Material Safety Data Sheet
Product Name: 2 FIBER ZIPCORD PLENUM

*** Section 1 - Chemical Product and Company Identification ***

Product Use: Fiber optical cable

Manufacturer/Supplier
AFL Telecommunications
170 Ridgeview Circle
Duncan, SC 29334

Emergency Information:
USA: 1-800-866-3941 Ext. 5577 or 1-864-433-5577

*** Section 2 - Composition / Information on Ingredients ***

Complete composition is provided below and may include some components classified as non-hazardous.

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Component</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>9002-86-2</td>
<td>Polyvinyl chloride (PVC)</td>
<td>&gt;84</td>
</tr>
<tr>
<td>26125-61-1</td>
<td>p-Aramid fibers</td>
<td>0-7</td>
</tr>
<tr>
<td>Not Available</td>
<td>Lead compounds</td>
<td>0-3</td>
</tr>
<tr>
<td>Not Available</td>
<td>Barium compounds</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Not Available</td>
<td>Antimony compounds</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

Component Related Regulatory Information
Some component information may be found under the following: Lead compounds, Barium compounds, n.o.s., Antimony compounds.

Component Information
Product consists of optical fibers surrounded by aramid fibers and several layers of polymeric coatings. Additional compounds which may be formed during processing are listed in Section 8.

*** Section 3 - Hazards Identification ***

Emergency Overview

Potential Health Effects
This product is considered an article and does not pose any health hazard under normal conditions of use. The health effects listed below are not likely to occur unless processing or combustion of this product generates dust or fumes.

Eyes
Can cause irritation.

Skin
Can cause irritation.
Inhalation
Can cause irritation and lung damage.

Health Effects of Ingredients

**Lead dust or fume** Can cause irritation of eyes and upper respiratory tract. **Acute overexposures:** Can cause nausea and muscle cramps. **Chronic overexposures:** Can cause weakness in the extremities (peripheral neuropathy), abdominal cramps and other gastrointestinal tract effects, kidney damage, liver damage, central nervous system damage, damage to blood forming organs, blood cell damage and reproductive harm. Can cause reduced fertility and fetal toxicity in pregnant women. **IARC/NTP:** Listed as possibly carcinogenic to humans by IARC (Group 2B)*. **Certain inorganic lead compounds:** **IARC/NTP:** Listed as "reasonably anticipated to be a human carcinogen" by the NTP. Listed as possibly carcinogenic to humans by IARC (Group 2A)*.

**Barium oxide** Can cause irritation of mucous membranes, skin and upper respiratory tract. **Acute overexposures:** Can cause benign lung disease (baritosis). Effects are reversible on cessation of exposure.

**Aramid fibers** **Chronic overexposures:** Studies with experimental animals by inhalation have found scarring of the lungs (pulmonary fibrosis) and lung tumors.

**Antimony and antimony trioxide** Can cause irritation of eyes, skin, mucous membranes and upper respiratory tract. **Acute overexposures:** Can cause fever, chills, shortness of breath and malaise (metal fume fever). **Chronic overexposures:** Can cause dermatitis, ulcers in the mouth, chemical pneumonia, lung damage, liver damage and kidney damage. **Ingestion:** Can cause abdominal cramps, diarrhea, dizziness, abnormal heart rhythm (arrhythmia) and death. **Antimony trioxide** **IARC/NTP:** Listed as possibly carcinogenic to humans by IARC (Group 2B)*.

Health Effects Of Additional Compounds That May Be Formed During Overheating

**Hydrogen chloride gas** Can cause severe irritation and corrosive burns of eyes, skin and upper respiratory tract. **Acute overexposures:** Can cause the accumulation of fluid in the lungs (pulmonary edema).

*IARC Classification Definitions*

Group 2A: The agent is probably carcinogenic to humans. Generally includes agents for which there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.

Group 2B: The agent is possibly carcinogenic to humans. Generally includes agents for which there is limited evidence in humans and less than sufficient evidence in experimental animals.

**Medical Conditions Aggravated By Exposure to the Product and/or Components**

If material is overheated, asthma and chronic lung disease.

*** Section 4 - First Aid Measures ***

**First Aid: Eyes**
Flush eyes with plenty of water or saline for at least 15 minutes. Consult a physician.

**First Aid: Skin**
Wash skin with soap and water for at least 15 minutes. Consult a physician if irritation persists.

**First Aid: Inhalation**
Remove to fresh air. If unconscious or severely injured, check for clear airway, breathing and presence of pulse. Perform CPR if there is no pulse or respiration. Consult a physician.

*** Section 5 - Fire Fighting Measures ***
Flammable/Combustible Properties
Non-combustible.

Fire/Explosion
Not an explosion hazard.

Extinguishing Media
Use fire fighting methods and materials that are appropriate for surrounding fire.

