**I. Product Information**

**Product Name:** AFT-1006  
**Trade Name:** None assigned

**II. NFPA (0 = No Hazard; 4 = Severe Hazard)**

<table>
<thead>
<tr>
<th>Health</th>
<th>Reactivity</th>
<th>Fire</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

**III. Ingredient Information**

<table>
<thead>
<tr>
<th>Hazardous Components</th>
<th>CAS Number</th>
<th>OSHA PEL (mg/m³)</th>
<th>ACGIH TLV (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Oxide</td>
<td>1344-28-1</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Barium Sulfate</td>
<td>7727-43-7</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Fiberglass</td>
<td>Not Assigned</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Magnesium Oxide</td>
<td>1309-48-4</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Mineral Fiber</td>
<td>Not Listed</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Particulate, Not Regulated</td>
<td>Not Applicable</td>
<td>15</td>
<td>10</td>
</tr>
</tbody>
</table>

**IV. Physical Data**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point (°F): NA</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate (Butyl Acetate = 1): NA</td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure (mm Hg): NA</td>
<td></td>
</tr>
<tr>
<td>Specific Gravity (Water = 1): 1.95 (Typical)</td>
<td></td>
</tr>
<tr>
<td>Water Solubility (%): NA</td>
<td></td>
</tr>
<tr>
<td>Melting Point (°F): NA</td>
<td></td>
</tr>
<tr>
<td>Vapor Density (Air = 1): NA</td>
<td></td>
</tr>
<tr>
<td>% Volatile by Volume: NA</td>
<td></td>
</tr>
<tr>
<td>Appearance and Odor:</td>
<td>Tan to light brown, with light phenolic odor</td>
</tr>
</tbody>
</table>

**V. Fire and Explosion Data**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point (°F): NA</td>
<td>NA</td>
</tr>
<tr>
<td>Flammable Limits:</td>
<td>LEL = NA</td>
</tr>
<tr>
<td>UEL = NA</td>
<td></td>
</tr>
<tr>
<td>Extinguishing Media:</td>
<td>Water, foam, dry chemical</td>
</tr>
<tr>
<td>Unusual Fire &amp; Explosion Hazards:</td>
<td>None</td>
</tr>
</tbody>
</table>

**Special Fire Fighting Procedures:** Self-contained breathing apparatus (SCBA) should be used in a sustained fire.

**VI. Health Data:**

**Mineral Wool Fiber:** Limited evidence of carcinogenicity in humans. However, IARC concluded that Mineral Wool Fiber should be placed in Category 2B, possibly carcinogenic to humans.  
**Continuous Filament Fiberglass:** Inadequate evidence of carcinogenicity in both human and animal scientific studies to link fiber to human cancer. Therefore listed as Group 3.

**Clinical Conditions Which May be Aggravated:** Any condition generally aggravated by mechanical irritants in the air or on the skin.

**Target Organs:** Skin, lungs

**Acute Health Effects:** Temporary irritation of the mouth, nose, and throat

**Chronic Health Effects:** None known

**Primary Routes of Entry:** Inhalation
### VI Health Data: B - Signs/Symptoms of Overexposure

**Inhalation:** May cause temporary upper respiratory irritation

**Skin Contact:** Acute: Transient mechanical irritation  
Chronic: None known.

**Ingestion:** Acute: Unlikely occurrence. Observe individual & if symptoms develop, consult physician  
Chronic: None known.

**Eyes:** Acute: Direct contact may cause mechanical irritation.  
Chronic: None known.

### VI Health Data: C - Emergency First Aid Procedures

**Inhalation:** Remove individual from exposure. Seek help if irritation persists.

**Skin Contact:** Wash with mild soap and water.

**Ingestion:** Unlikely occurrence. Consult physician if any unusual reaction is observed.

**Eyes:** Flush with running water for at least 10 minutes. If symptoms persist, seek immediate medical attention.

### VII Reactivity Data

**Conditions to Avoid:** Avoid creating dust. Use vacuum when possible.

**Hazardous Decomposition Products:** Incomplete combustion may release toxic products.

### VIII Spill or Leak Procedures

**Procedure(s) for Spill/Leak:** Use vacuum if dust is involved.

**Waste Management:** In accordance with national, state, and local regulations.

### IX Special Protection Information

**Ventilation:** Use exhaust ventilation when available.

**Respirator:** Use NIOSH approved nuisance dust respirator if TLV limits are exceeded.

**Goggles:** Use may be appropriate in some operations.

**Gloves:** Use may reduce skin irritation in some handling situations

**Miscellaneous:** Wear long sleeved shirts and loose fitting clothing. Use good personal hygiene.

### X Special Considerations

**Special Storage & Handling:** Store in cool, dry area.

**Label Information:** "Any fiber or dust may be hazardous to your health. Use respirators and/or other dust control measures as well as eye protection, when handling or processing this product. Do not ingest."

