

## Safety Use Instruction Sheet



Film, rolls, strips and sheets of Fluoropolymer coated Polyimide are classified as articles under European Regulation 1907/2006 (REACH) and TSCA program. Therefore no (Material) Safety Data Sheet is legally required. However, Versiv has made a decision to deliver appropriate information to customers in the safe handling and use of such Fluoropolymer coated Polyimide film through this **Safe Use Instruction Sheet**. This **SUIS** sheet follows the exact same format and contains the same information as required in a SDS. *Revision date: 17/01/2024; Version 1.0*

### SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### 1.1 Product Identifier

Commercial product name: Fluoropolymer coated Polyimide Film, PI-PTFE, DF2929

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Temperature and chemical resistant film, low friction with good strength and dielectric properties, used in many automotive, solenoid applications, release film, electronic, electrical, energy, fuel cell aerospace and extreme applications. Supplied mainly as film, of various thicknesses and widths in roll form or converted to industrial customer's specifications.

#### 1.3 Details of the supplier of the Safe Use Instruction Sheet

Name: Versiv Composites Ltd.

Address: Kilrush, Co. Clare, Ireland.

**1.4 Emergency Telephone number** + 353 65 90 80 100  
Responsible department Quality & Technology Dept.

### SECTION 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of substance or mixture

Not considered hazardous under recommended usage conditions

#### 2.2 Label elements

No label required

#### 2.3 Other hazards

Thermal decomposition of the PTFE (at temperatures well above the recommended limit) may cause polymer fume fever with flu like symptoms in humans, especially when smoking contaminated tobacco. Not considered hazardous

**Potential Health Effects:** None under recommended usage conditions

**Ingestion:** N / A under recommended usage conditions.

**Skin Contact:** N / A under recommended usage conditions.

**Inhalation:** N / A under recommended usage conditions.

**Eye Contact:** N / A under recommended usage conditions.

#### 2.4

This version of the product safety data sheet was prepared in compliance with Regulation (EC) No.

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1272/2008 as well as its relevant amendments, on the approximation of laws, regulations and administrative provisions relative to the classification, packaging and labelling of dangerous substances and preparations.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

**Product description:** Fluoropolymer coated Polyimide film

**Hazardous Ingredients:** None

Name:	CAS No.	%	Symbols & Health Risk Phrases
Inert Polyimide film	25038-81-7	50 - 90	-
Polytetrafluoroethylene	9002-84-0	10 – 50	-

**3.2 Mixtures** no mixtures

### SECTION 4. FIRST AID MEASURES

#### 4.1 Description of first aid measures

**Skin:** Wash with soap and water after handling. If skin irritation develops, consult a physician. No hazards which require special first aid. Wash with soap and water. Cool skin with cold water if contacted or burnt with high temperature film. Consult a physician if hot film sticks to the skin. Do not risk peeling off skin.

**Eyes:** Wash eyes with water.  
Consult a physician if irritation persists.

**Inhalation:** Not a probable route of exposure for films

**Ingestion:** Not a probable route of exposure for films

**Other first aid information:** N / A

#### 4.2 Most Important symptoms and effects, both acute and delayed

We have no description of any toxic symptoms

#### 4.3 Indication of any immediate medical attention and special treatments needed

No information available

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### SECTION 5. FIRE-FIGHTING MEASURES

#### 5.1 Extinguishing media

##### **Suitable extinguishing media:**

Water, Carbon Dioxide, Foam, Dry Powder.

#### 5.2 Special hazards arising from the substance or mixture

Product is physiologically inert and non-toxic at normal temperatures. Does not burn without external source of fuel. Fluoropolymers can increase the relative toxic properties of the gases evolved during a fire.

##### **Specific hazards during firefighting**

Polyimide film (PI) chars but does not burn in air. PI will burn in an atmosphere of 100% oxygen. The major off-gases are carbon dioxide and carbon monoxide.

Above 275°C some decomposition of the PTFE will occur, with the evolution of gaseous and particulate products which are toxic and if inhaled, can give rise to a characteristic syndrome with influenza-like symptoms known as "polymer fume fever". These symptoms subside within 24 / 48 hours away from further exposure with no long term effects.

