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Number 4

APPLICATION NOTE

Use of Stabilant 22A on Microphone Connectors

Background:

Microphone connector problems such as breakage at the soldered joints between the microphone cable and the pin or socket extensions have overshadowed many of the other problems inherent in any connector carrying a low-level signal. These include microphonics in the connector itself as well as degradation of the signal to noise ratio, both of which are caused by erratic contacts. Almost totally neglected has been the effect of thin film contamination on the total harmonic distortion of the audio signal, including the tendency of this distortion to occur in the more easily audible high-order harmonics.

Some manufacturers have provided gold-plated contacts to ensure reliability, but this by itself has almost no effect on thin-film contamination.

Apparent action of thin-film contaminants:

As an alternating current signal voltage passes through the zero-voltage state, current ceases to flow (we're assuming a purely resistive load here); if a thin film of contamination is present, current may not start to flow again until sufficient voltage has built up across the contaminant so as to break it down. The result is a small notch in the signal, similar in sound to the notch distortion of a class B power amplifier. The characteristic sound ranges from a "grainy" quality up to a harsh "glassy brilliant" coloration.

The use of Stabilant 22/22A:

By applying a thin coating of either Stabilant 22 or Stabilant 22A to the contacts in an XLR or equivalent connector, these thin film distortion effects can be eliminated along with most cases of connector microphonics and signal-to-noise degradation. Where fanning strips are used to pick up the signal lines from remotely located microphone jacks, the fanning strips should also be treated with Stabilant. This consideration extends to any edge-card or other connectors used to connect the fanning strip lines to the individual input modules.

Results to be expected:

It is suggested that only one mic channel be treated initially and compared with an untreated channel. All connections from switches to IC sockets as well as the input connector should be treated! The difference is usually audible as a smoother, more musical sound on the treated channel.

Precautions:

Do not treat condenser microphone capsules with the Stabilant materials in such a way that any of the material gets on the insulator between the back and diaphragm electrode connections. The resistance between the back electrode and diaphragm electrode must be maintained at extremely high values due to the voltages used; Stabilant across the insulation would lower this enough to render the capsule useless! However, when Stabilant is used on the XLR or equivalent connectors, there is no concern even if a small amount gets on the connector insulation. There the leakage resistance will stay so high as to be ignored.

Reference:

Please also refer to Technical Note Number 24 "Effects of Stabilant 22 on Harmonic Distortion in Connectors".

NATO CAGE/Supplier Code 38948

15ml Stabilant 22 (Concentrate), NATO Part # 5999-21-909-9981

15ml Stabilant 22A (Isopropanol Diluted), NATO Part # 5999-21-900-6937

15ml Stabilant 22E (Ethanol Diluted), NATO Part # 5999-21-909-9984

The Stabilants are patented. Because the patents cover contacts treated with the material a Point-of-Sale license is granted with each sale of the material.

SAFETY DATA SHEETS ARE AVAILABLE ON REQUEST

NOTICE

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