

SAFETY DATA SHEET

Section 1. Identification

Manufacturer

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Product Name: **FastRise Family**

Specific Use: Laminates for circuit boards.

Section 2. Hazards Identification

Classification: This product as-sold is NOT classified as a hazardous chemical as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Label Elements: This product as-sold is NOT classified as a hazardous chemical as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200.

Precautionary Statement: This product as-sold is NOT classified as a hazardous chemical as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200.

Hazards Not Otherwise Classified: Before use refer to the “Guide to the Safe Handling of Fluoropolymer Resins”, published by the Society of the Plastics Industry.

Section 3. Composition/Information on Ingredients

Substance/Mixture:

| Ingredient Name | CAS Number | Weight % |
|--------------------------------|--------------|-----------|
| Polytetrafluoroethylene (PTFE) | 9002-84-0 | 15% - 45% |
| Silica, amorphous | 7631-86-9 | 20% - 60% |
| Confidential substance | Confidential | 5% - 18% |

Section 4. First Aid Measures

Description of Necessary First Aid Measures

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|----------------------|---|
| Inhalation: | No special treatment needed. |
| Skin Contact: | No special treatment needed. |
| Eye Contact: | No special treatment needed. |
| Ingestion: | If product has been swallowed, get medical attention immediately. |

Most Important Symptoms/Effects, Acute and Delayed

Potential Acute Health Effects

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|----------------------|-------------------------------|
| Inhalation: | No known significant effects. |
| Skin Contact: | No known significant effects. |
| Eye Contact: | No known significant effects. |
| Ingestion: | No known significant effects. |

Over-Exposure Signs/Symptoms

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|----------------------|-------------------------------|
| Inhalation: | No known significant effects. |
| Skin Contact: | No known significant effects. |
| Eye Contact: | No known significant effects. |
| Ingestion: | No known significant effects. |

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary

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|-----------------------------|------------------------------|
| Notes to Physician: | No special treatment needed. |
| Specific Treatments: | No special treatment needed. |

Section 5. Fire-Fighting Measures

Suitable Extinguishing

Media: Water Spray, Carbon Dioxide (CO₂), Dry Chemical, Foam

Hazardous Thermal Decomposition

Products: Hydrogen Fluoride, Carbonyl Fluoride, Carbon Monoxide

Special Protective Equipment and Precautions for Fire-Fighters:

Wear self-contained breathing apparatus and protective suit. Wear neoprene gloves during cleaning up work after a fire. Protect from hydrogen fluoride fumes which react with water to form hydrofluoric acid.

Section 6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Refer to Sections 4, 5 and 8.

Methods and Materials for Containment and Cleaning Up: Material for disposal should be placed in appropriate containers. Dispose of dry solids in a landfill that is permitted, licensed or registered, to manage industrial solid waste. Incinerate only if incinerator is capable of scrubbing out hydrogen fluoride and other acidic combustion products.

Section 7. Handling and Storage

Precautions for Safe Handling: No special handling precautions needed.

Conditions for Safe Storage, Including Any Incompatibilities: No special restrictions on storage with other products.

Section 8. Exposure Controls/Personal Protection

Occupational Exposure Limits

| Ingredient Name | CAS Number | OSHA PEL Exposure Limits | ACGIH TLV Exposure Limits |
|--------------------------------|-------------------|--------------------------------------|-------------------------------------|
| Polytetrafluoroethylene (PTFE) | 9002-84-0 | None. | None. |
| Silica, amorphous dust | 7631-86-9 | 8 HR TWA Dust = 80 mg/m ³ | 8 HR TWA Dust = 6 mg/m ³ |

Appropriate Engineering Controls: No special controls needed.

Individual Protection Measures

Respiratory Protection: No special protective measures needed.
Eye/Face Protection: No special protective measures needed.