Hazardous thermal decomposition products include: Hydrogen fluoride, fluorinated compounds, carbon oxides

#### 5.3 Advice for firefighters

##### **Special protective equipment for firefighting:**

Use self-contained breathing apparatus, gloves and protective suit.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

#### 6.1 Personal precautions, protective equipment and emergency procedures.

Review Fire Fighting Measures sections before proceeding with clean-up. Use appropriate personal protective equipment. The film is slippery. Avoid slip hazard conditions, especially when wet. Pick up to prevent slipping hazard.

#### 6.2 Environmental precautions

Stable, inert material. No special precautions required.

#### 6.3 Methods and materials for containment and cleaning up

No special procedure or materials required.

#### 6.4 Reference to other sections

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### SECTION 7. HANDLING AND STORAGE

#### 7.1 Precautions for safe handling

Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours) when rolling or winding the fabric. Wear nitrile or cotton gloves. It is recommended to wash your hands thoroughly after handling. Use handling equipment for heavy rolls/ boxes. Keep dry, handle carefully, this material is slippery.

#### 7.2 Conditions for safe storage, including any incompatibilities

Store away from flammable materials

#### 7.3 Specific end use(s)

##### Handling precautions:

When processing e.g. machining, cutting or rupture testing wear safety glasses or appropriate face shield and a P1 dust mask. Local Exhaust Ventilation must be used to keep dust levels below acceptable limit. Machining or cutting or tensile testing may produce small amounts of dust. Extract and clean any such dust or fumes away from the workspace. Avoid direct skin contact with polyimide film if possible. Wear a P1 dust mask if there is risk of generating & inhaling such fibers.

Above 275°C some decomposition of the PTFE will occur, with the evolution of gaseous and particulate products which are toxic and if inhaled, can give rise to a characteristic syndrome with influenza-like symptoms known as "polymer fume fever". These symptoms subside within 24 / 48 hours away from further exposure with no long term effects. Keep away from ignition sources- do not smoke while using Fluoropolymers.

Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours) when rolling or winding the fabric.

Thicker films have stiff sharp edges which can cause cuts.

Nicks, cuts or tears on the polyimide based film can propagate quickly across the web and result in the web tearing easily.

The film is fully airtight and could cause asphyxiation if placed over a person's head or airways. For industrial use only. Keep away from children.

**Storage:** No special requirements. Store in a dry place, preferably 20°C to 30°C.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1 Control Parameters

No special controls required

#### 8.2 Exposure controls

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### Engineering controls

Safe handling of PI at high temperatures (above 200°C) requires adequate ventilation. If small quantities of PI are involved, normal air circulation may be all that is needed in case of overheating. Whether existing ventilation is adequate or not at higher temperatures will depend on the combined factors of film quantity, temperature and exposure time. Use static dissipation equipment in situation where static electricity is likely to be generated. Extraction & ventilation recommended if machining, slitting or cutting this material.

**Eye protection** Safety glasses are recommended as good industrial practice.

**Hand protection** Gloves (cut resistant) are recommended as good industrial practice. Wear heat resistant gloves in high temperature use of this product

**Skin and body protection** Not normally required. Avoid contact. Sharp edges of thicker films could cause cuts on exposed skin.

**Hygiene measures** Not normally required

**Respiratory protection** Not normally required, provided there is no dust. Use extraction and wear a P1 dust filter mask if continuously machining or cutting large volumes of the fabric.

**Individual protection measures** Not normally required

**Exposure controls for hazardous components:** N / A under recommended usage conditions.

**Personal protective equipment:** None required under normal processing conditions.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Form	Solid plastic film,
Colour	various, normally dark amber / orange tint, semi-transparent
Odour	none
Odour threshold	none

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pH	neutral
Melting point	Polyimide has no melting point, it chars. PTFE melts at 327°C.
Boiling point	Polyimide chars. PTFE N/A
Flash point	Does not flash
Evaporation rate	No evaporation loss under 275°C
Flammability (solid, gas)	Not flammable at recommended temperatures, UL 94 V-0 rated.
Lower explosion limit	No information available
Upper explosion limit	No information available
Vapour pressure	No information available
Relative vapour pressure	No information available
Relative density	1.425 g/cm <sup>3</sup> Polyimide; 2.2 g/cm <sup>3</sup> PTFE
Water solubility	Not soluble in water
Partition coefficient n-octanol/water	No information available
Auto ignition temperature	No information available
Decomposition Temperature	Decomposition at > 400°C
Viscosity dynamic	No information available
Explosive properties	Not considered explosive
Oxidising properties	Not an oxidiser
<b>9.2 Other data</b>	None