Fire Fighting Equipment/Instructions
Fire fighters should wear NIOSH approved, positive pressure, self-contained breathing apparatus and full protective clothing when appropriate.

*** Section 6 - Accidental Release Measures ***

Small/Large Spill
Recover using mechanical means.

*** Section 7 – Handling and Storage ***

Handling/Storage
Good housekeeping practices must be maintained.

*** Section 8 - Exposure Controls / Personal Protection ***

Engineering Controls
Use with adequate ventilation to meet the limits listed in Section 8, Exposure Guidelines.

Personal Protective Equipment
Respiratory Protection
Use NIOSH-approved respiratory protection as specified by an Industrial Hygienist or other qualified professional if concentrations exceed the limits listed in Section 8, Exposure Guidelines. Suggested respiratory protection: Acid gas, if hydrogen chloride is generated.

Eye Protection
Wear safety glasses to avoid eye contact.

Skin Protection
Wear appropriate gloves to avoid any skin injury.

Exposure Guidelines
A: General Product Information
AFL recommends an Occupational Exposure Limit for Polyvinyl Chloride (PVC) dust of 10 mg/m3 TWA.

B: Component Exposure Limits
Lead compounds (Not Available)
ACGIH  0.05 mg/m3 TWA
OSHA  50 µg/m3 PEL (as Pb); 30 µg/m3 Action Level (as Pb. Poison - see 29 CFR 1910.1025)

Barium and soluble compounds (Not Available)
ACGIH  0.5 mg/m3 TWA
OSHA  0.5 mg/m3 TWA

Antimony compounds (Not Available)
ACGIH  0.5 mg/m3 TWA (as Sb)
OSHA  0.5 mg/m3 TWA (as Sb)
C: Exposure Limits for Additional Compounds Which May Be Formed During Processing
Hydrogen chloride (7647-01-0)
ACGIH  2 ppm Ceiling
OSHA  5 ppm Ceiling; 7 mg/m3 Ceiling

*** Section 9 - Physical & Chemical Properties ***

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Solid cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>Not determined</td>
</tr>
<tr>
<td>pH Level</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Appearance</td>
<td>Gray</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Density</td>
<td>Not determined</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>Octanol-Water Coefficient</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

*** Section 10 - Chemical Stability & Reactivity Information ***

Stability
Stable under normal conditions of use, storage, and transportation as shipped.

Hazardous Decomposition
Combustion of the coatings can generate toxic and irritating gases, and metal fume: Hydrogen chloride, carbon monoxide, carbon dioxide, chlorinated hydrocarbons and partially oxidized hydrocarbons, and antimony, barium and lead oxides.

*** Section 11 - Toxicological Information ***

Health Effects of Ingredients
A: General Product Information
No information available for product.

B: Component Analysis - LD50/LC50
No LD50/LC50's are available for this product's components.

Carcinogenicity
A: General Product Information
No information available for product.

B: Component Carcinogenicity
Polyvinyl chloride (PVC) (9002-86-2)
IARC  Supplement 7, 1987; Monograph 19, 1979

p-Aramid fibers (26125-61-1)
IARC  Monograph 68, 1997 (Listed under para-Aramid fibrils)

Lead compounds (Not Available)
ACGIH  A3 - Confirmed animal carcinogen with unknown relevance to humans
IARC  Supplement 7, 1987; Monograph 23, 1980 (Evaluated as a group)
NTP  Reasonably Anticipated To Be A Carcinogen

Barium compounds (Not Available)
ACGIH  A4 - Not Classifiable as a Human Carcinogen
**Section 12 - Ecological Information**

Ecotoxicity
A: General Product Information
   No information available for product.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity
   Lead compounds (Not Available)
   96 Hr LC50 brook trout: 4.1 mg/L; 96 Hr LC50 fathead minnow: 6.5 mg/L
   48 Hr LC50 water flea:  600 µg/L

Environmental Fate
   No information available for product.

**Section 13 - Disposal Considerations**

Disposal Instructions
   Material may be disposed of at a sanitary landfill.

US EPA Waste Number & Descriptions
A: General Product Information
   Not federally regulated in the U.S. if disposed of "as is." Otherwise, characterize in accordance with applicable regulations (40 CFR 261 or state equivalent in the U.S.)

B: Component Waste Numbers
   RCRA waste codes other than described under Section A may apply depending on use of product. Refer to 40 CFR 261 or state equivalent in the U.S.

**Section 14 - Transportation Information**

Special Transportation

<table>
<thead>
<tr>
<th>Notes:</th>
<th>PSN #1</th>
<th>PSN #2</th>
<th>PSN #3</th>
<th>PSN #4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name:</td>
<td>Not regulated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hazard Class:</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UN NA Number:</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packing Group:</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RQ:</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other - Tech Name:</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other - Marine Pollutant:</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: (1) When "Not regulated," enter the proper freight classification, "MSDS Number," and "Product Name" on the shipping paperwork.

