



Compact Size with Large 36/72GB Capacity  
High-Reliability Media Incorporating DDS Technology



# DAT 72 Data Cartridge

DC4-170S

# TDK 4mm

# Data Cartridge Series

**DAT 72 is the fifth-generation data cartridge incorporating DDS technology. Despite its compact size, DAT 72 delivers 36GB storage capacity (non-compressed-72GB using compression), with a maximum transfer rate of 3.5MB/s (non-compressed-7MB/s using compression). DAT 72 drives are backwards compatible with DDS-3 and DDS-4 cartridges. This versatility makes DAT 72 the ideal choice for information continuity, cost effectiveness, storage capacity and performance.**

- Utilizes high-performance Super Finavinx metal particles boasting high  $\sigma_s$  (saturation magnetization)

DAT 72 features the highest recording density of any data tape\*<sup>1</sup>. As a result, DAT 72 data cartridges must be constructed with a magnetic layer that can record extremely short wavelengths. That's why TDK employs ultra-fine Super Finavinx metal magnetic particles, exclusive high  $\sigma_s$  technology that TDK specially developed for DAT 72. The " $\sigma_s$ " indicates each particle's magnetic energy; a high  $\sigma_s$  value means each particle has superior ability to record and store the magnetized data signal. The  $\sigma_s$  of TDK DAT 72 tape, 156emu/g\*<sup>2</sup>, represents a significant improvement over the 143emu/g of TDK DDS-4 tape. And because the Super Finavinx particles are packed on the magnetic layer in high density and with exceptional magnetic orientation uniformity, the DAT 72 format's short wavelength data signals can be recorded with total reliability.

Electron microscope photo of Super Finavinx magnetic particles

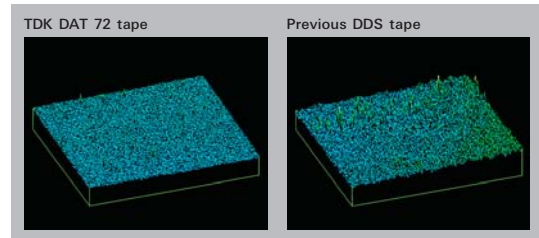


\*<sup>1</sup> Compared to DDS-4's area recording density of 706kpbmm<sup>2</sup>, DAT 72 achieves 1185kpbmm<sup>2</sup>. \*<sup>2</sup> emu stands for electro-magnetic unit.

- Ultra-smooth, uniform magnetic layer ensures stable output characteristics

Due to DAT 72's high recording density, the magnetic layer must have totally uniform thickness. A dual layer tape coating structure comprises DAT 72. The non-magnetic base layer is precision-manufactured to enhance lubricity and to provide a consistent foundation for the magnetic upper layer. The base layer features highly dispersed, non-magnetic pigment in a uniform pattern. The magnetic upper layer, comprised of ultra-fine Super Finavinx magnetic material is applied in a high-precision, thin coating. As a result of the magnetic layer's extremely uniform evenness and thickness, DAT 72 is able to record short wavelength data signals with high accuracy. TDK DAT 72 is exceptionally reliable recording media, featuring stable, high-output characteristics.

#### Comparison of magnetic layer surfaces

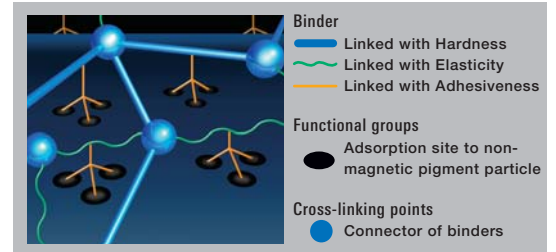


- Binders with maximum strength cross-linking provide superior durability

To enable optimal performance from TDK DAT 72, two varieties of binders are utilized: the electron beam cured EB binder\*<sup>3</sup> and the TDC binder\*<sup>4</sup>. By providing strong molecular linkage between the internal coatings of the non-magnetic base layer and the magnetic upper layer, the binders create a robust structure that prevents flaking of the magnetic surface and defends against wear at the tape edges. These maximum strength cross-linking binders reinforce the coating structure of the non-magnetic base layer, creating a tough tape that maintains a low error rate even after repeated read and write cycles and other demanding applications.

\*<sup>3</sup> Electron Beam Curing \*<sup>4</sup> Three Dimensional Compound

#### Conceptual diagram of maximum strength cross-linking binder



- High-precision cartridge and mechanism ensures stable tape run

For the tape cartridge and mechanism, TDK utilizes materials that optimize performance and employs designs that guarantee durability and reliability. Along with ensuring a stable tape run, the cartridge also provides exceptional tape protection.

#### TDK DAT 72 Data Cartridge Specifications

| Item                        | Unit                          | DC4-170S               |            |
|-----------------------------|-------------------------------|------------------------|------------|
|                             |                               | Super Finavinx (metal) |            |
| <b>Basic Specifications</b> | Magnetic particle             | —                      | 6.4        |
|                             | Linear recording density      | kbpm                   | 1185       |
|                             | Area recording density        | kbpm <sup>2</sup>      | 3.5 *      |
|                             | Data transfer rate            | MByte/s                | 366        |
| <b>Magnetic Properties</b>  | Storage capacity              | Byte                   | 190        |
|                             | Coercivity                    | kA/m                   | 450        |
|                             | Remanence                     | mT                     | 0.91       |
|                             | Squareness ratio              | —                      | 73×54×10.5 |
| <b>Dimensions</b>           | External cartridge dimensions | mm                     | 3.8        |
|                             | Tape width                    | mm                     | 5.2        |
|                             | Tape thickness                | μm                     | 170        |
|                             | Tape length                   | m                      | +15~+55    |
| <b>Operating Conditions</b> | Temperature                   | °C                     | 10~80 **   |
|                             | Humidity                      | %RH                    | +26        |
|                             | Max. wet bulb temperature     | °C                     | +5~+32     |
| <b>Storage Conditions</b>   | Temperature                   | °C                     | 20~60 **   |
|                             | Humidity                      | %RH                    | +26        |
|                             | Max. wet bulb temperature     | °C                     |            |

\*Varies depending on the drive. \*\*Without dewing.

● Dimensional specifications are nominal value. ● Basic specification values are without data compression. ● The DC4-170S can only be utilized in drives that are compatible with the DAT 72 format.



DC4-125S (recording capacity: 12GB\*)



DC4-150S (recording capacity: 20GB\*)



DC4-170S (recording capacity: 36GB\*)



\* recording capacity is without compression

● For purposes of improvement, product specifications and appearance may change without notice. ● Due to printing characteristics, the colors in this catalog may vary slightly from the actual product. ● Catalog contents are current as of March 2004.

