SAFETY DATA SHEET
Experimental

Date Prepared: 05/16/2016
SDS No: PMF4

Thermylene

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Thermylene
GENERAL USE: Injection Molding
PRODUCT DESCRIPTION: Mineral Filled Polypropylene
PRODUCT CODE: P7-20MI-A150 50270

MANUFACTURER
Asahi Kasei Plastics North America
Asahi Kasei Chemical Co.
900 E. Van Riper
Fowlerville, MI 48836
Emergency Contact: Product Stewardship
Emergency Phone: 8004444408
Alternate Emergency Phone: 5172235323
Customer Service: 517-223-5352
E-Mail: www.akplastics.com

COMMENTS: Restrictions on use: Please do not use our product for the following:
Medical containers/packaging/equipment/parts of in-vivo, or which contact mucosa, body fluid, blood, chemical solution.
Equipment, parts which contact with food containers/packaging/equipment or drinking water.
Toys which may contact with mouth, drinking water, etc.

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATIONS
Combustible Dust, : This product as shipped is not classified as a combustible dust: however, a combustible concentration of dust may occur if fines are suspended in air (e.g. from cutting or sanding).

GHS LABEL
OSHA Hazard Category: Combustible Dust
GHS Hazard Category: Not Classified
SIGNAL WORD: WARNING

EMERGENCY OVERVIEW
PHYSICAL APPEARANCE: Granular solid. Pellets. Powder or Flakes
IMMEDIATE CONCERNS: Does not require any hazard warning on the label under established regulatory criteria. No known significant effects or critical hazards. Avoid prolonged contact with eyes, skin and clothing. Handling / processing may generate dust which can cause mechanical irritation of the eyes, skin, nose and throat.

POTENTIAL HEALTH EFFECTS
EYES: No significant irritation expected other than possible mechanical irritation. Heated material can cause thermal burns. Emits acrid smoke and irritating fumes when heated to decomposition.
SKIN: No significant irritation expected other than possible mechanical irritation. Heated material can cause thermal burns.
SKIN ABSORPTION: None Expected.

INGESTION: None expected. May cause choking if swallowed.

INHALATION: Dust: Exposure to airborne concentrations well above the recommended exposure limits may cause irritation of the nose, throat, and lungs.

Vapor: If heated to more than 300 C, the product may form vapors or fumes which could cause irritation of the respiratory tract, coughing and shortness of breath.

REPRODUCTIVE TOXICITY

REPRODUCTIVE EFFECTS: Not yet Determined

TERATOGENIC EFFECTS: No component of this product at levels greater than or equal to 0.1% is classified by established regulatory criteria as teratogenic or embryotoxic.

CARCINOGENICITY: None Expected.

MUTAGENICITY: No component of this product at levels greater than or equal to 0.1% is classified by established regulatory criteria as a mutagen.

ROUTES OF ENTRY: Dermal contact. Eye contact. Inhalation. Ingestion

TARGET ORGAN STATEMENT: None

CANCER STATEMENT: None Expected.

IRRITANCY: Not Established

SENSITIZATION: None Expected.

WARNING CAUTION LABELS: None Expected.

HEALTH HAZARDS: None Expected.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Wt.%</th>
<th>CAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-propene. Homopolymer</td>
<td>&lt; 85</td>
<td>9003-07-0</td>
</tr>
<tr>
<td>Mica</td>
<td>~ 5 - 30</td>
<td>12001-26-2</td>
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<tr>
<td>Additives</td>
<td>0-3% confidential</td>
<td></td>
</tr>
<tr>
<td>Colorants</td>
<td>0-3% confidential</td>
<td></td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water. Get medical attention if irritation persists.

SKIN: For hot product, immediately immerse in or flush the affected area with large amounts of cold water to dissipate heat. Cover with clean cotton sheeting or gauze and get prompt medical attention. No attempt should be made to remove material from skin or to remove contaminated clothing as the flesh can be easily torn.

INGESTION: Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel.

INHALATION: If affected by fumes from heated material, remove from source of exposure and move the affected person into fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

EYES: Irritation

SKIN: Irritation

SKIN ABSORPTION: None Expected.

