

# It's pouring rain out there ..... How are your connectors doing ?



f- bulkhead cross section.

All Coaxial connectors contain air pockets which allow a "breathing" of the connector with changes in ambient temperatures. (Air spaces in f-connector shown in RED)

*O-Rings, Seal Tapes & Brush-On Overcoats are a great help but will not stop damp, humid air from creeping into your connectors and causing electrolytic (acid) failure. Give you connectors every defense from Mother nature !*



## You Gotta It!



### Silica Teflon Unionizing Filler

"Prevents Moisture Infiltration by Occupation"

"Serving the Communications Industry Since 1989"

An Ultra-low Density, All Dielectric Filler Specifically Formulated to Simulate Coaxial Cable Core.

**Directions:** Mate tube of STUF with connector cap end and fill. Thread connector and snug with wrench. A slight resistance to tightening should be noted as STUF is channeled into voids.

#### **STUF Factoids:**

**STUF** is made of a mixture of Glass Microspheres ( To lower dielectric Density ), Micron-sized Teflon powder (To fill voids between the micro-spheres ), Polyalphaolephin fluids (Makes the mixture viscous and provide an oxygen barrier) and Corrosion / Acid blockers.

**STUF** has a dielectric constant simulating the most common coaxial cable core used in coaxial cable :Polyetyelene Foam , ( <= 1.5 dielectric constant )

**STUF** is non-frequency dependent: From shortwave to microwave it responds the same to the signal energy.

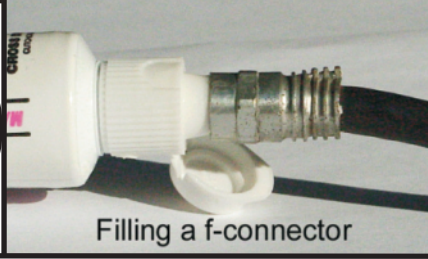
**STUF** contains corrosion inhibiting oils which crawl into the cable braid and connector body to control corrosion.

**STUF** will not interfere with electrical throughput in powered cables: stuf is highly extrudeable and is moved, like air, away from metal to metal contact areas.

**STUF** will stop migration of flooded cable fluids into connectors, which causes high return ( reflection ) losses in flooded cable assemblies and fluid leakage.

**STUF** is a pure dielectric compound: It is inert to electromagnetic (Dielectric ) Put a blop in a microwave oven, it will not even get warm.

Available at:



## How to Use S.T.U.F. : Silica, Teflon, Unionizing, Filler

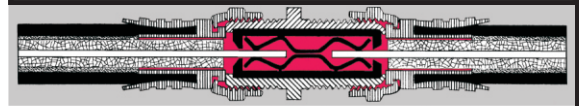
**STUF IS A FILLER;** Specifically formulated for use in connectors used on coaxial cables. It is formulated to simulate the dielectric properties of foam polyethylene (common coaxial cable core).

**Directions:** Mate tube of STUF to connector cap end and fill. Thread connector and snug with wrench, A resistance to tightening should be noted as STUF is channeled into voids Ultimate signal throughput performance will be realized after STUF fluids migrate, (one week), forming a moisture impermeable, clay like , Teflon - Silica compound.

**Filling volume** is a "pea" sized for smaller f-connector sizes and 2 - 3 "peas" for larger connectors: PL,UHF,N, BNC,TNC type connectors. The STUF volume applied should be twice the estimated void volume after the connector is assembled



Correct STUF fill volume should be +/- Twice the estimated internal void volume when assembled.

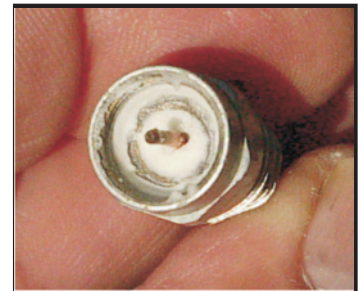


Cross Section of f-splice: RED indicates internal air voids filled with STUF

**Depositing a proper fill amount of STUF** is most easily done upon the center conductor of the "Cap" side of the connector assembly. When assembled and tightened; STUF is compressed, channeled into internal voids, reducing it's volume as the glass microspheres and teflon particles pack and the oils extrude into threads, machined borders and the cable braid area

**Opening up the connector for inspection** should show STUF deposited in the interior of the connector in a circular symmetrical fashion ( see pic at right ). Inspection should be done any time a new type of connector is used to verify proper fill volume & full Seating of the connector.

