

DIN EN 16602-70-03:2015-01 (E)

Space product assurance - Black-anodizing of metals with inorganic dyes; English version EN 16602-70-03:2014

Contents	Page
Table of contents	2
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
4 Principles	10
5 Requirements	11
5.1 Prior to anodizing.....	11
5.2 Work-piece selection and preparation.....	11
5.3 Facilities	12
5.4 Anodizing.....	12
5.4.1 General.....	12
5.4.2 Process control	12
5.4.3 Two-step and integral colouring methods.....	13
5.4.4 Treatment termination	14
5.5 Handling and storage of materials and parts.....	14
5.5.1 Material storage	14
5.5.2 Material handling and storage	14
5.6 Acceptance criteria	14
5.6.1 General.....	14
5.6.2 Visual inspection	14
5.6.3 Verification testing.....	15
5.7 Quality assurance.....	16
5.7.1 General	16
5.7.2 Specific requirements.....	16

Annex A (informative) Recipes for aluminium treatment.....	18
A.1 Introduction.....	18
A.2 Utilities.....	18
A.3 Hazards, health and safety precautions.....	18
A.4 Surface preparation.....	19
A.5 Anodizing process set-up.....	20
A.5.1 Hardware.....	20
A.5.2 Anodizing bath composition.....	20
A.5.3 Experimental parameters.....	21
A.6 Dyeing and sealing process.....	22
A.6.1 General.....	22
A.6.2 Cobalt sulphide black dyeing process.....	22
A.6.3 Nickel sulphide black dyeing process.....	22
A.7 Process summary.....	23
Bibliography.....	25

Tables

Table A-1 : Chemical species and associated hazard.....	19
Table A-2 : Anodizing electrolyte composition limits.....	21
Table A-3 : Summary of pre-treatment (see A.4).....	23
Table A-4 : Summary of anodizing (see A.5).....	23
Table A-5 : Dyeing with cobalt sulphide (see A.6.2).....	24
Table A-6 : Dyeing with nickel sulphide (see A.6.3).....	24