INGESTION: None Expected.
INHALATION: None Expected.
ACUTE EFFECTS: None
CHRONIC EFFECTS: None

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water spray, foam, or dry chemical
EXPLOSION HAZARDS: Dusts at sufficient concentrations can form explosive mixtures with air.
FIRE FIGHTING EQUIPMENT: Should wear positive pressure self contained breathing apparatus (SCBA) and full turnout gear.
SENSITIVE TO STATIC DISCHARGE: Static discharge could be an ignition source for combustible concentration of dust.
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon dioxide and/or carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Vacuum or sweep up material and place in a designated, labeled waste container.
Avoid runoff into storm sewers and ditches which lead to waterways.
Dispose of via a licensed waste disposal contractor.
LARGE SPILL: Contact emergency personnel. Eliminate all ignition sources if safe to do so. Granules spilled on the floor can cause slipping. Fine dust clouds may form explosive mixtures with air. Do not touch or walk through spilled material. Use suitable protective equipment.
ENVIRONMENTAL PRECAUTIONS
WATER SPILL: Keep out of water ways and storm sewers.
LAND SPILL: Vacuum or carefully scoop up spilled material and place in an appropriate container for disposal.
AIR SPILL: Concern if large spill and dust clouds are formed.
GENERAL PROCEDURES: Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air.
SPECIAL PROTECTIVE EQUIPMENT: Should wear chemical/dust goggles

7. HANDLING AND STORAGE

GENERAL PROCEDURES: No smoking. Use with adequate ventilation. Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Avoid dispersal of dust into the air.
HANDLING: Avoid strong oxidizer. Main concern is handling molten materials, which can cause thermal burns. Wear proper PPE. Pneumatic conveying of pellets can generate static electrical charges. Make sure equipment is grounded.
STORAGE: Keep container tightly closed. Keep in well ventilated area. The main storage issue is related to pallet stock slippage and causing injury to personnel.
STORAGE TEMPERATURE: 0°C (32°F) Minimum to 60°C (140°F) Maximum

8. EXPOSURE CONTROLS / PERSONAL PROTECTION
EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)

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<tr>
<th>Chemical Name</th>
<th>Type</th>
<th>ppm</th>
<th>mg/m³</th>
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</thead>
<tbody>
<tr>
<td>Mica</td>
<td>OSHA PEL TWA</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ACGIH TLV TWA</td>
<td></td>
<td>3 R</td>
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</table>

ENGINEERING CONTROLS: Use local exhaust ventilation or other engineering controls to keep airborne levels below recommended exposure limits. Eliminate ignition sources in areas where dust could be generated. Ensure that dust handling systems are designed in a manner to prevent the escape of dust into work area. It is recommended that all dust control equipment such as local exhaust ventilation contain explosion relief vents or an explosion suppression system.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Safety glasses with side shields. Use dust goggles if high dust concentration is generated.

SKIN: Cold or room temp. material: None required. However protective clothing is a good industrial practice.

Hot material: Wear heat resistant protective gloves, clothing and face shield that are able to withstand the temperature of the molten product.

RESPIRATORY: To minimize risk of overexposure to dust, vapor, or fumes, it is recommended to work in a properly ventilated area.

PROTECTIVE CLOTHING: Standard industry clothing is recommended.

WORK HYGIENIC PRACTICES: Wash hands after handling, before eating, smoking, using the lavatory, and at the end of the day.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Granular solid. Pellets. Powder or Flakes

ODOR: Faint odor

COLOR: Brown

MELTING POINT: 155°C to 165°C

THERMAL DECOMPOSITION: > to 300°C

SPECIFIC GRAVITY: 1 to 1.4

10. STABILITY AND REACTIVITY

REACTIVITY: None Expected.

HAZARDOUS POLYMERIZATION: Under normal conditions of storage and use, hazardous polymerization will not occur.

STABILITY: The product is stable

CONDITIONS TO AVOID: If heated to more than 300°C, the product may form vapors or fumes which could cause irritation of the respiratory tract, coughing, and shortness of breath. Avoid creation of dust. Avoid strong oxidizer.

