

# ACOUSTA-STUF SPECIFICATIONS

## by Mahogany Sound

1. **What it is:** Nylon polyamide fiber.
2. **Its Form:** Loose bulk fiber, sold by the pound.
3. **Its Appearance:** White fiber (Can be dyed).
4. **Fiber Diameter:** 48 Microns (If it were round).
5. **Fiber Shape:** Tri-lobal (like the MITSUBISHI logo).
6. **Young's Modulus:** 250 PSI
7. **Specific Gravity:** 1.14
8. **Fiber Denure:** 18
9. **Crimps per Inch:** 10 to 16
10. **Moisture Absorption:** < 4%
11. **Melting Temperature:** 490 to 510°F
12. **Ignition Temperature:** 581 to 592°F
13. **Auto Ignition Temperature:** 905°F
14. **Extinguish With:** Water or Class A extinguisher.
15. **Skin Irritation:** None
16. **Odor:** None
17. **Toxicity:** None
18. **Health Hazards:** None
19. **Its Cost:** \$ 9.50 per pound.

### SOUND ABSORPTION CHARACTERISTICS:

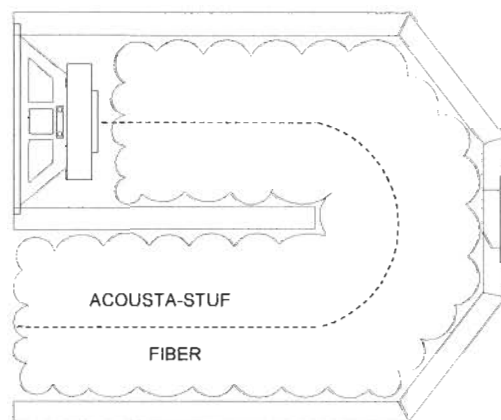
Acousta-Stuf fiber is used as a sound absorption material in loudspeaker systems, bass attenuation traps, and spot absorption panels. Because it has more surface area than comparable fibers like dacron or wool, it offers better sound absorption characteristics across a wider frequency range. Acousta-Stuf gives speakers deeper bass, cleaner midrange, and greater dynamic extension.

### HOW TO USE ACOUSTA-STUF FIBER:

Acousta-Stuf fiber is installed inside speaker enclosures to dampen the rear wave of the woofer, and minimize standing waves and reflections off of enclosure walls that would normally bounce around inside the box until striking the rear of the cone, causing a secondary emission, which blurs the acoustic image.

In most sealed box systems, you simply weigh out 1/2 pound of fiber per cubic foot of enclosure, fluff it up, and stuff it in the box.

For vented box systems you must line the enclosure walls with a layer of fiber. Spray 3M 77 adhesive to the box walls, and stick on wads of fiber to cover the wall surfaces. When dry, reach in and fluff up the fiber. This wall lining technique dampens panel reflections, while not impeding the port tube. Again, use 1/2 pound per cubic foot of box volume.



Transmission line enclosures should be completely filled with Acousta-Stuf fiber from just behind the woofer, all the way down the length of the line to the terminus opening. This usually requires between 1/2 and 1 1/2 pounds per cubic foot of enclosure.

This drawing is a side view of a transmission line subwoofer. Note that the TL is nothing more than a tube or pipe with a woofer mounted at one end, filled with damping fiber, and open to the room air at the other end (terminus). When properly designed and constructed, it's really hard to beat a TL for clean, natural sounding bass, without all the boom.

# MATERIAL SAFETY DATA

For

**ACOUSTA-STUF FIBER**

**by MAHOGANY SOUND**

**ACOUSTA-STUF** is a loose bulk Nylon polyamide fiber used for sound absorption and damping in custom built home, auto, and Pro-Sound stereo speaker systems, bass attenuation traps, and spot absorption panels. One of the leading textile manufacturers in the USA makes Acousta-Stuf to our specifications. Consult the Acousta-Stuf Specifications Page for that data.

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**CHEMICAL NAME:** Adipic acidhexamethylenediamine fiber

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**FREIGHT CLASSIFICATION:** Fiber, Synthetic (Class 70)

## OCCUPATIONAL CONTROL PROCEDURES:

**EYE PROTECTION:** Acousta-Stuf fiber does not cause significant eye irritation or toxicity to require any special eye protection, but avoid eye contact as a good industrial practice.

**SKIN IRRITATION:** Acousta-Stuf fiber does not present any significant skin concerns. No protective clothing is required for handling.

**RESPIRATORY PROTECTION:** Avoid breathing dust.

## FIRE PROTECTION INFORMATION:

**FLASH IGNITION TEMPERATURE:** 581°F - 592°F

**METHOD:** ASTM-D 1929-77

**AUTO IGNITION TEMPERATURE:** 905°F

**METHOD:** ASTM-D 1929-77

**EXTINGUISHING MEDIA:** Water or any Class A extinguishing agent.

**SPECIAL FIREFIGHTING PROCEDURES:** Firefighters and others who may be exposed to vapors or products of combustion should wear self-contained breathing apparatus and full protective clothing.

**HARARDOUS DECOMOSITION PRODUCTS:** At temperatures above 660°F or 349°C decomposition products may include carbon dioxide, carbon monoxide, hydrogen cyanide, nitrogen oxides, and undefined hydrocarbons.

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**HEALTH EFFECTS SUMMARY:** To avoid misunderstandings, the data presented in this section should be interpreted only by individuals trained in evaluation of this type of information.

**HUMAN EXPERIENCE:** Dermal contact is the primary route of occupational exposure to nylon fiber. This material has not been reported to cause any significant

adverse health effects. Due to its chemical and physical properties, nylon fiber does not appear to possess any toxological properties which would require any special handling other than good industrial hygiene and safety practices employed with any material of this type.

**TOXOLOGICAL DATA:** No toxicity studies have been conducted on this fiber since no toxological information was found in a reasonably extensive search of scientific literature.

**ADDITIONAL INFORMATION:** Thermal decomposition products of nylon have been reported to irritate the mucous membranes and the respiratory tract.

## PHYSICAL DATA:

**APPEARANCE:** Clear or White

**ODOR:** Essentially odorless

**MELTING POINT:** 490°F - 510°F

**SPECIFIC GRAVITY:** 1.14

**SOLUBILITY:** Slightly soluble in boiling water. If fiber is being dyed, water temperature should be about 110°F - 120°F.

**WASTE DISPOSAL:** Nylon fiber is not biodegradable and must be disposed of in an approved incinerator or landfill in compliance with all applicable local, state, and federal regulations. Consult an attorney or regulatory officials for disposal information.

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**ADDITIONAL COMMENTS:** Nylon fiber is not biodegradable, but it can, and should be, recycled whenever possible.

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**DISCLAIMER:** The information contained in this document was provided by the textile company which manufactures Acousta-Stuf fiber for Mahogany Sound. No representations as to the completeness or accuracy thereof are hereby made. This information is supplied upon condition that the persons receiveing same will make their own determination as to this products suitability for their purposes prior to use. In no event will Mahogany Sound be responsible for damages of any nature resulting from the use or reliance upon this information.

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