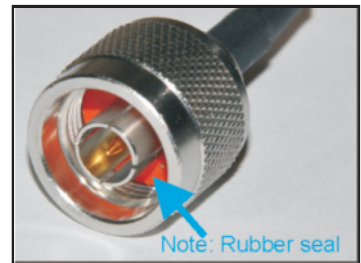
**To Reassemble :** Deposit +/- 1/2 pea of STUF again on the center



**Note on N Connectors:** ( Rubber back sealed ) Connectors: (Photo down right) Some connectors use a true mating seal within the connector. This seal can stop the extrusion of STUF into the rear area of the connector and through the parts borders.

In these types of connectors ; it is recommended to check the connector ( **Open Up** ) and **verify** a circular mark on the inner rubber seal face to verify the connector fully seated when filled and assembled.

This does not apply to f - style connectors with "O" Rings

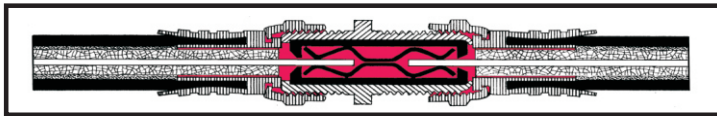


**Oily STUF:** Some product separation of the oils always occur. This separation will not effect STUF performance. In excessive cases : Manipulate the cap closed tube to re-mix the oils into the solids within the tube.





# STUF Dielectric Filler Specifications



STUF on bic pen tip: (note microspheres)

**STUF:** Silica, Teflon, Unionizing, Filler ( Low Density Dielectric Grease )

**Use:** .....Coaxial Connector Weather Protecting (Internal)

**Directions:** Mate tube of STUF to connector cap end and fill.

Thread connector and snug with wrench, A resistance to tightening should be noted as STUF is channeled into voids Ultimate signal throughput performance will be realized after STUF fluids migrate, (one week), forming a moisture impermeable, powdery , Teflon - Silica compound.

