Richmond
Aircraft Products

TECHNICAL DATA 1/24/2008

VAC-PAK® HS 8171 BAGGING FILM

Co-Extruded High Temperature Nylon 6 Film

DESCRIPTION:

VAC PAK® HS 8171 co-ex is a green-tinted, transparent, heat-stabilized, co-extruded film produced from a modified nylon resin. **VAC PAK® HS 8171** co-ex is a high temperature nylon film which can be used for cures up to 400°F (205°C).

APPLICATION:

VAC PAK® HS 8171 co-ex is recommended as a bagging film for advanced composite fabrication and other high -temperature / pressure applications where softness, workability, pinhole-free and defect-free films are essential. The co-extrusion process combines multiple layers of resin flow into film prior to exiting the extrusion die. This process represents the most advanced "state-of-the-art" technology in blown film production. **VAC-PAK® HS 8171** co-ex can be heat seamed to meet any custom shape requirements.

MECHANICAL PROPERTIES	**TYPICAL VALUES**	
Tensile strength:	> 14,000 PSI	984 kg/cm²
Elongation:	> 350%	
Tensile modulus:	<75,000 PSI	
THERMAL PROPERTIES	**°F**	**°C**
Maximum use temperature:	400	205
Melt point (DSC):	424	218

VAC-PAK® HS 8171 is available in standard thicknesses of .002" (.051mm) and .003" (.076mm) in a wide variety of sizes in lay-flat tubing, v-sheeting (centerfold) and sheeting.

Call to confirm availability.

STORAGE AND HANDLING: RECOMMENDED USE AND STORAGE OF THIS PRODUCT IS IN RELATIVE HUMIDITY ENVIRONMENT OF 55% OR HIGHER.

13503 Pumice Street, Norwalk, California 90650 · TEL 562-404-2440 · FAX 562-404-9011

MATERIAL SAFETY DATA SHEET

Richmond Aircraft Products

VAC-PAK® HS 8171

1. PRODUCT AND COMPANY NAME

PRODUCT NAME: VAC-PAK® HS 8171

DESCRIPTION: Co-Extruded High Temperature Nylon 6 Film

MANUFACTURER: Richmond Aircraft Products
13503 Pumice Street
Norwalk, CA 90650

FOR MORE INFORMATION CALL: 562-404-2440
IN CASE OF EMERGENCY CALL: 562-404-2440

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient Name	CAS #	% of Ingredient
Nylon 6	(CAS 25038-54-4)	80-85%
Modified Polyethylene	(CAS Trade Secret)	12-18%
Colorants	(CAS Not Available)	0-2%
Caprolactam	(CAS 105-60-2)	0-1%

3. HAZARD IDENTIFICATION

POTENTIAL HEALTH HAZARDS

Route of Entry: N/A
Target Organs: N/A
Inhalation: Not a route of exposure under normal usage. Elevated processing temperatures may release irritating vapors.
Skin Contact: Not considered hazardous.
Eye Contact: Not considered hazardous. May cause mechanical irritation if film comes into contact with the eye.
Ingestion: Not a route of exposure. Not considered hazardous.

4. FIRST AID MEASURES

Inhalation: None needed under normal usage. If exposed to vapors at elevated processing temperatures, remove to fresh air.

Skin Contact: None needed

Eye Contact: None needed under normal usage. If material comes into contact with the eye, flush eyes with water while holding eyelids apart to ensure complete irrigation.

Ingestion: None needed.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

Flash Point (Method Used): N/A

LEL: N/A

UEL: N/A

Extinguishing Method: Carbon dioxide, dry chemical, foam, water or other agents as appropriate for materials in surrounding fire.

Special Fire Fighting Procedures: Wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus and full protective clothing.

Unusual Fire and Explosion Hazards: Molten film at higher temperatures can ignite and will burn.

6. ACCIDENTAL RELEASE MEASURES

(Always wear recommended personal protective equipment.) Collect and place in a solid waste container.

7. HANDLING AND STORAGE

Handling Precautions: Use normal personal hygiene and good housekeeping.

