

SPINESpecs-L-R04_ComplementaryData-R02.doc

Created December 2006, Modified January 2007

Vials - DM16210A

- The strength of the ring magnets (or the holding force of the caps) should guarantee a cap holding force of between 40 and 90 grams. The protocol described at the end of this document should be used to evaluate the holding force.
- The vial should not be fully transparent in order to ensure that it can be detected by light barrier or light reflection detectors. The plastic should be opaque or translucent; if transparent its surface should be frosted (sanded aspect)
- The vials should be resistant to:
 - Liquid nitrogen temperature
 - Temperature cycling between room temperature and liquid nitrogen temperature
 - Moisture
 - Water
 - Alcohol

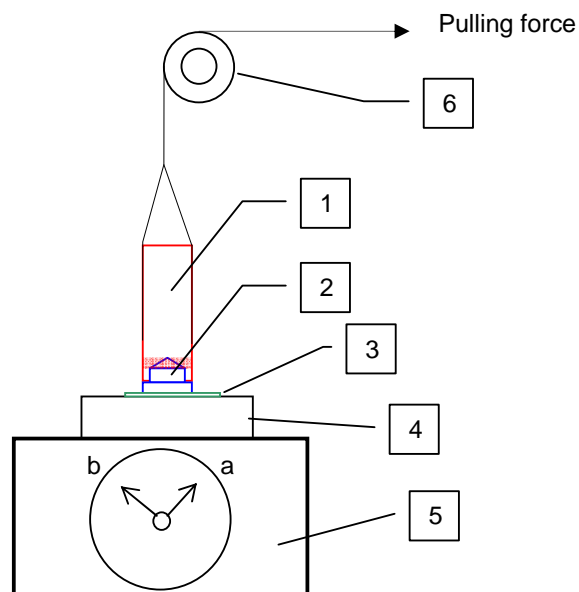
Caps - DM16106A

See Sample Holder identification below

Sample Holder identification:

- The human readable and DATA MATRIX identifiers should be resist to:
 - Liquid nitrogen temperature
 - Temperature cycling between room temperature and liquid nitrogen temperature
 - Moisture
 - Water
 - Alcohol
 - Wear off

Protocol for measuring the strength of the ring magnets



Measurement setup

A precision scale (5) is used to measure the force necessary to pull the vial from the cap. A cap (2) is fixed to a bloc of non magnetic material (4, brass or stainless steel) using strong double sided tape (3). The vial to be tested (1) is mounted on the cap. The vial is pulled up using a wire attached to it (with tape). The pulling force should be applied along the long axis of the vial. An optional standing block can be used to facilitate this operation (6).

Measurement

- 1) The total weight of the setup is measured (with vial mounted, no pulling force applied) (a)
- 2) The vial is pulled up slowly by the wire until it releases. The weight at the release time is noted (b)
- 3) The holding force is equal to (a) - (b)

Averaging of several measurements is necessary to obtain a good precision of the strength of the ring magnets.