**Material:** Ultra-low density, High Purity , All Dielectric Compound

**Appearance:** ..... White Paste

**Useable Temperature Range:** .....-40C. To 100 Deg. C.

**Standard Packaging:** ..... 3.2 cu. In. Vol (White Glamate Tube)

**Net. Usage:** ..... 100 f. Style Coaxial Connections

**Shelf Life:** .....Indefinite, store in cool area

**Dielectric Constant:** .....  $\epsilon = 1.5$

**Compression:** .....1500 P.S.I. Max

**Moisture Absorption:** .....15 PPM Max

**Water Solubility:** .....Non-soluble

**Specific Gravity:**..... .7

**Volatility:** .....1%@250 Deg. C.

**Flash Point:** .....286 Deg C.

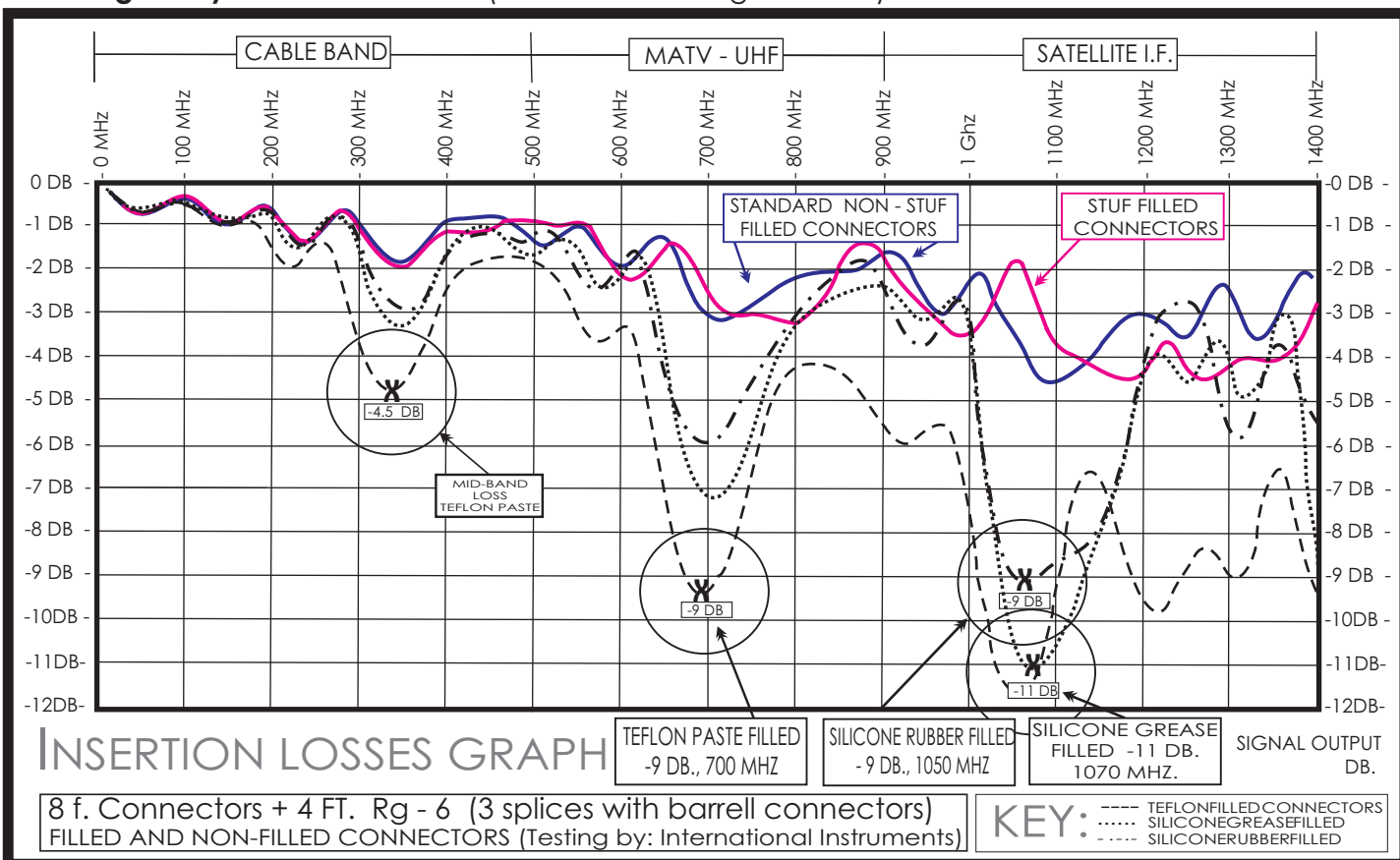
**Toxicity:** .....Non-Hazardous

**Carcinogenicity:** ..Contains Teflon: (Listed as carcinogen in CA.)

## SIGNAL TRANSMISSION:

Common coaxial transmission cables, utilize foamed polyethylene as a transmission core.

STUF closely simulates this material in dielectric properties, minimizing insertion and return signal losses while maintaining signal level and electrical throughput, throughout cable connector life.



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MATERIAL SAFETY DATA SHEET: STUF

Update : 01/2013

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Cross Devices Responsibility for M.S.D.S.

3848 Shope Road

Gainesville, GA 30506

David B. Cross

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Product Identification : "STUF" : Silica, Teflon, Unionizing, Filler

Physical Data:

Packaging: 3.2 fl. oz. Glamine Tube

Appearance: Odorless white paste

Volatility: 1% @ 250 deg. C.

Use: Waterproofing Filler for Coaxial Connectors.

Water Solubility: Nil.

Shelf Life: Unlimited

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Fire and Explosion Hazard:

Flashpoint: 250 deg. C.

Extinguishing Data: Dry Chemical

Special Fire Fighting Procedure: As for petroleum products, use self contained breathing apparatus.

Unusual Fire or Explosion Hazards: Burned material mixed with water forms hydrofluoric acid. Wear neoprene gloves when handling fire refuse.

Hazardous Thermal Decomposition Products: Oxides of carbon, toxic gasses, hydrogen fluoride and perfluoroolefins.

\* ( See First Aid Inhalation )

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Reactivity Data:

Stability: Stable

Incompatibility: Strong Oxidizers: Hydrofluoric acid, Produces toxic gas: Silica Tetra Fluoride. Reacts with molten alkali metals and interhalogen compounds.

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Environmental Data:

Aquatic Toxicity: Prevent migration of spilled material into sewers or streams.

Disposal: Dispose of in a sanitary landfill. Incinerate only if incinerator is capable of scrubbing out hydrogen fluoride and other combustible products.

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Shipping: Non-Regulated / Not Controlled

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Carcinogenicity: None of the compounds present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a

Carcinogen.

\*California: Warning: Substances known to the state of California to cause cancer., birth defects or other reproductive harm:

Tetrafluoroethylene : Teflon

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Hazard Classifications:

This product contains no known toxic chemicals subject to the reporting requirements of section 313 of the emergency planning and community right to know act of 1986 and of CFR 372.

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First aid:

Skin Contact: This mixture is not likely to be hazardous by skin contact.

Contaminated skin should be washed with soap and water. Washing is recommended before drinking or smoking.-

Eye Contact: Flush eyes with water, Contact Physician if irritation persists.

Inhalation: Inhalation of fumes from overheating or burning, or from smoking of tobacco or cigarettes contaminated with this product may cause polymer fume fever. A flu - like illness with chills and fever.

Symptoms may not occur for several hours after exposure and may go away 24 - 48 hours, even in the absence of treatment.

Chronic Effects: None Known

Medical conditions aggravated by exposure: None Known

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M.S.D.S. data based on mixture ingredients.

Ingredients are not known to be reactive with each other nor form secondary compounds in such a mixture.

\*\*\*\* END \*\*\*\*