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### SECTION 10. STABILITY AND REACTIVITY

- |  |   |
|--|---|
| <b>10.1 Reactivity</b>                         | Stable at normal temperatures up to 400°C   |
| <b>10.2 Chemical stability</b>                 | Very stable chemically at recommended temperatures  |
| <b>10.3 Possibility of hazardous reactions</b> | Stable under recommended storage and use  |
| <b>10.4 Conditions to avoid:</b>               | Use Local Exhaust Ventilation to avoid breathing any fumes evolved if processing above 400°C.   |
| <b>10.5 Incompatible materials</b>             | Strong acids & strong oxidizers. PTFE will reacts with molten alkali metals and interhalogen compounds. Will burn in atmosphere of 95% oxygen when an ignition source is present. |
| <b>10.6 Hazardous decomposition products</b>   | Carbon oxides, Nitrogen oxides (NOx). PTFE thermal decomposition will evolve hydrofluoric acid, carbonyl fluoride, and other perfluoroolefins.                                    |

### SECTION 11. TOXICOLOGICAL INFORMATION

#### 11.1 Information on toxicological effects

Acute dermal toxicity	This information is not available
Skin irritation	Not considered as an irritant
Eye irritation	This information is not available
Sensitisation	This information is not available
Germ cell mutagenicity	This information is not available
Carcinogenicity	This information is not available
Reproductive toxicity	This information is not available.
Teratogenicity	This information is not available
STOT-single exposure	This information is not available
STOT-repeated exposure	This information is not available
Aspiration hazard	This information is not available

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### SECTION 12. ECOLOGICAL INFORMATION

#### 12.1 Toxicity

This information is not available

#### 12.2 Persistence and degradability

This information is not available

#### 12.3 Bio accumulative potential

This information is not available

#### 12.4 Mobility in soil

This information is not available

#### 12.5 Results of PBT and vPvB assessment

This information is not available

#### 12.6 Other adverse effects

This information is not available

No known harmful effects on the environment.

### SECTION 13. DISPOSAL CONSIDERATIONS

#### 13.1 Waste treatment methods

##### Product

Landfill or incinerate in compliance with local regulations.

##### Contaminated packaging

Dispose as solid waste according to local regulations.

### SECTION 14. TRANSPORT INFORMATION

This material is not regulated for transport

#### Land Transport (ADR/RID)

14.1 UN Number	Not applicable
14.2 UN Proper Shipping name	Not applicable
14.3 Transport Hazard Class(es)	Not applicable
14.4 Packing group	Not applicable
14.5 Environmental hazards	None



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14.6 Special precautions for user Not classified as dangerous for transport

### Inland waterway transport (ADN)

Not relevant

### Air Transport (IATA)

14.1 UN Number Not applicable  
14.2 UN Proper Shipping name Not applicable  
14.3 Transport Hazard Class(es) Not applicable  
14.4 Packing group Not applicable  
14.5 Environmental hazards None  
14.6 Special precautions for user Not classified as dangerous for transport

### Sea transport (IMDG)

14.1 UN Number Not applicable  
14.2 UN Proper Shipping name Not applicable  
14.3 Transport Hazard Class(es) Not applicable  
14.4 Packing group Not applicable  
14.5 Environmental hazards None  
14.6 Special precautions for user Not classified as dangerous for transport

### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant

## SECTION 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture

15.2 Chemical safety assessment

## SECTION 16. OTHER INFORMATION

This version of the product safety data sheet was prepared in compliance with Regulation (EC) No. 1907/2006 (in particular as amended by Regulation (EU) No. 453/2010 with respect to SDSs) and Regulation (EC) No. 1272/2008 as well as their relevant amendments, on the approximation of laws, regulations and administrative provisions relative to the classification, packaging and labelling of dangerous substances and preparations.

The above information describes exclusively the safety requirements of the product(s) and is based on our present-day knowledge. It does not represent a guarantee for the properties of the product(s) described in terms of the legal warranty regulations. Properties of the product are to

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**be found in the respective product leaflet.**

**The information contained in this sheet does not constitute a hazard assessment, and should not be used in place of the user's own assessment of workplace risks as required by other health and safety legislation.**

Version	0.0	SUIS first Issue	21/12/2020	By: B.McN	App. By: JK
Version	1.0	Change company name to Versiv. Tear risk	17/01/2024	By: B.McN	App. By: JK