HAZARDOUS DECOMPOSITION PRODUCTS: Fumes or vapors

INCOMPATIBLE MATERIALS: Strong Oxidizing materials

11. TOXICOLOGICAL INFORMATION

GERM CELL MUTAGENICITY: No component of this product at levels greater than or equal to 0.1% is classified by established regulatory criteria as a mutagen.

CARCINOGENICITY
IARC: None Expected.
NTP: None Expected.
OSHA: None Expected.

REPRODUCTIVE TOXICITY: No component of this product at levels greater than or equal to 0.1% is classified by established regulatory criteria as a reproductive toxin.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: No known significant effects or critical hazards.
ECOTOXICOLOGICAL INFORMATION: Not yet Determined
BIOACCUMULATION/ACCUMULATION: None Expected.
GENERAL COMMENTS: Wildlife may ingest plastic pellets. Although not toxic, such materials may physically block the digestive system, causing starvation or death.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Avoid contact of spills of materials and runoff with soils and surface waterways. Consult an environmental professional to determine if local, regional, or national regulations would classify spilled or contaminated materials as hazardous waste. Use only approved transporter, recyclers, treatment, storage or disposal facilities.
FOR LARGE SPILLS: See section 7 and section 8 above
RCRA HAZARD CLASS: None

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)
PROPER SHIPPING NAME: Polypropylene - granular
PRIMARY HAZARD CLASS/DIVISION: None
U.S. SURFACE FREIGHT CLASS: 156200 Class 60
OTHER SHIPPING INFORMATION: Not regulated - Not classified as hazardous for transport
U.S. CUSTOMS HARMONIZATION NUMBER: 3902.10
SPECIAL SHIPPING NOTES: Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of a spill.

15. REGULATORY INFORMATION

UNITED STATES
SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)
311/312 HAZARD CATEGORIES: None
FIRE: No PRESSURE GENERATING: No REACTIVITY: No ACUTE: No CHRONIC: No
SECTION 312 THRESHOLD PLANNING QUANTITY (40 CFR370): na
TITLE III NOTES: None
302/304 EMERGENCY PLANNING
EMERGENCY PLAN: not applicable
CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)
CERCLA REGULATORY: None
CERCLA RQ: None
TSCA (TOXIC SUBSTANCE CONTROL ACT)

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TSCA REGULATORY: All ingredients are listed in TSCA inventory
TSCA STATUS: Listed

CLEAN AIR ACT

40 CFR PART 68—RISK MANAGEMENT FOR CHEMICAL ACCIDENT RELEASE PREVENTION: NA = Not Applicable

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

29 CFR1910.119—PROCESS SAFETY MANAGEMENT OF HIGHLY HAZARDOUS CHEMICALS: NA = Not Applicable

CALIFORNIA PROPOSITION 65

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<tr>
<td>Colorants</td>
<td>0-3%</td>
<td>Cancer</td>
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OSHA HAZARD COMM. RULE: NA = Not Applicable
CLEAN WATER ACT: NA = Not Applicable
Carcinogen: None Expected.
USDA (U.S. DEPARTMENT OF AGRICULTURE): NA = Not Applicable
FIFRA (FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT): NA = Not Applicable
FDA (FOOD AND DRUG ADMINISTRATION): NA = Not Applicable
DEA (DRUG ENFORCEMENT PRECURSOR & ESSENTIAL CHEMICALS) LISTED SUBSTANCE: NA = Not Applicable

CANADA

WHMIS (WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM): Not controlled
DOMESTIC SUBSTANCE LIST (INVENTORY): Listed

16. OTHER INFORMATION

REASON FOR ISSUE: new
APPROVED BY: Product Stewardship
PREPARED BY: Product Steward   Date Prepared: 05/16/2016
INFORMATION CONTACT: 517-223-5000

HMIS RATING

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<th>HEALTH</th>
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<th>PERSONAL PROTECTION</th>
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<td>1</td>
<td>0</td>
<td>A</td>
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NFPA CODES

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