Storage Requirements: Store in a cool, dry area, away from direct heat or sunlight.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Engineering Controls: General room ventilation plus local exhaust at points of fume generation to maintain exposure below the PEL/TLV exposure limits.

Protective Equipment: Use heat resistant gloves if handling melted material. As a general practice in manufacturing areas, safety glasses that conform to ANSI Z87.1 should be worn. A NIOSH/MSHA approved respirator should be worn in areas where the PEL/TLV is exceeded.

Exposure Guideline/Other:

INGREDIENT NAME	ACGIH TLV	OSHA PEL	OTHER LIMIT
Caprolactam (vapor)	TWA = 5 ppm (23 mg/m^3) STEL = 10 ppm (46 mg/m^3)	TWA = 5 ppmN/A (20 mg/m^3) STEL = 10 ppm (40 mg/m^3)	

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear or colored plastic film

Physical Status: Solid

Odor: No odor

pH: N/A

Vapor Pressure: N/A

Vapor Density: N/A

Boiling Point: N/A

Freezing/Melting Point: >420F-485F (215C-250C)

Solubility: Negligible

Spec. Grav./Density: 1.13-1.14

10. STABILITY AND REACTIVITY

Stability:	Normally Stable
Conditions to avoid:	Avoid exposure to open flame or temperatures exceeding recommended processing temperatures. The maximum temperature to which the film can be exposed will vary with exposure (dwell) time. RAP should be contacted if questions arise concerning specific processing conditions.
Materials to avoid (Incompatibility):	Strong oxidizers.
Hazardous Decomposition Products:	Thermal decomposition products may include caprolactam, ammonia, hydrogen cyanide, carbon monoxide, carbon dioxide and combustion by-products (oxidized and non-oxidized hydrocarbons).
Hazardous Polymerization:	Will not occur

11. TOXICOLOGICAL INFORMATION

Immediate (Acute) Effects:	Not determined
Delayed (Sub-chronic and chronic) Effects:	None known
Other Data:	None

12. ECOLOGICAL INFORMATION

Material is considered inert and not expected to be biodegradable or toxic

13. DISPOSAL CONSIDERATIONS

Dispose of in compliance with Federal, state and local government regulations. Usually is considered an inert packaging material that can be recycled or landfilled.

14. TRANSPORT INFORMATION

US DOT Hazard Class: Not regulated
US DOT ID Number: Not applicable

For additional information on shipping regulations affecting this material, contact the information number found in Section 1.

15. REGULATORY INFORMATION

Toxic Substance Control Act (TSCA)

TSCA Inventory Status: All components are listed on the TSCA Inventory.

Other TSCA Issues: None.

SARA Title III/CERCLA

"Reportable Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.

Ingredient Name	SARA/CERCLA RO (lb)	SARA EHS TPO (lb)
No ingredients listed in this section.		

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (1-800-424-8802) and to your Local Emergency Planning Committee.

Section 311 Hazard Class: None.

The following ingredients are SARA 313 "Toxic Chemicals". CAS numbers and weight percents are found in Section 2.

Ingredient Name	Comment
No ingredients listed in this section.	

State Right-To-Know

In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

Ingredient Name	Weight %	Comment
Caprolactam (105-60-2)	<0.9%	Fla. Toxic Subs. Right-to-Know Ill. Toxic Subs. Disclosure to Emp. Act La. Right-to-Know Reporting List Mass. Right-to-Know Substance List N. J. Right-to-Know Substances Pa. Right-to-Know Haz. Substances R. I. Haz. Subs. Right-to-Know Act

Additional Regulatory Information:

This product is not intended to be used in any application which places the product in direct contact with the human body, or in other FDA governed applications, unless specifically designated otherwise in written material supplied by RAP to the purchaser.

WHMIS Classification (Canada):

Not a controlled substance. (Considered to be a manufactured article.)

Foreign Inventory Status:

All base monomers and other components are listed on the EINECS Inventory.

16. OTHER INFORMATION

Current Issue Date: 02/19/2008
Previous Issue Date: 04/01/1997