



Tamarack

HABILITATION TECHNOLOGIES, INC.

Product Family: ShearBan (ENGO) Summary of Material Safety Data Sheets

Low Friction Film: Fluorinated Polymer Film

2. Physical/Chemical Data:

APPEARANCE AND ODOR: Flexible, odorless film, various colors, black and natural (dear)

SOLUBILITY IN WATER: Insoluble

3. Fire and Explosion Hazard Data:

FLASH POINT: N/A

EXTINGUISHING MEDIA: Foam, carbon dioxide, dry chemical.

SPECIAL FIRE FIGHTING PROCEDURES: Wear face mask and self-contained breathing apparatus approved by U.S. Bureau of Mines if there is a danger of inhaling smoke from a fire involving any fluorocarbon.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Product is difficult to ignite and will ordinarily not burn once the source of ignition is removed. In an extreme fire situation, protection from hydrogen fluoride should be employed.

4. Reactivity Data:

STABILITY: Stable

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Toxic gaseous material (HF and fluorocarbon olefins) may be evolved above 230°C.

5. Health Hazard Data:

ROUTES OF ENTRY: N/A

HEALTH HAZARDS (ACUTE AND CHRONIC): Exposure to fumes generated if the product is heated above 230°C may result in "Polymer Fume Fever."

SIGNS AND SYMPTOMS OF EXPOSURE:

"Polymer Fume Fever"—flu-like symptoms (chills, fever, tightness in the chest), appearing two or more hours after exposure and subsiding within 36 to 48 hours, even in the absence of treatment.

6. First Aid:

EMERGENCY FIRST AID TREATMENT: Remove patient to fresh air; call physician.

7. Precautions for Safe Handling and Use:

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: N/A

WASTE DISPOSAL: Landfill is preferred; burning not recommended. With incineration, gaseous products should be removed by alkaline scrubbing.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Provide proper local and general ventilation if product is heated above 230°C. Avoid contamination of smoking materials; do not smoke while cutting, heat sealing, or fabricating material.

Adhesive 1: Hot Melt Adhesive

COMPOSITION/INFORMATION ON INGREDIENTS

IDENTITY CAS NO. % PEL TLV
Copolyamide N/E 91 - 95 N/E N/E
Caprolactam 105-60-2 2 - 4 N/E 0.25 PPM
Additive Proprietary 3 - 5 N/E N/E

HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY:

Eye Contact: Currently, no acute or chronic effects are known.

Skin Contact: Currently, no acute or chronic effects are known. Molten material will produce thermal burns.

Ingestion: No acute or chronic effects are known. It is reasonable to anticipate ingestion of fabric would be irritating to the GI tract.

Inhalation: Currently, no acute or chronic effects are known. Vapors from burning may be irritating

Chronic Toxicity: No effects from chronic exposure are known.

N/E = Not Established N/A = Not Applicable * = See Miscel.

FIRST AID MEASURES

Suggested First Aid:

Ingestion: No harmful effects are anticipated if the Fabrics are swallowed. See a physician if the irritation persists.

Inhalation: No harmful effects are anticipated from breathing fuzz or a low concentration of vapors. If a problem develops, remove person to fresh air and supply oxygen if necessary.

FIRE-FIGHTING MEASURES

Flash Point (Test Method) Autoignition Temp Flammable Limit

N/A N/A LEL=N/A UEL=N/A

Extinguishing Media: Water spray, carbon dioxide, foam or dry chemical.

Special Fire Fighting Procedures: In the event of fire, wear full protective clothing and NIOSH approved self-contained breathing apparatus with full face piece, operated in the positive pressure mode.

Unusual Fire and Explosion Hazards: Fabrics present no special fire or explosion hazard: however dust generated during handling or storage can create explosive mixtures in the air during a fire, irritating and/or toxic gases due to decomposition of the polymer may be generated.

ACCIDENTAL RELEASE MEASURES

Recover the spilled web and place in suitable containers for recycle or disposal.

HANDLING AND STORAGE

Storage and Handling: Handle in accordance with good industrial hygiene and safety practices. Store in a cool and dry place. Keep away from acids and strong oxidizing agents.

EXPOSURE CONTROL/PERSONAL PROTECTION

Ventilation: Provide local exhaust ventilation where heat can cause polymer breakdown e.g. melting, laminating, and where there is a need to draw fuzz and fumes from worker breathing zones. Respirator For conditions where exposure to fuzz and fumes is apparent, a NIOSH approved Protection: respirator for dust mists and fumes appropriate to the airborne concentrations may be worn. Where vapors are generated a NIOSH approved organic respirator suitable to the airborne concentration is recommended.

Eye and Face Safety glasses with side shields are recommended for any type of handling.

Dust-tight Protection: goggles are recommended for dusty operations or areas where vapors accumulate. Other Clothing Wear clean body covering and gloves impervious to dust or vapor to minimize & Equipment: skin contact.

PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: N/A Melting Point: 100-115C

Specific Gravity: 1.1 Vapor Pressure @ 20C: N/A

Vapor Density: N/A Solubility in Water: Negligible

% Volatiles: N/A Evaporation Rate: N/A

Appearance and Odor: Fibrous Fabric

STABILITY AND REACTIVITY

Stability: Compound is stable. Conditions to Avoid: Heating above 340 C

Incompatibility (Materials to Avoid): Acids and strong oxidizing agents.

