

DIN EN 14034-3:2006-08 (E)

Determination of explosion characteristics of dust clouds - Part 3: Determination of the lower explosion limit LEL of dust clouds

Contents		Page
Foreword		4
Introduction		5
1 Scope		6
2 Normative references		6
3 Terms and definitions		6
4 Test apparatus		7
4.1 General		7
4.2 Explosion vessel		7
4.3 Dust dispersion system (dust container, fast acting valve, connecting tube, dust disperser)		9
4.4 Ignition source		12
4.5 Control unit		12
4.6 Pressure measuring system		12
5 Dust sample		12
6 Test procedure		12
7 Calibration and verification		14
7.1 Calibration		14
7.2 Verification		14
8 Safety precautions/instructions		15
9 Alternative test equipment/procedures		15
10 Test report		15
Annex A (normative) Electro Pneumatic Valve		17
Annex B (normative) Dust disperser with 5 mm holes		19
Annex C (normative) 20 l sphere		22
C.1 General		22
C.2 Test apparatus		22
C.3 Test conditions		23
C.4 Test procedure		23
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 94/9/EC		25
Bibliography		26
Figures Figure 1 -- 1 m ³ vessel (schematic)		8

Figure 2 -- Dust container with blasting cap activated valve as commonly used for explosion suppression (schematic; it is commercially available)	9
Figure 3 -- Location of the 6 mm holes in the dust disperser	11
Figure 4 -- Dust dispersion and pressure-time curve	13
Figure 5 -- Determination of the lower explosion limit LEL	14
Figure A.1 -- Electro Pneumatic Valve (schematic)	17
Figure A.2 -- Discharge characteristic of dust dispersers (without dust)	18
Figure B.1 -- Location of the 5 mm holes in the dust disperser	20
Figure B.2 -- Rebound nozzle	21
Figure B.3 -- Dispersion cup	21
Figure C.1 -- Test equipment 20 l sphere (schematic)	23
Tables Table ZA.1 -- Correspondence between this European Standard and Directive 94/9/EC	25