DIN EN 16602-70-02:2015-01 (E)

Space product assurance - Thermal vacuum outgassing test for the screening of space materials; English version EN 16602-70-02: 2014

Contents

Page

Foreword 4

Introduction 5

1 Scope 6

2 Normative references 7

3 Terms, definitions and abbreviated terms 8

3.1 Terms defined in other standards 8

3.2 Terms specific to the present standard 8

3.3 Abbreviated terms 9

4 Test overview 11

4.1 Test process description 11

4.2 Acceptance limits 14

5 Requirements 15

5.1 General requirements 15

5.2 Preparatory conditions 15

5.2.1 Hazards, health and safety precautions 15

5.2.2 Material samples 16

5.2.3 Facilities 18

5.2.4 Equipment 18

5.3 Test procedure 20

5.3.1 General requirements 20

5.3.2 Test process for general spacecraft application 20

5.4 Reporting of test data 23

5.5 Acceptance limits 24

5.5.1 General requirements 24

5.5.2 Acceptance limits for a retest of the material 24

5.5.3 Acceptance limits for application of a material 25

5.6 Quality assurance 27

5.6.1 Data 27

5.6.2 Calibration 27

5.7 Audit of the Micro-VCM test apparatus 27
5.7.1 General 27
5.7.2 Initial audit of the system (acceptance) 28
5.7.3 Annual regular review (maintenance) of the system 29
5.7.4 Special review 30

Annex A (normative) Materials identification card (MIC) - DRD 31

Annex B (normative) Micro-VCM worksheet - DRD 34

Annex C (normative) Micro-VCM datasheet - DRD 37

Annex D (normative) Thermal vacuum outgassing test report - DRD 40

Annex E (normative) Certificate of conformity for Micro-VCM - DRD 42

Bibliography....44

Figures

Figure 4-1: Flow chart of preparation and initial measurements....11
Figure 4-2: Flow chart of test process....12
Figure 4-3: Parameters for sample 13
Figure 4-4: Parameters for collector plate....13
Figure 5-1: Micro-VCM equipment....20
Figure A-1 : Example of filled MIC 33
Figure B-1 : Example of filled in Micro-VCM worksheet 36
Figure C-1 : Example of filled in Micro-VCM datasheet....39
Figure E-1 : Example of a certificate of conformity for Micro-VCM 43

Tables

Table B-1 : Outgassing screening properties....35