dry completely.

3) EYE

Wash eyes immediately with large amounts of water until no evidence of chemical remains (at least 15 minutes). Get medical attention immediately.

4) INGESTION

Maybe a lot of ingestion, seek medical attention.

SECTION 5. FIRE FIGHTING MEASURE

1) FIRE AND EXPLOSION HAZARDS :

A little of flammable. Hot materials(Powder & air compound) may cause thermal Burns



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2) EXTINGUISHING MEDIA :

A fire extinguisher(powder), CO₂, Water(H₂O), general bubble.

3) FIRE FIGHTING

- Move container from fire area if it can be done without risk.
- Do not scatter spilled material with high-pressure water streams.
- Dike for later disposal. Use extinguishing agents appropriate for surrounding fire.
- Avoid inhalation of material or combustion by-products.
- Stay up wind and keep out of low areas

SECTION 6. ACCIDENTAL RELEASE MEASURES

1) OCCUPATIONAL RELEASE

- Collect spilled material in appropriate container for disposal.
- Keep unnecessary people away, isolate hazard area and deny entry.

2) All the origin of a fire(heat, a spark and a flame) is immediate removing, and then to arrange the fire extinguisher in preparation for fire.

3) PREVENTIVE MEASURES FOR THE PROTECTION OF ENVIRONMENT

To prevent the outflow of soil or underwater.

SECTION 7. HANDLING AND STORAGE

1) HANDLING

Use in well-ventilated area. Ground and bond equipment to prevent electrostatic charge when transferring product. Control spilled material to prevent runoff to the sewers and the environment. Using without all lightings(Heat, spark, flame...)

2) STORAGE

Isolate all of lightings(Heat, spark, flame...). Keep in cool, dry and shade area without static electricity. Keep shade area, away from a direct ray of light.



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SECTION 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

1) EXPOSURE LIMITS

No occupational exposure limits established.

- A basis of exposure in chemical products

The name of chemical materials	Standards of exposure
Polyethylene	No exposure limits established
Silica Gel	-TWA : 10mg/m ³ -STEL : - 6 mg/m ³ OSHA TWA(<1% crystal silica) 10 mg/m ³ AGGIH TWA(all corpuscle)(<1% quarts) 6 mg/m ³ NIOSH TWA 10 hours 4 mg/m ³ DFG MAK (inhakable dust fraction)
Magnesium Oxide	15 mg/m ³ OSHA TWA (fuming)<all corpuscle) 10 mg/m ³ OSHA TWA(all corpuscle) (become null according to 58 FR 35338 in June 30, 1993) 10 mg/m ³ AGGIH TWA(fuming) 4 mg/m ³ DFG MAK (inhakable dust fraction) 1.5 mg/m ³ DFG MAK (respirable dust fraction)
Glyceryl Monostearate	No exposure limits established
The name of chemical materials	Standards of exposure
Isobutane	ISOBUTANE 800ppm(1900 mg/m ³) NIOSH recommendation TWA 10 hours 2400mg/m ³ (1000 ml/m ³) DFG MAK (peak limitation category-IV)

2) VENTILATION

• Provide local exhaust ventilation system.



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- Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

3) EYE PROTECTION

- Eye protection not required, but recommended safety glasses for dust.
- Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

4) CLOTHING

Protective clothing is not required for products, but recommended

5) GLOVES

Suitable protective gloves have to wear.

6) RESPIRATOR

- Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Consider warning properties before use.
- A direct small gas mask with , and filter
- Any dust, mist, and fume respirator.
- Any air-purifying respirator with a high-efficiency particulate filter.
- Any powered, air-purifying respirator with a dust, mist, and fume filter
- Any powered, air-purifying respirator with a high-efficiency particulate filter.
- For Unknown Concentrations or Immediately Dangerous to Life or Health
 - Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.
- Any self-contained breathing apparatus with a full facepiece.

