

**Pürotehnilised tooted. Pürotehnilised tooted sõidukitele.  
Osa 4: Nõuded mikrogaasigeneraatoritele ja nende  
kategoriseerimine**

**Pyrotechnic articles - Pyrotechnic articles for vehicles -  
Part 4: Requirements and categorization for micro gas  
generators (ISO 14451-4:2013)**

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 14451-4:2013 sisaldab Euroopa standardi EN ISO 14451-4:2013 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 14451-4:2013 consists of the English text of the European standard EN ISO 14451-4:2013.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 20.03.2013.	Date of Availability of the European standard is 20.03.2013.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

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English Version

Pyrotechnic articles - Pyrotechnic articles for vehicles - Part 4:  
Requirements and categorization for micro gas generators (ISO  
14451-4:2013)

Articles pyrotechniques - Articles pyrotechniques pour  
véhicules - Partie 4: Exigences relatives aux  
microgénérateurs de gaz et leur classement en catégories  
(ISO 14451-4:2013)

Pyrotechnische Gegenstände - Pyrotechnische  
Gegenstände für Fahrzeuge - Teil 4: Anforderungen und  
Kategorisierung von Mikrogasgeneratoren (ISO 14451-  
4:2013)

This European Standard was approved by CEN on 9 February 2013.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This document (EN ISO 14451-4:2013) has been prepared by Technical Committee CEN/TC 212 "Pyrotechnic articles" the secretariat of which is held by NEN, in collaboration with Technical Committee ISO/TC 22 "Road vehicles".

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2013, and conflicting national standards shall be withdrawn at the latest by September 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive.

For relationship with EU Directive, see informative Annex ZA, which is an integral part of this document.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

### Endorsement notice

The text of ISO 14451-4:2013 has been approved by CEN as EN ISO 14451-4:2013 without any modification.

## Annex ZA (informative)

### Relationship between this European Standard and the Essential Requirements of EC Directive 2007/23/EC on the placing on the market of pyrotechnic articles

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide one means of conforming to Essential Requirements of the New Approach Directive 2007/23/EC on the placing on the market of pyrotechnic articles.

Once this standard is cited in the Official Journal of the European Union under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations.

**Table ZA.1 — Correspondence between this European Standard and Directive 2007/23/EC on the placing on the market of pyrotechnic articles (1 of 2)**

Clause(s)/sub-clause(s) of this document	Essential Safety Requirements (ESRs) of Directive 2007/23/EC	Qualifying remarks/Notes
4.7, 4.8	(1)	Note: It is taken into account that the intended purpose of the pyrotechnic article is to function in a vehicle in case of accidents
	(2)	See ISO 14451-2
4.8	(3) 1st sentence	
4.8	(3) 2nd and 3rd sentences	Note: It is taken into account that the intended purpose of the pyrotechnic article is to function in a vehicle in case of accidents
4.2	(3a)	
4.5	(3b)	
4.3, 4.4, 4.6	(3c)	
4.5	(3d)	
4.5	(3e)	
4.4, 4.5	(3f)	
4.6	(3g)	
	(3h)	See ISO 14451-3
4.3, 4.5	(3i)	

Table ZA.1 — (2 of 2)

Clause(s)/sub-clause(s) of this document	Essential Safety Requirements (ESRs) of Directive 2007/23/EC	Qualifying remarks/Notes
	(3j)	See ISO 14451-2
4.3, 4.4, 4.6	(3) Last sentence	
1	(4a)	
1	(4b)	
4.2, 4.8, 6	(5 B.1)	
	(5 B.2)	See ISO 14451-2 and ISO 14451-3
4.6	(5 B.3)	
	(5 B.4)	Not applicable
	(5 C.1) to (5 C.5)	Not applicable
4.2	(5 C.6)	
	(5 C.7)	Not applicable

**WARNING —** Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this part of EN ISO 14451.

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# Pyrotechnic articles — Pyrotechnic articles for vehicles —

## Part 4:

## Requirements and categorization for micro gas generators

### 1 Scope

This part of ISO 14451 specifies the types and order of tests to be applied to micro gas generators and sets out the associated acceptance criteria and means of categorization.

This part of ISO 14451 applies to type tests.

This part of ISO 14451 is not applicable to articles containing military explosives or commercial blasting agents except for black powder or flash composition.

### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 14451-1, *Pyrotechnic articles — Pyrotechnic articles for vehicles — Part 1: Terminology — Pyrotechnic articles for vehicles — Part 1: Terminology*

ISO 14451-2:2013, *Pyrotechnic articles — Pyrotechnic articles for vehicles — Part 2: Test methods*

ISO 14451-8:2013, *Pyrotechnic articles — Pyrotechnic articles for vehicles — Part 8: Requirements and categorization for igniters*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 14451-1 apply.

### 4 Requirements and acceptance criteria

#### 4.1 General

Micro gas generators shall meet the requirements specified in [4.2](#) to [4.8](#) taking into account to the test matrix of [Clause 5](#).

#### 4.2 Verification of design and documentation

Documentation shall be complete as specified in ISO 14451-2:2013, 4.1.

#### 4.3 Drop test

##### 4.3.1 Requirements

Micro gas generators shall be tested as specified in ISO 14451-2:2013, 4.2.