Material Safety Data Sheet

Polymics, Ltd.
High Performance Polymers & Compounds

3-1-2012

I. Product and Company Identification

Trade name: Arylmax ® K6000WC30, K6020WC30, K7500WC30, K7522WC30

Part Number: N/A

Chemical Family: Poly(aryletherketone)

Company:
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II. Composition & Information on Ingredients

Substance	CAS #	wt %	Exposure Limit
Poly(aryletherketone)	---	55-94%	None established
Fluoropolymer Lubricant	---	2 – 15%	None established
Carbon Fiber	---	2-15%	OSHA PEL 8hr TWA 15 mg/m^3 and ACGIH TLV (8-hr TWA) 5 mg/m^3 for non respirable fiber and particulate. OSHA PEL 8hr TWA 5 mg/m^3 for respirable particulate.
Carbon-Based Lubricant	---	2 – 15%	OSHA PEL of 15 mg/m^3 total dust ACGIH TLV of 10 mg/m^3 total dust

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.

Hazard Rating:

Health	**0**
Flammability	**1**
Reactivity	**0**

Potential Physical Hazards

Electrical: Dust, powders and particles may be electrically conductive. Care should be taken to prevent penetration of dusts, powders, and particles into electrical enclosures and electrical equipment.

Potential Personal Hazards

Skin: Powder not likely to cause skin irritation. Molten plastic can cause severe burns to uncovered skin.

Eyes: Product may cause irritation due to mechanical action.

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.

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: Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. If eye irritation persists, consult a specialist.

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 including hydrogen fluoride (HF), carbonyl fluoride (COF2), carbon oxides, hydrocarbon fragments, and nitrogen oxides. Of particular concern is the HF and COF2. These gases are toxic if inhaled or they come into contact with moist skin. HF has an ACGIH PEL TLV (8hr TWA) of 0.5 ppm and a ceiling limit of 2 ppm (1.7 mg/m3). COF2 has an ACGIH TLV of 2 ppm (5.4 mg/m3) and an OSHA PEL TWA of 2 ppm (5 mg/m3).
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.
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

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

Respiratory Protection: Use supplied air equipment for protection from HF decomposition by-product. In situations where exposure to particulates is likely, NIOSH/MSHA approved 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.
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.
Hygiene Measures:	When using, do not eat, drink or smoke.

IX. Physical & Chemical Properties

Appearance:	Black powder or pellets	**Specific Gravity:**	1.27-1.50
Boiling Point:	N/A	**Solubility In Water**	Insoluble
Melting Point:	310-360℃	**Vapor Pressure:**	N/A
Flash Point:	Does not flash	**Vapor Density:**	N/A
Ignition Temperature:	N/A	**Evaporation Rate:**	N/A
Odor:	Odorless	**% Volatiles:**	< 0.7% 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. Heat >400 ℃ will cause decomposition.
Hazardous Decomposition:	Thermal decomposition of product can occur with prolonged exposure to temperatures above 626 F (330 C). This will generate Carbonyl Fluoride and hydrogen fluoride (HF) which is corrosive and may cause burns on contact with skin and other tissue. Processing fumes evolved above

recommended processing conditions may also include trace levels of hydrocarbon fragments, phenols, other substituted hydrocarbons, carbon dioxide, carbon monoxide, oxides of nitrogen, oxides of boron, oxides of titanium, silicone dioxide, hydrogen fluoride (HF) and carbonyl fluoride (COF2).

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.

XI. Toxicological Information

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

Exposure to fumes generate during the processing of fluoropolymer-containing compounds can cause an influenza-like condition called polymer fume fever. Symptoms include fever, chills, chest pains, shortness of breath, and coughing. Symptoms do not necessarily occur at the time of exposure, but may be delayed, passing in 48 to 72 hours. Inhalation from smoke from tobacco contaminated with fluropolymers can also cause polymer fume fever. Limit work exposure to fumes generated during processing. Prohibit smoking in area where fluoropolymer-containing compounds are used and stored.

This product may contain small amounts of residual fluoropolymer monomer that can be released during processing. This has been shown to cause liver and kidney cancer in laboratory animals in a test conducted by the National Toxicology Program (NTP). It is also listed by the Sate of California under Proposition 65 as a carcinogen. Exposures to fluropolymer monomer can occur in newly opened drums and in situations where processing temperatures exceed manufacturers recommendations. Avoid breathing fumes and gases produced in processing or burning of fluropolymer containing parts. To minimize exposures to trace levels of fluropolymer monomer, follow the handling instructions in Section 8 of the MSDS. For additional information, consult the current edition of the guide to the Safe Handling of Fluropolymers published by the Society of Plastics Industry, Inc. (SPI) Fluoropolymer Division.

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. However, the material is not biodegradable.

XIII. Disposal Considerations

Waste Disposal: Recycling is encouraged. 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

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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