Section 1: Product and Company Information:<br>Product Name (s):<br>Cardable Fiber, Chopped Strand, Conductive Roving, Multitex, Wax Bonded Strand, Polyester Combination Yarn, Yarns.<br>Identity of Producer/Supplier:<br>Premier Farnell<br>150 Armley Road<br>Leeds LS12 2QQ<br>Tel. : +44 (0) 8701298608<br>Emergency telephone number<br>+44 (0) 870202530

## Section 2: Composition and Ingredient Information

### 2.1. Chemical Characteristic

| Common Name | Chemical Name | CAS No. | Wt.\% |
| :--- | :--- | :--- | :--- |
| Fiberglass Continuous Filament | Fibrous Glass | 65997-17-3 | 98-100 |
| (non respirable)*1 |  |  | $>98 \%$ |
| -Nonrespirable filaments and particulate |  | $<1 \%$ |  |
| -Respirable particulate |  |  | $<0.002 \%$ |
| -Respirable particulate with fiber-like dimensions (glass shards) | Size | Mixture | $\mathbf{0 - 2 \%}$ |

Note: *1-See Section 8 of SDS for exposure limit data for these ingredients.
*2 - See Section 15 of SDS for concentrations of California Proposition 65 chemicals and other regulatory information relative to this product(s).

## Section 3: Hazards Identification

Appearance and Odor
: White/off-white coloured solid with no odor.

| Emergency Overview |
| :---: |
| No unusual conditions are expected from this product |

Primary Route(s) of Exposure : Inhalation, Skin, Eye
Potential Health Effects
: ACUTE (short term): Fiberglass continuous filament is a mechanical irritant. Breathing dusts and fibers may cause short-term irritation of the mouth, nose and throat. Skin contact with dust and fibers may cause itching and short-term irritation. Eye contact with dust and fibers may cause short-term mechanical irritation. Ingestion may cause short-term mechanical irritation of the stomach and intestines. See Section 8 for exposure controls.
CHRONIC (long term): There is no known chronic health effects connected with long-term use or contact with this product. In a laboratory test of a different product with comparable composition and durability, animals breathing very high concentrations of respirable fibers on a long-term basis developed fibrosis, lung cancer and mesothelioma. See Section 11 of SDS for more toxicological data.
: Respiratory or skin conditions that are aggravated by mechanical irritants may be at an increased risk for worsening from exposure to this product.

## Section 4: First Aid Measures

Inhalation
Eye Contact
Skin Contact

Ingestion
: Move person to fresh air. Seek medical attention if irritation persists.
: Flush eyes with running water for at least 15 minutes. Seek medical attention if irritation persists.
: Wash with mild soap and running water. Use a washcloth to help remove fibers. To avoid further irritation, do not rub or scratch affected areas. Rubbing or scratching may force fibers into skin. Seek medical attention if irritation persists.
: Ingestion of this material is unlikely. If it does occur, watch the person for several days to make sure that intestinal blockage does not occur.

## Section 5: Fire Fighting Measures

Flash Point and Method : None
Flammability Limits (\%) : None
Auto Ignition Temperature : Not Applicable
Extinguishing Media : Water, Foam, $\mathrm{CO}_{2}$ or dry chemical.
Unusual Fire and Explosion Hazards : None known
Fire Fighting Instructions : Use self-contained breathing apparatus (SCBA) and full bunker turnout gear in a sustained fire.
Hazardous Combustion Products
: Primary combustion products are carbon monoxide, carbon dioxide and water. Other undetermined compounds could be released in small quantities.

## Section 6: Accidental Release Measures

Releases of this product to the land, water and air may require reporting to federal, state or local authorities.
Land Spill : Scoop up material and put into suitable container for disposal as a non-hazardous waste.
Water Spill : This material will sink and disperse along the bottom of waterways and ponds. It cannot easily be removed after it is waterborne; however, the material is non-hazardous in water.
Air Release
: This material with settle out of the air. If concentrated on land it can then be scooped up for disposal as a non-hazardous waste.

