SAFETY DATA SHEET

NITTO DENKO AUTOMOTIVE NEW JERSEY
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Fax: 732-364-4985

Section 1: Identification

<table>
<thead>
<tr>
<th>Material Name</th>
<th>P422</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Teflon tape with silicone adhesive</td>
</tr>
</tbody>
</table>
| Production Application | > Excellent high temperature resistance  
> Impervious to most chemical attacks, including acids, solvents, fuels and most alkalis. |
| Emergency Phone | > Operates over a wide range of temperatures: 250° to 500° F |
| Mailing Address | 1-Apr-11 |

Section 2: Hazards Identification

(Based on Teflon Backing)

Inhalation of fumes from overheating FEP copolymer can cause polymer fume fever which is a flu-like illness with symptoms of fever, chills, cough, lasting approximately 24 hours in duration. There can be persistent pulmonary effects in individuals, especially smokers, who have had repeated episodes of polymer fume fever. Protect against exposure to help provide protection against any potential chronic effects. Smokers should wash their hands before smoking to avoid contamination. Small amounts of Hydrogen Fluoride, Carbonyl Fluoride and Perfluoroisobutylene may also be evolved when FEP copolymer is burned or overheated.

Inhalation of low concentrations Hydrogen Fluoride can include symptoms of choking, coughing and severe eye, nose and throat irritation followed after a symptom less period of 1 to 2 days by fever, chills, difficulty in breathing, cyanosis and pulmonary edema. Acute or chronic exposure can injure the liver and kidneys.

Inhalation, ingestion or skin or eye contact with Carbonyl Fluoride may at first include skin irritation with discomfort or rash; eye corrosion with corneal or conjunctival ulceration; irritation of the upper respiratory passages; temporary lung irritation with cough, discomfort, difficulty breathing or shortness of breath. Symptoms may not occur immediately.

Perfluoroisobutylene is extremely toxic with inhalation as the most likely route of exposure. Inhalation may cause severe symptoms of pulmonary edema with wheezing, difficulty in breathing, coughing up sputum and bluish discoloration of skin. Coughing and chest pain may occur at first, other symptoms may be delayed then become rapidly worse.

Individuals with preexisting lung disease may have increased susceptibility to toxic overexposure from thermal decomposition products.
### Exposure Limits of Decomposition Products from Overheating

<table>
<thead>
<tr>
<th>VENDOR</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>ACGIH TLV</th>
</tr>
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<tbody>
<tr>
<td>Acceptable TWA</td>
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<table>
<thead>
<tr>
<th>Hydrogen Fluoride</th>
<th>3 ppm</th>
<th>3 ppm</th>
<th>3 ppm, na</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 min TWA</td>
<td>8 hr TWA as F</td>
<td>2.6 mg/m³ ceiling as F</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Carbonyl Fluoride</th>
<th>na</th>
<th>na</th>
<th>2 ppm</th>
<th>5 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.4 mg/m³, 8 hr TWA</td>
<td>13 mg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Perfluoroisobutylene</th>
<th>.01 ppm 8 hr TWA</th>
<th>na</th>
<th>Ceiling .01 ppm</th>
<th>na</th>
</tr>
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<tbody>
<tr>
<td>.03 ppm 15 min TWA</td>
<td>0.082 mg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Skin
If heated above 260 degrees C, emissions could cause skin irritation; skin irritation can also develop if dust is generated.

### Eye
If heated above 260 degrees C, emissions could cause eye irritation.

### Ingestion
Not a probable route of exposure.

### Section 3: Composition

<table>
<thead>
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<th>%</th>
<th>CAS#</th>
</tr>
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<tr>
<td>Teflon Backing (FEPcopolymer)*</td>
<td>68-70 25067-11-2</td>
</tr>
<tr>
<td>Silicone Adhesive</td>
<td>30-32 not available</td>
</tr>
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</table>

*Dust values shown

### Section 4: First-Aid Measures

**Inhalation**
Consult physician if necessary. If exposed to fumes from overheating or combustion, move to fresh air. Consult physician if symptoms persist.

**Skin**
Not likely to be hazardous to skin but cleansing the skin after use is advisable. If molten polymer gets on skin, cool immediately with cold water. Do not attempt to peel polymer from skin. Obtain medical treatment for burn.