**Miscellaneous:** After handling, wash with mild soap and water. Wash work clothes separately.

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**Note:** The information and recommendations contained in this Material Safety Data Sheet are taken from sources which are believed to be accurate. Champion Technologies, Inc. make no warranty with respect to the accuracy of the information or the suitability of the recommendations, and assumes no liability to any user of the information or recommendations.

**Prepared / Revised by:** Robyn Willoughby
**BRAKE and CLUTCH COMPOSITE:**

**AFT-1006**

**PRODUCT DESCRIPTION and APPLICATION:** AFT-1006 is a high coefficient rigid molded composite, available in slabs, or segments for shoe and band applications. Its coefficient stability and good wear rate make it particularly suitable for industrial and off-road use.

<table>
<thead>
<tr>
<th>PHYSICAL PROPERTIES -</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Gravity, typical</td>
<td>1.7 – 1.75</td>
</tr>
<tr>
<td>Apparent Density, pounds / in²</td>
<td>0.061 – 0.063</td>
</tr>
<tr>
<td>Maximum Available Size -</td>
<td></td>
</tr>
<tr>
<td>Width</td>
<td>38&quot;</td>
</tr>
<tr>
<td>Thickness, Maximum / Minimum</td>
<td>1.5&quot; / 0.375&quot;</td>
</tr>
<tr>
<td>Length</td>
<td>38&quot;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MECHANICAL and THERMAL PROPERTIES -</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Strength, psi</td>
<td>1600</td>
</tr>
<tr>
<td>Modulus x 10⁶</td>
<td>1.18</td>
</tr>
<tr>
<td>Elongation, %</td>
<td>0.16</td>
</tr>
<tr>
<td>Flexural Strength, psi</td>
<td>4575</td>
</tr>
<tr>
<td>Modulus x 10⁶</td>
<td>0.77</td>
</tr>
<tr>
<td>Compression Strength, psi</td>
<td>11,100</td>
</tr>
<tr>
<td>Shear Strength, psi</td>
<td>4550</td>
</tr>
<tr>
<td>Thermal Conductivity, BTU-in/hr/ft²°F</td>
<td>To be determined</td>
</tr>
</tbody>
</table>
## Friction Properties

- **Coefficient of Friction**
  - Normal: 0.52
  - Hot: 0.54
  - Typical @ 400°F: 0.54
  - Wear Rate, in³/hp-hr: 0.0187

- **Friction Code**: GG

**Suggested Operating Limits - **
- Maximum Pressure, psi: 200
- Maximum Surface Speed, ft/min: 5000
- Temperature, °F:
  - Maximum, Intermittent: 650°
  - Maximum, Sustained: 550°

**Suggested operating limits are consistent with uniform performance and acceptable wear rate**

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### Coefficient of Friction

From SAE J661 Test Procedure

- **Wear Test**
  - Coefficient of Friction vs Application Number

- **Second Fade**
  - Coefficient of Friction vs Drum Temperature - °F

- **Second Recovery**
  - Coefficient of Friction vs Drum Temperature - °F

The data presented herein was obtained from industry accepted standards. **Champion Technologies Inc.** provides the information in good faith but makes no representation as to its completeness or accuracy. The information is intended only as a guide, and independent judgement must be exercised in determining suitability of the material for a particular purpose.