Section 9. Physical and Chemical Properties

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|-----------------------------------|-----------------|
| Physical State: | Solid. |
| Color: | Tan. |
| Odor: | Odorless. |
| Odor Threshold: | Not applicable. |
| pH: | Not applicable. |
| Melting Point: | 320°C - 340°C |
| Boiling Point: | Not applicable. |
| Flash Point: | Does not flash. |
| Evaporation Rate: | Not applicable. |
| Flammability: | Not flammable. |
| Explosive Limits: | Not applicable. |
| Vapor Pressure: | Not applicable. |
| Vapor Density: | Not applicable. |
| Specific Gravity: | 2.4 |
| Solubility: | Insoluble. |
| Auto-Ignition Temperature: | 520°C |
| Decomposition Temperature: | 470°C |
| Viscosity: | Not applicable. |

Section 10. Stability and Reactivity

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|--|---|
| Reactivity: | Not reactive under recommended storage conditions. |
| Chemical Stability: | Stable under recommended storage conditions. |
| Possibility of Hazardous Reactions: | Hazardous polymerization does not occur under recommended storage conditions. |
| Conditions to Avoid: | Do not overheat. High temperatures can produce irritating or toxic fumes. Refer to the "Guide to the Safe Handling of Fluoropolymer Resins", published by the Society of the Plastics Industry. |
| Incompatible Materials: | Finely divided aluminum, powdered metals, and very strong oxidizers, such as fluorine. |
| Hazardous Decomposition Products: | Fluorinated hydrocarbons, carbonyl fluoride, hydrogen fluoride. |

Section 11. Toxicological Information

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| Information on Likely Routes of Exposure: | Inhalation: No known significant effects. Skin Contact: No known significant effects. Eye Contact: No known significant effects. Ingestion: No known significant effects. |
| Acute Toxicity: | Polytetrafluoroethylene (PTFE): Oral LD50 = >11,280 mg/kg (rat) Silica, amorphous dust: Intratracheal LD50 = 96.77 mg/kg (mouse) |

Skin Corrosion/Irritation: No known significant effects.

**Serious Eye Damage/
Irritation:** No known significant effects.

**Respiratory or Skin
Sensitization:** No known significant effects.

Germ Cell Mutagenicity: No known significant effects.

Carcinogenicity:

| Ingredient Name | CAS Number | OSHA | IARC | NTP |
|--------------------------------|-------------------|-------------|-------------|------------|
| Polytetrafluoroethylene (PTFE) | 9002-84-0 | No | 3 | None |
| Silica, amorphous | 7631-86-9 | No | 3 | None |

Reproductive Toxicity: No known significant effects.

**Specific Target Organ
Toxicity Single Exposure:** No known significant effects.

**Specific Target Organ
Toxicity Repeated
Exposure:** Silica, amorphous dust: Inhalation; 5.41 mg/m³, 5 day-intermittent (rat), Changes in lung.

Aspiration Hazard: No known significant effects.

Section 12. Ecological Information

Aquatic Toxicity: No known significant effects.

Terrestrial Toxicity: No known significant effects.

**Persistence and
Degradability:** No known significant effects.

**Bioaccumulative
Potential:** No known significant effects.

Mobility in Soil: No known significant effects.

Other Adverse Effects: None of the components listed are Ozone Depleting Substances.

Section 13. Disposal Considerations

- Disposal Methods:** Disposal should be made in accordance with federal, state and local regulations. Dispose of dry solids in a landfill that is permitted, licensed or registered to manage industrial solid waste. Incinerate only if incinerator is capable of scrubbing out hydrogen fluoride and other acidic combustion products.
- RCRA Classification:** Not regulated.

Section 14. Transport Information

- DOT Hazardous Materials:** None of the components are listed.
DOT Marine Pollutants: None of the components are listed.
- Transport Information:** Not classified as dangerous goods according to the national and international regulations on the transport of dangerous goods.
- Special Transport Precautions for User:** No special restrictions when transporting product.