7) HYGIENE

When ending work or before the meals must wash hands, and working uniform have to launder.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

1) PHYSICAL STATE : Solid

2) ODOR : Not available

3) pH : Not available



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- 4) SOLUBILITY : Not available
- 5) BOILING POINT : Not available
- 6) MELTING POINT : 95-110°C
- 7) EXPLOSION POINT : Not available
- 8) OXIDATION : Not available
- 9) VAPOR PRESSURE : Not available
- 10) SPECIFIC GRAVITY (water=1) : 0.033 - 0.023
- 11) DISTRIBUTION COEFFICIENT : Not available
- 12) MOLECULAR WEIGHT : Not available

SECTION 10. STABILITY AND REACTIVITY

- 1) STABILITY / REACTIVITY :
Stable at inferiority normal temperatures and pressure.
- 2) CONDITION TO AVOID :
Avoid heat, flames, sparks and other sources of ignition.
- 3) INCOMPATIBILITIES :
combustible materials, halo carbons, halogens, oxidizing materials, acids
- 4) HAZARDOUS DECOMPOSITION PRODUCTS :
Thermal decomposition products : acrolein, aldehydes, oxides of carbon
- 5) POLYMERIZATION : Will not polymerize
- 6) HARMFUL PRODUCTS WHEN DISSOLVE :
CO, CO₂, and many other carbon cyclic products with harmfulness

SECTION 11. TOXICOLOGICAL INFORMATION

- 1) NO TOXICOLOGICAL INFORMATION ABOUT PRODUCTS.



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SECTION 11. TOXICOLOGICAL INFORMATION

2) TOXICOLOGICAL INFORMATION ABOUT PRODUCTS.

The name of chemical materials	Toxicological data
Polyethylene	<ul style="list-style-type: none"> - Toxic Data: 12mg/m³ /inspiration, 30min. -mouse LC50 - Cancerogenic : IARC : Result of experiment on animal Insufficient evidence, Group 3 The Law of Industrial Safe & Health : No provide - Acute toxic level : Toxic: Inspiration - Genesis data of tumor : available
Silica Gel	<ul style="list-style-type: none"> - Cancerogenic : IARC: Result of experiment on a human body -Insufficient evidence Result of experiment on animal Insufficient evidence, Group 3 (shapelessness Silica) The Law of Industrial Safe & Health : No provide - The case which increased more danger according to Exposure: trouble with a respiratory.
Magnesium Oxide	<ul style="list-style-type: none"> - Cancerogenic : The Law of Industrial Safe & Health : No provide - The case which increased more danger according to Exposure : trouble with a respiratory, skin problem, strangeness of Eyes - Genesis data of tumor : available - Additional data : It may interaction with medicine
Glyceryl Monostearate	<ul style="list-style-type: none"> - Toxic Data: >5 mg/kg Oral cavity- mouse LD50 - Cancerogenic : The Law of Industrial Safe & Health : No provide - Acute toxic level : Insufficient evidence
Isobutane	<ul style="list-style-type: none"> - Toxic Data: 157 pph/15min. Inspiration - Mouse LC50 - Cancerogenic : The Law of Industrial Safe & Health : No provide - An effect of section : impetus material : Inspiration - Acute toxic level : Relative non toxic character : Inspiration - Target internal organs : The central nervous system



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SECTION 12. ECOLOGICAL INFORMATION

Not available

SECTION 13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations.

SECTION 14. TRANSPORT INFORMATION

- 1) Suggestions : Inflammable, Attention for a direct ray of light during transport
- 2) U.S. Dept. of Transport : not allowance group.

SECTION 15. REGULATORY INFORMATION

- 1). The law of Industrial Safe & Health : No
- 2) Toxic Substances Control Act : No
- 3) The control of Foreign Laws :
 - OSHA : No
 - TSCA : No provide
 - CERCLA : No
 - SARA 103 Rules : No

SECTION 16. OTHER INFORMATION

- 1) The source of materials
 - ① The standards about make and keep of Material Safety Data Sheet
(Notification No.97-27 of the Labor, October 17th, 1997)
 - ② The standards about make of Material Safety Data Sheet
(Korea Occupational Safety Agency, November 1996)
 - ③ The standards about make of Material Safety Data Sheet of compound substance
(Korea Occupational Safety Agency, November 1996)
 - ④ MSDS of raw material was supplied by suppliers



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- 2) This documents was made for handling of an agent, a purchaser, or a third party.
Therefore, we cannot guarantee about the suitability of special purpose and
commercial expression, also we haven't responsibility to the law with any technical.