AFT-1006 Rev: 2011
Lining, Material Safety Data Sheet

1. Material-/Process-and Company Name

1.1 Product specification
   Product Name : Lining for Rope Gripper

1.2 Adress, Supplier : GUMYOUNG GENERAL CO., LTD.

1.2.1 Supplier
   3FL., Joong Ang Bldg, 240-10, Nonhyun-Dong, Gangnam-Gu, Seoul, Korea (Zip 135-011)
   Phone : 82-2-2056-1130   Fax : 82-2-540-5007
   E-Mail : gumyoung@gyg.co.kr   Home-Page : http://www.gyg.co.kr

2. Composition / Details of Components

2.1 Chemical Characterization (Product)

   2.1.1 Description : This non-asbestos friction material is multi-ingredient system with resins and
                     caoutchouc as a binding agent in a cured and vulcanized form.

   2.1.2 Ingredient(s) : Trade Secret

   2.1.3 Additional Notes : When handling friction liners fine dusts with harmful substances can be
                           released especially,
                           when carrying out mechanical finishing work or maintenance work

3. Possible hazard

3.1 Marking of hazard : No obligation

3.2 Special warnings for people and environment : When correctly handled no hazards for people and
                                               environments are known so far.

4. First Aid Measures

4.1 General Advice : there is no direct danger arising from the product and the ingredients. Contact
                    with skin/eyes can cause rash. irritations due to fibre-constituents.

4.2 After skin contact : After contact with powder constituents, wash off thoroughly with water.

4.3 After eyes contact : After contact with powder constituents, rinse with water thoroughly.

5. Fire Fighting Measures

5.1 Suitable Extinguishing Agents : water, foam, ABC-powder, CO2.

5.2 Special dangers caused by the material, its combustion or developing gases

5.3 Special protective equipment : Oxygen respirator

6. Measures When Unintentionally Released

6.1 Additional Notes : Information for safe handling see item 7.

                                Information for personal Protective equipment see item 8.
                                Information for product disposal see item 13.
7. Handling and Storing

7.1 Handling

7.1.1 Information for safe handling: Avoid dust and dust accumulation.

Dust removal by suitable industrial vacuum-cleaner or central 
Exhausting.

7.2 Storing

7.2.1 Storerooms and container requirements: Ventilated Storerooms.

7.2.2 Storing with other materials: Do not store together with corrosive substances.

7.2.3 Further Notes for Storing conditions: Dry storage

8. Maximum Exposure Values and Personal Protective Equipment

8.1 Ingredients with critical values to be controlled in relation to workplaces:

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>Substance</th>
<th>Value</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>00000-00-0</td>
<td>Respirable fibres</td>
<td>TRK</td>
<td>0.5</td>
<td>F/m³</td>
</tr>
<tr>
<td>00000-00-0</td>
<td>Standard Dust limit</td>
<td>MAK</td>
<td>6</td>
<td>mg/m³</td>
</tr>
</tbody>
</table>

8.1.2 Further Information: The limiting values indicated are to be applied exclusively with 
respirable dusts, they are not relevant with respect to the finished 
product.

For respirable fibres the TRK-Value of artificial ceramic fibres is 
indicated.

8.2 Pers. Protective Equipment

8.2.1 General Measures for Protection and Hygienics: Don’t eat, drink or smoke while working.

8.2.2 Respiratory Protection: Use respirator protection when exposed to respirable dust.

8.2.3 Hand Protection: Wear rubber gloves.

8.2.4 Body Protection: Wear light protecting clothes.

9. Physical and Chemical Properties

Characteristics

9.1.1 Aggregate State solid

9.1.2 Colour dark yellow

9.1.3 Odour not characteristic

Safety relevant data

9.1.4 Specific gravity at T = 20 °C value

1.75 – 1.95

9.1.5 Solubility: Practically insoluble.

10. Stability and Reactivity
10.1 Substances to be avoided: See item 7.2.2
10.2 Hazardous Decomposition Products: At temperatures > 250°C depending on reaction conditions in changing composition: CO, H, phenolic-, aromatic- and aliphatic hydro-carbonics

11. Information on Toxicity
No information

12. Ecological Effects
Water pollution category: Not to be applied to finished product.

13. Disposal
13.1 Dispose in approved landfill
13.1.1 Recommendation: Packing material which is not contaminated, can be recycled.

14. Transport / Regulations
14.1 No dangerous goods

15. Regulations
15.1 Marking according to item 3.1

16. Further Information
The data reflect the state of the art. They give no contractual guarantee of product properties.
Distributor Safety Data Sheets: Safety at work Department

Name: SOO YONG, CHOI Tel. 82-2-2056-1130