



## Contents

1.	Scope.....	1
2.	Definitions .....	1
3.	Adhesive tape for electrical insulation purposes.....	1
4.	Adhesive tape for thermal conductance purposes.....	1
5.	Adhesive tape for other purposes .....	2
6.	Shelf life .....	2
7.	Documentation .....	2
8.	References.....	2

## 1. Scope

- 1) This document defines adhesive tapes, to be used in cryostat applications; being exposed to low radiation only; like
  - magnet cryostats
  - cryogenic supply systems
  - cryogenic transport systems
  - cryogenic current lead boxes
  - auxiliary cryogenic systems within FAIR accelerators.
- 2) This document is NOT related to any cold mass application as long as not cited within a dedicated specification.
- 3) This document is NOT related to any other purpose as aforementioned.

## 2. Definitions

- 1) A *cryostat* in terms of this guideline is a technical system enclosing another technical system to be operated at temperatures far below room temperature (e.g. 4.5K).

## 3. Adhesive tape for electrical insulation purposes

- 1) For electrical insulation purposes only adhesive tapes of the type 3M™ Polyimide Film Electrical Tape 92 or equivalent in composition, properties and quality are approved materials.
- 2) For a detailed specification see [1].

## 4. Adhesive tape for thermal conductance purposes

- 1) For applications where high thermal conductivity of the adhesive tape is required (e.g. protecting cryogenic temperature sensors) only adhesive tapes of the type 3M™ Aluminium Foil Tape 425 or equivalent in composition, properties and quality are approved materials.
- 2) For a detailed specification see [2].



## Technical Guideline

Number

3.57e

B-MT

## Adhesive Tapes for Cryogenic Purposes

Status

2011-08-02

### 5. Adhesive tape for other purposes

- 1) For applications where no requirements on electrical insulation or high thermal conductivity are required, adhesive tapes of the type 3M™ Polyester Foil Tape 825S or equivalent in composition, properties and quality are approved materials. 3M™ Polyester Foil Tape 825S is a tape with an Al – thin film coating.
- 2) For a more detailed specification see [3].
- 3) Polyester Foil Tape 825S or equivalent products must not be used for electrical insulation purposes.

### 6. Shelf life

- 1) Materials with exceeded shelf life must not be used.

### 7. Documentation

- 1) An adequate certificate stating the
  - defined properties to be approved
  - date of manufacturingshall be delivered with each lot of material in use.

### 8. References

- [1] Electrical Tape 92 Polyimide Film Tape with Thermosetting Silicone Adhesive, 3M Electrical Markets Division, Austin - Texas, USA, 2006
- [2] Aluminium Foil Tape 425-427, 3M Industrial Adhesives and Tapes Division, St. Paul - Minnesota, USA, 2008
- [3] Polyester-Klebebänder, 3M Deutschland GmbH, Neuss, Germany, 1998