

# Material Safety Data Sheet



*Polymics, Ltd.*  
High Performance Polymers & Compounds

1/31/2012

## I. Product and Company Identification

**Trade name:** PYRAMID™ KD2000, KD4000, KD2000-BK, KD2001

**Part Number:** N/A

**Form:** Compounded Pellet & Powder

**Chemical Family:** Polymer Resin. Poly(etheretherketone)

**Molecular Weight:** Polymer

**Company:** Polymics Ltd.  
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**Emergency Telephone:** Polymics Ltd. 814-357-5860

## II. Composition & Information on Ingredients

Substance	CAS #	wt %	Exposure Limit
Poly(etheretherketone)	29658-26-2	95-100%	None established
Colorant	---	0-5%	None established

## III. Hazards Identification

### EMERGENCY OVERVIEW:

- Spilled material may create slipping hazard.
- Can burn in a fire creating dense, toxic smoke
- Molten plastic can cause severe thermal burns.
- Fumes produced during melt processing may cause eye, skin, and respiratory tract irritation. Severe over-exposure may result in nausea, headache, chills, and fever.
- Secondary operations, such as grinding, sanding, or sawing can produce dust which may present an explosion or respiratory hazard.

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## Hazard Rating:

Health	0
Flammability	1
Reactivity	0

## Potential Personal Hazards

- Skin:** Powder not likely to cause skin irritation. Hot product can cause skin burns
- Eyes:** Product may cause irritation or injury due to mechanical action. Hot fumes can cause eye irritation.
- Inhalation:** May cause irritation. Fumes produced during melt processing may cause eye, skin, and respiratory tract irritation. Severe over-exposure may result in nausea, headache, chills and fever. There are no known toxic effects.
- Ingestion:** Not toxic in normal use.
- Precautions:** Processing fumes inhalation may be irritating to the respiratory tract. If symptoms are experienced remove victim from the source of contamination or move victim to fresh air and obtain medical advice.

## IV. First Aid Measures

- Skin:** Not anticipated under normal conditions. In case of molten product to skin contact, immerse and/or flush affected area with large amounts of cold water. Do not peel off. Seek medical attention immediately.
- Eyes:** If material gets in eyes, flush with water for at least 15 minutes. Have eyes examined and treated by medical physician.
- Inhalation:** Flu-like symptoms are expected if thermal decomposition products are inhaled. Chills, fever, headache, shortness of breath, and coughing are expected. If symptoms persist, consult a physician.
- Ingestion:** Not immediately anticipated under normal conditions. If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.



## V. Fire-Fighting Measures

- Suitable Extinguishing Media:** Water spray mist or foam. Carbon dioxide and dry chemical are not recommended because their lack of cooling capacity may permit re-ignition.
- Combustion Product Hazards:** Fire will produce dense black smoke containing hazardous combustion products, carbon oxides, hydrocarbon fragments, nitrogen oxides.
- Protective Equipment:** Use of self contained breathing apparatus and protective clothing is required. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products.
- Specific Hazards:** Take precautionary measures against static discharges. During processing, dust may form explosive mixture in air. Thermal decomposition can lead to release of irritating gases and vapors.

## VI. Accidental Release Measures

- General:** Sweep or gather up material and place in proper container for disposal or recovery. Do not create a powder cloud by using a brush or compressed air. Avoid contact with skin and eyes. Ensure that there is sufficient ventilation. Avoid dust formation and keep away from sources of ignition. Take precautionary measures against static discharge.
- Waste Disposal:** Incinerate in a licensed facility. Do not discharge into waterways or sewer systems.
- Container Disposal:** Unused material and empty containers must be disposed of in accordance with local, state and federal regulations.
- Environmental Caution:** Do not flush into surface water or sanitary sewer system. Should not be released into the environment.

## VII. Handling Storage

- Handling:** Follow good-standard industrial hygiene practice and provide adequate ventilation. Use adequate ventilation and aggressive housekeeping practice to prevent dust accumulation.
- Storage:** Inert material under normal storage conditions. No specific precautions required.