Hazardous Polymerization: Does not occur.

Hazardous Decomposition Products: Oxides of carbon and nitrogen.

TOXICOLOGICAL INFORMATION

Chronic Toxicity: No effects from chronic exposure are known.

Medical Conditions Prone to Aggravation By Exposure: As with any organic compound that is heated to vaporization, exposure may aggravate preexisting conditions such as colds, allergies, asthma, emphysema, and psoriasis.

Toxicology: Carcinogenicity: No - NTP No - IARC

ECOLOGICAL INFORMATION

No specific ecological effect study has been conducted or data is available.

DISPOSAL CONSIDERATIONS

Recommended Disposal: Dispose of solid waste observing all Local, State and Federal regulations.

TRANSPORT INFORMATION

This product is not regulated for transportation.

REGULATORY INFORMATION

NFPA RATING:

1670-94th Lane NE

Blaine, MN 55449-4323

Health (Blue) 1
Flammability (Red) 1
Reactivity (Yellow) 0
PPE (White) Not Required

OTHER INFORMATION

Revision Information:

Revision Date: 3/5/2009

Supersedes Revision Date: 12/14/2005

The information set forth herein has been gathered from standard reference materials from our supplier and/or test data and is to the best of our knowledge and belief accurate and reliable. Such information is offered solely for your consideration, investigation and verification, and it is not suggested nor guaranteed that the hazard precautions or procedures mentioned are the only ones which exist. Keuchel Associates Inc. **MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, WITH RESPECT TO THE USE OF SUCH INFORMATION OR THE USE OF THE SPECIFIED MATERIAL IDENTIFIED HEREIN IN COMBINATION WITH ANY OTHER MATERIAL OR PROCESS, AND ASSUMES NO RESPONSIBILITY THEREFORE.**

N/E = Not Established N/A = Not Applicable * = See Miscel.

Fabric 1: Nylon/ Spandex

Spandex Textile Data Sheet

Fiber Content 60- 90% Nylon / 10-30%Spandex

This fabric does not contain latex or latex products

Fabric 2: 40-60% Cellulose, 40-60% Polyester Textile

Adhesive 2: Pressure Sensitive Adhesive – Rubber Based

PSA is certified Latex free - Copy date: June 2007

Section II - Hazard Ingredients/Identity Information

Boiling Point	N/A	Specific Gravity (H ₂ O = 1) <i>adhesive content only</i>	1.02 +/- .03
Vapor Pressure (mm Hg.)	N/A	Melting Point <i>adhesive content only</i>	≈ 263°F
Vapor Density (AIR = 1)	N/A	Evaporation Rate (Butyl Acetate = 1)	N/A
Solubility in Water Not Soluble			
Appearance and Odor White/Tan paper appearance; negligible odor			

Section IV - Fire and Explosion Hazard Data

Flash Point/Method Greater than 400°F	Upper Explosive Limit/Lower Explosive Limit N/A
Auto-ignition Temperature N/A	
Appropriate Extinguishers Foam, Dry Chemical, CO ₂ , Water Spray	
Special Fire Fighting Procedures Fire fighters should wear NIOSH/MSHA approved positive pressure self-contained respiratory equipment. Do not use water on molten material to avoid splattering and spreading the fire	
Unusual Fire and Explosion Hazards Decomposition can produce hazardous chemicals. Carbon Monoxide, Carbon Dioxide, and other unknown products may be produced during combustion.	

Section V - Reactivity Data

Route(s) of Entry:	Inhalation? X	Skin? X	Ingestion?
Health Hazards (<i>Acute and Chronic</i>)			
Acute: Molten adhesive and Film products will produce burns to skin areas. Excessive heating may produce irritating vapors, which may cause mild respiratory irritation.			
Chronic: Not known			
Carcinogenicity:	NTP? No	IARC Monographs? No	OSHA Regulated? No
Signs and Symptoms of Exposure			
Irritation of skin and eyes, coughing, nausea, and headache when exposed to vapors and burns if exposed to molten adhesive or film. Either may occur only under excessive heating.			
Medical Conditions Generally Aggravated by Exposure			
None Known			
Emergency and First Aid Procedures			
Inhalation: Remove to fresh air if problem persists contact physician			
Eyes: Not usual route of entry			
Ingestion: Not usual route of entry			
Skin: If burn involvement due to skin contact with molten material, cool as quickly as possible with water, treat with thermal burn procedures and see a physician for removal of adhering material and treatment of burn.			

Section VII - Precautions for Safe Handling and Use

Respiratory Protection (<i>Specify Type</i>) No special requirements under ordinary conditions and where adequate ventilation exists
Eye Protection No special requirements under ordinary conditions. If material does become molten, however, may wear goggles or safety glasses with side shields.
Skin Protection No special requirements under ordinary conditions. If material does become molten, may use any type of rubber thermal insulation gloves and other clothing to protect from thermal burns.

Disclaimer: Information provided in this informational document is believed to be true and accurate as of the revision date listed at the bottom of each page. Information has been taken from manufacture's data sheets, MSDS sheets, and other official statements. Proprietary information has been removed where trade secrets are at risk. If you need additional information please contact Tamarack Habilitation Technologies directly to request the information.