## Section 7: Handling and Storage

| Storage Temperature | : Not applicable. |
| :--- | :--- |
| Storage Pressure | : Not applicable. |
| General | : No special Storage or handling procedures are required for this material. |

## Section 8: Exposure Controls and Personal Protection

| Ingredient | OSHA PEL <br> (8-hr TWA) | ACGIH TLV <br> (8-hr TWA) |
| :--- | :---: | :---: |
| Fiberglass Continuous Filament: | $15 \mathrm{mg} / \mathrm{m}^{3}$ <br> (total dust) | $5 \mathrm{mg} / \mathrm{m}^{3}$ <br> (inhalable fraction) |
| Nonrespirable fibers and particulate | $5 \mathrm{mg} / \mathrm{m}^{3}$ <br> (respirable dust) | $3 \mathrm{mg} / \mathrm{m}^{3}$ <br> (PNOC) |
| Respirable particulate | None Established | 1fiber/cc aspect ratio >5:1 |
| Respirable particulate with fiber like dimensions <br> (glass shards) | None Established | None Established |
| Size |  |  |

PNOC = Particles not otherwise classified
As manufactured continuous filament glass fibers are not respirable. Continuous filament glass products that are chopped, crushed, or severely mechanically processed during manufacturing or use may contain a very small amount of respirable particulate, some of which may be glass shards.

Ventilation
Personal Protection

Skin Protection

Eye Protection
Work and Hygienic Practices
: General dilution ventilation and/or local exhaust ventilation should be provided as necessary to maintain exposures below occupational exposure limits.
: Respiratory Protection: A properly fitted NIOSH/MSHA approved disposable dust respirator such as the 3 M model 8210 (formerly 8710 ) or model 8271 (formerly 9900) in high humidity environments or equivalent should be used when: high dust levels are encountered; the level of glass fibers in the air exceeds the occupational exposure limits; or if irritation occurs. Use respiratory protection in accordance with your company's respiratory protection program, local regulations and OSHA regulations under 29 CFR1910.134.
: Loose fitting long sleeved shirt that covers to the base of the neck, long pants and gloves. Skin irritation is known to occur chiefly at pressure points such as around neck, wrist, waist, and between fingers.
: Safety glasses, goggles or face shield.
: Handle using good industrial hygiene and safety practices. Avoid unnecessary exposures by using adequate local exhaust ventilation. Remove material from the skin and eyes after contact. Remove material from clothing using vacuum equipment (never use compressed air). Always wash work clothes separately from other clothing. Wipe out the washer or sink to prevent loose glass fibers from getting on other clothing). Keep the work area clean of dusts and fibers released during processing or fabrication. Use vacuum equipment to clean up product. Avoid dry sweeping or using compressed air as these techniques re-suspend dusts and fibers into the air. Have access to safety showers and eye wash stations.

## Section 9: Physical and Chemical Properties

| Vapor Pressure $\left(\mathrm{mm} \mathrm{Hg} @ 20^{\circ} \mathrm{C}\right)$ | $:$ Not Applicable |
| :--- | :--- |
| Vapor Density $($ Air $=1)$ | $:$ Not Applicable |
| Specific Gravity $($ water $=1)$ | $: 2.6$ |
| Solubility in Water | $:$ Insoluble |
| Appearance | : Solid |

Odor Type
Evaporation Rate
(n-Butyl Acetate = 1)
pH
Boiling Point
Viscosity
Physical State
Freezing Point
: None
: Not Applicable
: Not Applicable
: Not Applicable
: Not Applicable
: Solid
: Not Applicable

## Section 10: Stability and Reactivity

General
Incompatible Materials and
Conditions to Avoid
Hazardous Decomposition Products
Hazardous Polymerization
: Stable
: None
: Sizings or binders may decompose in a fire.
See Section 5 of SDS for combustion products statement.
: Will not occur.

## Section 11: Toxicological Information

CARCINOGENICITY : The table below indicates whether or not each agency has listed each ingredient as a carcinogen:

| Ingredient | ACGIH | IARC | NTP | OSHA | 97/69/EC |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Fiberglass Continuous Filament ${ }^{(\mathrm{a})}$ | A4 | 3 | No | No | No |
| Size | No | No | No | No | No |

ACGIH: A4 not classifiable as a human carcinogen
IARC 3: Not Classifiable with respect to Human Carcinogenicity
${ }^{(a)}$ Includes: Nonrespirable glass particulate, Respirable glass particulate, and Respirable particulate with fiber-like dimensions (glass shards)

|  | $\mathrm{LD}_{50}$ Oral (g/kg) | $\mathrm{LD}_{50}$ Dermal ( $\mathrm{g} / \mathrm{kg}$ ) | LC ${ }_{50}$ Inhalation (ppm, 8hrs.) |
| :---: | :---: | :---: | :---: |
| Fiberglass Continuous Filament ${ }^{(a)}$ | Not Available | Not Available | Not Available |
| Size | Not Available | Not Available | Not Available |

## Fiberglass Continuous Filament:

The International Agency for Research on Cancer(IARC) in June, 1987, categorized fiberglass continuous filament as not classifiable with respect to human carcinogenicity (Group 3). The evidence from human as well as animal studies was evaluated by IARC as insufficient to classify fiberglass continuous filament as a possible, probable, or confirmed cancer causing material.
The American Conference of Governmental Industrial Hygienists (ACGIH) A4 classification, not classifiable as a human carcinogen, for respirable continuous filament glass fibers is based on inadequate data in terms of its carcinogenicity in humans and/or animals.