Canadian TDG Hazard Class & PIN: Not regulated

**Section 15 - Regulatory Information**
Material Safety Data Sheet

Product Name: 2 FIBER ZIPCORD PLENUM

US Federal Regulations

A: General Product Information
In reference to Title VI of the Clean Air Act of 1990, this material does not contain nor was it manufactured using ozone-depleting chemicals.

B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Lead compounds (Not Available)

SARA 313: 0.1 % Supplier notification limit; 0.1 % de minimis concentration (when contained in stainless steel, brass, or bronze)
CERCLA: 10 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 0.004 inches); 4.54 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 0.004 inches)

SARA 311/312 Physical and Health Hazard Categories:

Immediate (acute) Health Hazard: No
Delayed (chronic) Health Hazard: No
Fire Hazard: No
Sudden Release of Pressure: No
Reactive: No

State Regulations

A: General Product Information
Chemical(s) known to the State of California to cause cancer: Lead and lead compounds
Chemical(s) known to the State of California to cause reproductive toxicity: Lead

B: Component Analysis - State
The following components appear on one or more of the following state hazardous substances lists:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>CA</th>
<th>FL</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead compounds</td>
<td>Not Available</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Barium compounds</td>
<td>Not Available</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Antimony compounds</td>
<td>Not Available</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):
WARNING! This product contains a chemical known to the state of California to cause cancer.
WARNING! This product contains a chemical known to the state of California to cause reproductive/developmental effects.

Other Regulations

A: General Product Information
No information available for product.
Material Safety Data Sheet

Product Name: 2 FIBER ZIPCORD PLENUM  
ID: 1044

B: Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>Minimum Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead compounds</td>
<td>Not Available</td>
<td>0.1 % (English Item 937, French Item 1435)</td>
</tr>
</tbody>
</table>

C: Component Analysis - Inventory

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>TSCA</th>
<th>DSL</th>
<th>EINECS</th>
<th>AUST.</th>
<th>MITI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyvinyl chloride (PVC)</td>
<td>9002-86-2</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>p-Aramid fibers</td>
<td>26125-61-1</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Lead compounds</td>
<td>Not Available</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Barium compounds</td>
<td>Not Available</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

*** Section 16 - Other Information ***

MSDS History

Original: March 31, 1999
Supercedes: July 10, 2002
Revised: August ??, 2005

Prepared By

Hazardous Materials Control Committee
Preparer: Jon N. Peace, 412-553-2293

MSDS System Number

150152

Other Information

* Guide to Occupational Exposure Values-2005, Compiled by the American Conference of Governmental Industrial Hygienists (ACGIH).
* Documentation of the Threshold Limit Values and Biological Exposure Indices, Sixth Edition, 1991, Compiled by the American Conference of Governmental Industrial Hygienists, Inc. (ACGIH).
* Integrated Index(R), MICROMEDEX, Inc., 2005
Material Safety Data Sheet

Product Name: 2 FIBER ZIPCORDER PLENUM

Key-Legend:
- ACGIH: American Conference of Governmental Industrial Hygienists
- AICS: Australian Inventory of Chemical Substances
- CAS: Chemical Abstract Service
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act
- CFR: Code of Federal Regulations
- CPR: Cardio-pulmonary Resuscitation
- DOT: Department of Transportation
- DSL: Domestic Substances List (Canada)
- EC: Effective Concentration
- ED: Effective Dose
- EINECS: European Inventory of Existing Commercial Chemical Substances
- EPA: Environmental Protection Act
- IARC: International Agency for Research on Cancer
- LC50: Lethal concentration (50 percent kill)
- LCLo: Lowest published lethal concentration
- LD50: Lethal dose (50 percent kill)
- LDLo: Lowest published lethal dose
- LFL: Lower Flammable Limit
- MITI: Ministry of International Trade & Industry
- NFPA: National Fire Protection Association
- NIOSH: National Institute for Occupational Safety and Health
- NTP: National Toxicology Program
- OEL: Occupational Exposure Limit
- OSHA: Occupational Safety and Health Administration
- PEL: Permissible Exposure Limit
- PIN: Product Identification Number
- PSN: Proper Shipping Name
- RCRA: Resource Conservation and Recovery Act
- SARA: Superfund Amendments and Reauthorization Act
- STEL: Short Term Exposure Limit
- TCLP: Toxic Chemicals Leachate Program
- TDA: Transportation of Dangerous Goods
- TWA: Time Weighted Average
- UFL: Upper Flammable Limit
- WHMIS: Workplace Hazardous Materials Information System

INFORMATION HEREIN IS GIVEN IN GOOD FAITH AS AUTHORITATIVE AND VALID; HOWEVER, NO WARRANTY, EXPRESS OR IMPLIED, IS GIVEN.

This is the end of MSDS # 1044