**Eye**
If occurs, immediately flush eyes with plenty of water for at least 15 mins. Call physician.

**Ingestion**
Not likely to occur, however, consult physician if necessary.

### Section 5: Fire-Fighting Measures

(based on Teflon backing MSDS)

**Flash Ignition Temperature**
530-550C (986-1022F) per ASTM D1929

**Self Ignition Temperature**
520-560C (968-1040F) per ASTM D1929

**Limiting Oxygen Index**
>95 per ASTM D2863

**Extinguishing Media**
Water, foam dry chemical, CO2

**Degradation Products**
Above 275C (527F): particulate matter which can cause polymer fume fever
Above 400 C (750 F): Hydrogen Fluoride, Carbonyl Fluoride
Perfluoroisobutylene

**Fire Fighting Equipment**
Wear positive pressure self-contained breathing apparatus and full protective equipment. As hydrogen fluoride may evolve as a degradation product at temperatures above 400 C (750 F), protect from hydrogen fluoride fumes which can react with water to form hydrofluoric acid. Wear Neoprene gloves when handling refuse from a fire.
Section 6: Accidental Release

Spill/Leak Procedure
Due to the physical nature of this material, not expected. Should material be released, pick up to prevent slipping hazard.

Protective Equipment
Respiratory
Not required for normal use but self contained breathing apparatus recommended under emergency conditions where thermal decomposition is occurring.

Skin
Gloves recommended to minimize cuts due to handling.

Eyes
Safety glasses recommended to minimize particulate entry or puncture to eyes

Section 7: Handling & Storage

Handling (personnel)
Avoid contamination of tobacco and it's products with dust from this product.

Handling (physical)
Do not clean this material off equipment without local exhaust and respirator.

Storage
Store in a cool, dry area away from heat, sparks and flames.

Section 8: Exposure Controls & Personal Protection

(Based on Teflon Backing)

Ventilation
Local ventilation should be adequate under normal conditions.

Eye Protection
Wear safety glasses. If using heated material, wear coverall splash goggles and face shield.

Skin Protection
If contact with molten/hot material is possible, wear heat resistant clothing and footwear.

Respiratory Protection
Where particulate may exist, at less than 400 C (750 F), a NIOSH/MSHA approved dust/mist cartridge respirator may provide protection from fume fever. At higher temperatures, if ventilation is not adequate to maintain exposure limits of decomposition products (see Section 5), use a positive pressure air supplied respirator. Air purifying respirators may not provide adequate protection.

Section 9: Physical & Chemical Properties

(Based on Teflon Backing)

Specific Gravity
2.1-2.2

Melting Point
260 - 275 C (500 -527F)

% Volatile
Unknown

Solubility In Water
Insoluble

Appearance
Grayish brown tape

Section 10: Stability & Reactivity

(Based on Teflon Backing)

Stability
Expected to be stable at normal temperatures and storage conditions.

Incompatibilities
Can react with finely divided metal powders and potent oxidizers like fluorine (F2) and related compounds (e.g., chlorine tetra fluoride, CIF3). Contact with incompatibles can cause fire, explosion.

Potential Decomposition Prods.
Above 275C (527F): particulate matter which can cause polymer fume fever
Above 400 C (750 F): Hydrogen Fluoride, Carbonyl Fluoride Perfluoroisobutylene

Hazardous Polymerization
Not expected

Section 11: Toxicological Information

This finished product does not have corresponding toxicological information.

Section 12: Ecological Information

Aquatic Toxicity
Insoluble
Section 13: Disposal

Disposal

Dispose of in accordance with state and local regulations.

The Customer is responsible for the proper disposal of any waste generated as a result of the use of the Product or of the Product itself, and is responsible for complying with all applicable laws, rules and regulations relating to the management, storage, treatment, shipment and disposal of such waste or Product ("Waste Management Practices"). "Product" includes anything sold by Nitto Denko Corporation and/or any affiliates or subsidiaries ("Company") to Customer.

The Company is not responsible for any of the Customer's Waste Management Practices. As part of those practices, Customer must separate packaging from Product before disposal. Further, Customer should review and comply with this MSDS prior to any such disposal.

Customer shall hold harmless the Company, its agents, contractors, successors and assigns from any and all liability, claims, loss, damage, death or injury, including reasonable attorneys fees and costs, arising out of or relating to Customer's Waste Management Practices.

Section 14: Transport Information

United States Dept. of Transportation:

Non regulated

Section 15: Regulatory Information

TSCA listed substances:
Yes

EU Directive 2002/95/EC, Restriction of Hazardous Substances (ROHS): Compliant

Section 16: Other Information

References:
Backings Safety Data Sheet

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