For respirable continuous filament glass fibers, a TLV-TWA of 1 fiber/cc was adopted to protect workers against mechanical irritation. The TLV-TWA of $5 \mathrm{mg} / \mathrm{m} 3$ was adopted for nonrespirable glass filament fiber, measured as inhalable dust, to prevent mechanical irritation of the upper respiratory tract.
Note: There are no known chronic health effects connected with long-term use or contact with these products.
Products that are chopped, crushed or severely mechanically processed during manufacture or use may contain a very small amount of respirable glass fiber-like fragments. NIOSH defines "respirable fibers" as greater than 5 microns in length and less than 3 microns in diameter with an aspect ratio of $\geq 5: 1$ (lenght-to-width ratio)

## Chronic Study in Animals

A laboratory test was conducted with a different product (special application glass fiber) with comparable composition and durability. Test animals breathing very high concentration of respirable fibers on a long-term basis developed fibrosis, lung cancer and mesothelioma.
About $23 \%$ of the rats ( $\mathrm{n}=43$ ) exposed to $1022 \mathrm{f} / \mathrm{cc}$ for $5 \mathrm{hrs} /$ day, 7 days/week for 52 weeks developed lung tumors (adenoma and azrcinoma), Five percent (5\%) of the unexposed control group ( $n=38$ ) developed lung tumors (adenoma and carcinoma) Five percent (5\%) of the rats in the exposed group developed mesothelioma and $12.5 \%$ developed advanced fibrosis. None of the rats in the unexposed control group developed mesothelioma and $0.6 \%$ developed advanced fibrosis.
A second group of rats was exposed to a similar concentration of asbestos (respirable amosite fibers) for 5 hours/day, 7 days a week for 52 weeks. $38 \%$ of the rats developed lung tumors (adenoma and carcinoma) and $5 \%$ developed mesothelioma. $14.5 \%$ developed advance fibrosis.
Importantly, this result, that is similar disease rates for the special application fiber and amosit asbestos, had been predicted in a 1996 scientific paper (Inhal. Tox. 8:323-343, 1996 ref). That paper specifically stated that in rats all fibers which were durable enough to remain in a rat lung for two (2) years or more, would produce the same disease rates if the exposures were the same. While the special application fiber is much less durable that asbestos, it is stable enough to remain in the rat lung for more than the two (2) year time period. The results of the current study are therefore not unexpected, and they do not indicate that similar disease rate would be seen in longer lived species or humans, exposed to these fibers.

## Section 12: Ecological Information

This material is not expected to cause harm to animals, plants or fish.

## Section 13: Disposal Considerations

RCRA Hazard Class
: Non-hazardous

## Section 14: Transport Information

| DOT Shipping Names | : Not regulated |
| :--- | :--- |
| Hazard Class or Division | : None |
| Identification No | : None |
| Label(s) required (if not excepted) | : None |
| Special provisions | : None |
| Non-bulk Packaging | : None |
| EPA Hazardous Substances | : None |
| Quantity Limitations | : Passenger Aircraft: None; |
|  | Cargo Aircraft: None |
| Marine Pollutants | : None |
| Freight Description | : None |


| Hazardous Material Shipping |  |
| :--- | :--- |
| Description | : None |
| Secondary | : None |
| Packing Group | : None |
| Packaging Exceptions | : None |
| Bulk packaging | : None |
| RQ | : None |

Transportation of Dangerous Goods - Canada

| Proper Shipping Name | Not Regulated |
| :---: | :---: |
| TDG Hazard Classification | : (Primary): None (Secondary): None |
| IMO Classification | None |
| ICAO/IATA Classification | None |
| Product Identification Number | None |
| Packing Group | None |
| Control Temperature | None |
| Emergency Temperature | : None |
| Schedule XII Quantity Restriction | None |
| Reportable Quantity for US Shipments | None |
| IATA Packing Instructions | Passenger/Cargo: None Cargo Only: None Limited Quantity: None |
| Maximum Net Quantity per Package | Passenger/Cargo: None Cargo Only: None Limited Quantity: None |
| Special Provisions | None |