Section 15. Regulatory Information

United States Federal Regulations

- Clean Air Act 112b HAPs:** None of the components are listed.
Clean Air Act 112r EHS: None of the components are listed.
Clean Air Act 602 Class I Ozone Depleting Substances: None of the components are listed.
Clean Air Act 602 Class II Ozone Depleting Substances: None of the components are listed.
Clean Air Act SOCM Chemicals: None of the components are listed.
Clean Water Act 311: None of the components are listed.
DHS Chemicals of Interest: None of the components are listed.
OSHA PSM Highly Hazardous Chemicals: None of the components are listed.
SARA 302 EHS TPQ: None of the components are listed.
SARA 304 EHS RQ: None of the components are listed.
SARA 311/312: None of the components are listed.
SARA 313 TRI: None of the components are listed.
TSCA Chemical Substance Inventory: Listed; Polytetrafluoroethylene (PTFE), 9002-84-0; Silica, amorphous, 7631-86-9; Confidential substance.
TSCA HPV Chemical: None of the components are listed.
TSCA PMNACC Addendum: None of the components are listed.
TSCA 12(b) Chemicals Listings: None of the components are listed.

States Regulations

California Hazardous Substances: Listed; Silica, amorphous, 7631-86-9.

California Proposition 65: None of the components are listed.

Delaware List of Chemicals: None of the components are listed.

Idaho Toxic Air Pollutants: None of the components are listed.

Illinois Toxic Air Contaminates: None of the components are listed.

Maine HAPs: None of the components are listed.

Massachusetts Hazardous Substances: Listed; Silica, amorphous, 7631-86-9.

Michigan Critical Materials: None of the components are listed.

Minnesota Hazardous Substances: Listed; Silica, amorphous, 7631-86-9.

New Jersey RTK: None of the components are listed.

New Jersey TCPA EHS: None of the components are listed.

New York Hazardous Substances: None of the components are listed.

North Carolina Toxic Air Pollutants: None of the components are listed.

Pennsylvania Hazardous Substances: Listed; Polytetrafluoroethylene (PTFE), 9002-84-0; Silica, amorphous, 7631-86-9.

Washington PELs: None of the components are listed.

West Virginia Toxic Air Pollutants: None of the components are listed.

Wisconsin Hazardous Air Contaminates: None of the components are listed.

International Regulations

Australia Inventory of Chemical Substances (AICS): Listed; Polytetrafluoroethylene (PTFE), 9002-84-0; Silica, amorphous, 7631-86-9; Confidential substance.

Canada CEPA Toxic Substances: None of the components are listed.

Canada DSL Inventory: Listed; Polytetrafluoroethylene (PTFE), 9002-84-0; Silica, amorphous, 7631-86-9; Confidential substance.

Canada NDSL Inventory: None of the components are listed.

Canada Priority Substances Lists: None of the components are listed.

China Inventory of Existing Chemical Substances (IECSC): Listed; Polytetrafluoroethylene (PTFE), 9002-84-0; Silica, amorphous, 7631-86-9; Confidential substance.

EU Substances of Very High Concern: Does not contain REACH SVHCs greater than 0.1%.

EU REACH Classification: Article.

EU RoHS Substances: None of the components are listed.

EU WEEE Directive: Compliant.

Europe EINECS: Listed; Silica, amorphous, 7631-86-9.

Japan Inventory of Existing & New Chemical Substances (ENCS): Listed; Polytetrafluoroethylene (PTFE), 9002-84-0; Silica, amorphous, 7631-86-9; Confidential substance.

Korea Existing Chemicals Inventory (KECI): Listed; Polytetrafluoroethylene (PTFE), 9002-84-0; Silica, amorphous, 7631-86-9; Confidential substance.

Malaysia EHS Register: Listed; Silica, amorphous, 7631-86-9.

New Zealand Inventory of Chemicals (NZIoC): Listed; Polytetrafluoroethylene (PTFE), 9002-84-0; Silica, amorphous, 7631-86-9; Confidential substance.

Philippines Inventory of Chemicals and Chemical Substances (PICCS): Listed; Polytetrafluoroethylene (PTFE), 9002-84-0; Silica, amorphous, 7631-86-9; Confidential substance.

Taiwan Inventory (CSNN): Listed; Polytetrafluoroethylene (PTFE), 9002-84-0; Silica, amorphous, 7631-86-9; Confidential substance.

Section 16. Other Information

NON-WARRANTY: The information provided in this Safety Data Sheet is based upon the research and experience of Taconic. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, and disposal and is not to be considered a warranty or quality specification. Each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified. No representation or warranty is made concerning the accuracy or completeness of the information presented in this publication.