**VIII. Exposure Control / Personal Protection**

<b><u>Exposure Limit for Dust</u></b>		
<b>Total Dust:</b>	15 mg/m <sup>3</sup>	Time weighted average (TWA) permissible exposure limit (PEL):(OSHA Z1)
<b>Respirable Fraction:</b>	5 mg/m <sup>3</sup>	Time weighted average (TWA) permissible exposure limit (PEL):(OSHA Z1)
<b>Inhalable Fraction:</b>	10 mg/m <sup>3</sup>	Time weighted average (TWA):(ACGIH)
<b>Respirable Fraction</b>	3 mg/m <sup>3</sup>	Time weighted average (TWA):(ACGIH)

**Exposure Controls**

Guidelines/Limits: No components with information, unless noted below

Engineering Controls: When handling powder, use non-sparking tools, grounding, bonding venting, and explosion relief provisions in accordance with accepted engineering practices. During melt processing, maintain a continuous supply of fresh air to the workplace together with the removal of processing fumes.

**Personal Protection**

Hand Protection: Gloves in case of frequent contact with hot material.

Eye/Face Protection: Safety glasses with side-shields or chemical goggles. In addition, use full-face shield when cleaning processing fume condensates from hood, ducts, and other surfaces.

Skin Protection: Long sleeve shirt and full pants are recommended to avoid possibility of hot material coming into contact with skin. Impervious gloves and an apron are also suggested.

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**Respiratory Protection:** If airborne dust is produced through handling, grinding, sanding or sawing molded parts, and is not adequately controlled through ventilation, use a respirator approved for protection from dust. When using this product at elevated temperatures, implement engineering systems, administrative controls or a respiratory protection program (including a respirator approved for protection from organic vapors, acid gases and particulate matter) if processing fumes are not adequately controlled or operators experience symptoms of overexposure. If dust of powder is produced from secondary operations such as sawing or grinding, use a respirator approved for protection from dust.

**Hygiene Measures:** When using, do not eat, drink or smoke.

## IX. Physical & Chemical Properties

<b>Autoignition Temperature:</b>	575 °C	<b>Specific Heat</b>	0.30 cal/g °C
<b>Limiting Oxygen Index</b>	3.5%	<b>Heat of Combustion</b>	7000 cal/g
<b>Thermal Conductivity</b>	6 x 10 cal/sec cm <sup>2</sup>	<b>Self Ignition Temp</b>	595 °C
<b>Crystalline Melting Point</b>	334 °C	<b>UL-94</b>	V-0

<b>Appearance:</b>	Tan (or colored) powder or pellets	<b>Specific Gravity:</b>	1.20-1.30
<b>Boiling Point:</b>	N/A	<b>Solubility In Water</b>	negligible
<b>Melting Point:</b>	310-360 °C	<b>Vapor Pressure:</b>	N/A
<b>Flash Point:</b>	Does not flash	<b>Vapor Density:</b>	Negligible at 25 °C
<b>Odor:</b>	Odorless	<b>Evaporation Rate:</b>	Negligible
<b>% Volatiles:</b>	< 0.5% by weight		

## X. Stability and Reactivity

**Stability:** Stable at normal conditions. Hazardous polymerization does not occur.

**Reactivity:** Not reactive under recommended conditions of handling, storage, processing and use.

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Hazardous Decomposition: Processing fumes evolved above recommended processing conditions may include trace levels of hydrocarbon fragments, phenols, other substituted hydrocarbons, carbon dioxide and carbon monoxide.

Conditions to Avoid: To avoid thermal decomposition, do not overheat. Heating can release hazardous gases. Do not exceed melt temperature recommendations in product literature. In order to avoid autoignition/hazardous decomposition of hot thick masses of plastic, purgings should be collected in small, flat, shapes or thin strands to allow for rapid cooling. Quench in water. Do not allow product to remain in barrel at elevated temperatures for extended periods of time: purge with a general purpose resin.

Incompatibility Dissolved by concentrated sulfuric acid.:

## **XI. Toxicological Information**

LD50/oral/rat: >5000 mg/kg  
LD50/dermal/rabbit: >2000 mg/kg

## **XII. Ecological Information**

Ecological Information: Do not flush into surface water or sanitary sewer system.

Other Information: Ecological damages are not known or expected under normal use.

## **XIII. Disposal Considerations**

Waste Disposal: Recycling is encouraged if possible. Landfill or incinerate in accordance with federal, state and local requirements. Collected processing fume condensates and incinerator ash should be tested to determine waste classification.

US EPA Waste Number: None

## **XIV. Transport Information**

Transport Classification: Not regulated as hazardous for shipment under current transportation guidelines.

## **XV. Regulatory Information**

TSCA (USA): Listed  
DSL/NDSL (Canada): Listed

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## **Other Inventory Information:**

A "Listed" entry above means all chemical components are on the respective inventory list and/or a qualifying exemption exists for one or more components.

## **SARA 313:**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

## **XVI. Other Information**

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