

Care and Handling of Videocassettes

DIRT

1. Always store tape in a dust-proof container when not in use.
 - Protects tape from dust particles, which can cause dropouts.
 - Dirt and dust particles get between the video heads and tape causing missing video information.
 - Dirty heads will prevent clean tapes from performing properly.
2. Never touch the tape surface with your hands.
 - Oils from hands (even after washing) will build up on the tape and video head.
 - Tape machine performance will decrease.
3. Avoid smoking or eating in the tape area.
 - Smoke and food particles can contaminate the tape and ashes can cause damage.
4. Clean the entire tape path on the tape machine every eight hours using a lint free cloth and an approved solvent.

Debris Perspective on High Density Digital Recording Tape

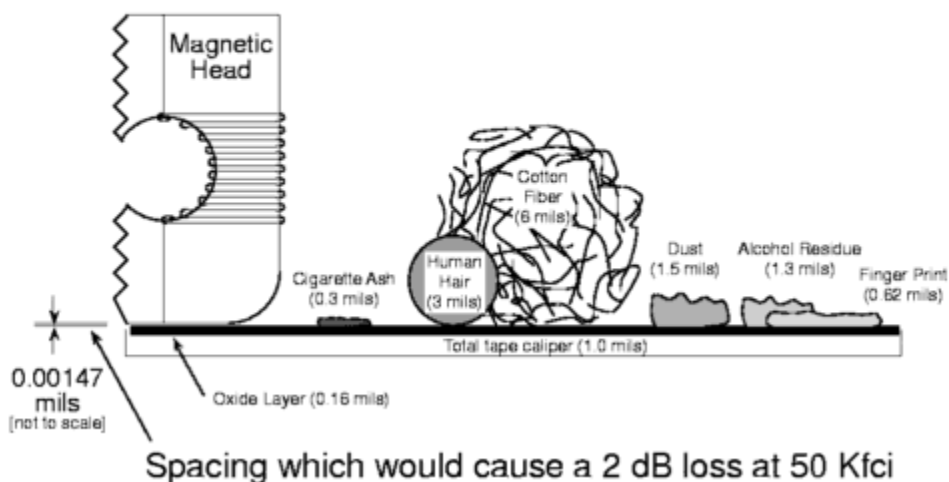


Figure 1

FIGURE 1 Size of Tape Debris Relative to the Tape/Head Spacing.

This figure shows the relative size of debris commonly found on tapes and on recorders relative to the tape-head spacing. It is clear from this diagram that even the smallest airborne particles can result in a dropout if the debris gets between the head and the tape.

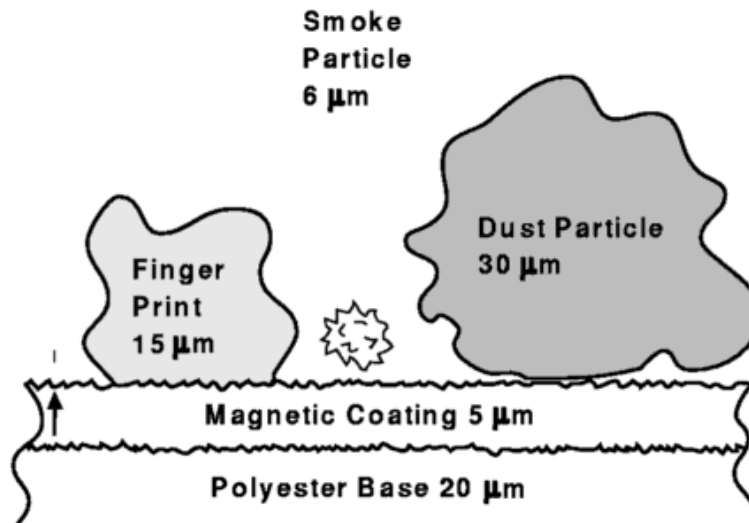


Figure 2 Tape Debris

PHYSICAL DAMAGE

1. Rewind poorly packed tapes before placing into storage.
2. Never stack tapes on top of one another.
3. Don't leave tape in machine.
 - May cause tape stretching, slack or wrinkles.
4. Don't load or unload a tape without playing it first.
5. Don't put tapes on top of equipment.
 - This interferes with the equipment's cooling system.
 - Also exposes the tape to heat and dust.
6. Recorded tapes should be stored upright in their protective cases.
 - Cases provide protection against dust, damage and moisture.
7. Don't drop tape to avoid malfunction of mechanism inside cassette shell.

ENVIRONMENT

1. The ideal operating and short-term storage environment should be 68 degrees F (20 degrees C) and 45% relative humidity.
2. The ideal operating and long-term storage environment should be 65 degrees F (18 degrees C) and 40% relative humidity.

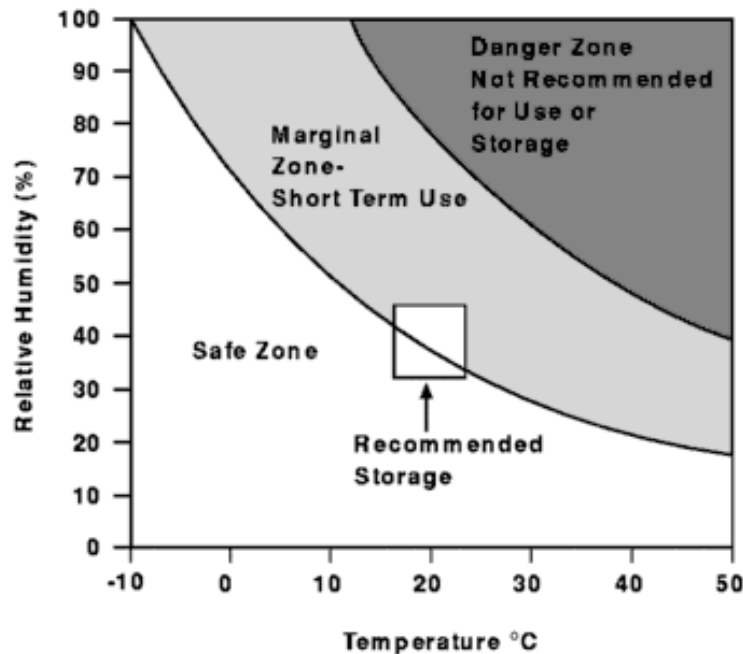


Figure 3

FIGURE 3 Temperature and Humidity Conditions and Risk of Hydrolysis.

This figure depicts the effects of humidity and temperature and shows that $15 \pm 3^\circ \text{C}$ ($59 \pm 5^\circ \text{F}$) and 40% maximum relative humidity (RH) are safe practical storage conditions. A similar diagram appears in ISO TR 6371-1989 that suggests even more stringent conditions (RH 20% max.) for long-term storage of instrumentation tapes.

3. Allow a minimum of two hours for tapes to condition themselves when brought from a different environment. Cool to hot or hot to cool.
 - Condensation may cause tape to stick to the video head or the guide pole.
 - The magnetic coating could be rubbed off.
4. Never expose tapes to direct sunlight, hot vehicles, etc.
 - Sunlight could affect magnetic properties.
 - Heat could cause warping.

5. Never expose tapes to water.

- Water will cause warping and contamination or destroy videotape.

6. Avoid stray magnetic fields.

- Keep tapes away from electrical equipment (speakers, electric motors, etc.).
- May cause tape video and audio noise.
- Worse case may permanently erase audio and video on tape.