## Section 15: Regulatory Information

| TSCA Status | : Each ingredient is on the TSCA Inventory. |
| :--- | :--- |
| NSR Status (Canada) | : Each ingredient is on the DSL |
| SARA Title III: | Hazard Categories: |


| Acute Health | Yes |
| :--- | :--- |
| Chronic Health | No |
| Fire Hazard | No |
| Pressure Hazard | No |
| Reactivity Hazard | No |
| Reportable Ingredients |  |
| Sec. $302 / 304$ | None |
| Sec. 313 | None |


| California Proposition 65: <br> Chemical | CAS Number: | Concentration - Parts Per Billion <br> (PPB) Maximum |
| :---: | :---: | :---: |
| 1, 4-Dioxane | $123-91-1$ | $<5$ |
| Acetaldehyde | $75-07-0$ | $<5$ |
| Ethylene Oxide | $75-21-8$ | $<5$ |
| Formaldehyde | $50-00-0$ | $<12.1$ |

Clean Air Act
WHMIS (Canada)

Certification Statement for:
Directive 2002/96/EC for RoHS as it relates to WEEE
Based on out current glass analyses, PRO POWER certifies that our fiberglass yarns are well below the requirements to Directive 2002/96/EC for RoHS as it relates to WEEE.

## Section 16: Other Information

HMIS and NFPA Hazard Rating:

| Category | HMIS | NFPA |
| :---: | :---: | :---: |
| Acute Health | 1 | 1 |
| Flammability | 0 | 0 |
| Reactivity | 0 | 0 |

NFPA Unusual Hazards : None
HMIS Personal Protection : To be supplied by user depending upon use.

Part Number Table

| Description | Size | Inside Diameter <br> in (mm) |  | Wall Thickness <br> in (mm) | Part Number |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Min. | Min. |  |  |
|  | 24AWG | $0.027(0.96)$ | $0.02(0.51)$ | $0.005(0.13)$ | SPC4913 |
|  | 22AWG | $0.032(0.81)$ | $0.025(0.64)$ | $0.005(0.13)$ | SPC4914 |
|  | 20AWG | $0.039(0.99)$ | $0.032(0.81)$ | $0.009(0.23)$ | SPC4915 |
|  | 18AWG | $0.049(1.25)$ | $0.04(1.02)$ | $0.011(0.28)$ | SPC4916 |
|  | 16AWG | $0.061(1.55)$ | $0.051(1.3)$ | $0.011(0.28)$ | SPC4917 |
|  | 14AWG | $0.074(1.88)$ | $0.064(1.63)$ | $0.011(0.28)$ | SPC4918 |
|  | 12AWG | $0.091(2.31)$ | $0.081(2.06)$ | $0.011(0.28)$ | SPC4919 |
|  | 8AWG | $0.112(2.8)$ | $0.102(2.6)$ | $0.011(0.28)$ | SPC4920 |
|  | 6AWG | $0.141(3.6)$ | $0.129(3.3)$ | $0.011(0.28)$ | SPC4921 |
|  | 4AWG | $0.224(5.7)$ | $0.162(4.1)$ | $0.013(0.33)$ | SPC4922 |
|  | 2AWG | $0.278(7.1)$ | $0.258(6.6)$ | $0.016(0.41)$ | SPC4924 |


| Description | Size | Inside Diameter <br> in (mm) |  | Wall Thickness <br> in (mm) | Part Number |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Max. | Min. | Min. |  |
|  | 0 AWG | $0.347(8.8)$ | $0.325(8.3)$ | $0.016(0.41)$ | SPC4925 |
|  | $3 / 8 "$ | $0.399(10.1)$ | $0.375(9.5)$ | $0.016(0.41)$ | SPC4926 |
|  | $7 / 16 "$ | $0.462(11.7)$ | $0.438(11.1)$ | $0.018(0.46)$ | SPC4927 |
|  | $1 / 2^{\prime \prime}$ | $0.524(13.3)$ | $0.5(12.7)$ | $0.018(0.46)$ | SPC4928 |
|  | $5 / 8 "$ | $0.655(16.7)$ | $0.625(15.9)$ | $0.018(0.46)$ | SPC4929 |
|  | $3 / 4 "$ | $0.786(20)$ | $0.75(19.1)$ | $0.018(0.46)$ | SPC4930 |
|  | $1 "$ | $1.036(26.3)$ | $1(25.4)$ | $0.018(0.46)$ | SPC4932 |

[^0]
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