

Secondary cells and batteries — Test methods for checking the performance of devices designed for reducing explosion hazards — Lead-acid starter batteries

ICS 29.220.20

National foreword

This Published Document reproduces verbatim IEC 61430:1997. It supersedes BS 7481:1992 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PEL/21, Secondary cells and batteries, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international publications referred to in this document may be found in the *BSI Catalogue* under the section entitled “International Standards Correspondence Index”, or by using the “Search” facility of the *BSI Electronic Catalogue* or of British Standards Online.

Summary of pages

This document comprises a front cover, an inside front cover, the IEC/TR title page, pages 2 to 11 and a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 August 2006

© BSI 2006

ISBN 0 580 48581 1

Amendments issued since publication

Amd. No.	Date	Comments

TECHNICAL REPORT

IEC
61430

First edition
1997-10

**Secondary cells and batteries –
Test methods for checking the performance
of devices designed for reducing
explosion hazards –
Lead-acid starter batteries**



Reference number
CEI/IEC 61430:1997

CONTENTS

	Page
INTRODUCTION	3
Clause	
1 General	5
2 Protective measures	5
3 Safety precautions when testing devices for reducing explosion hazards	6
4 Preparation for testing	7
Figures	
1 Test fixture	7
2 Explosion test chamber	8
Annexes	
A Gassing test	8
B Spark test	9

INTRODUCTION

Lead-acid starter batteries contain an aqueous electrolyte of dilute sulphuric acid. They can emit hydrogen and/or oxygen gas during use, particularly during charging. Hydrogen-air or hydrogen-oxygen mixtures will explode, if ignited, over a wide concentration range of hydrogen (4 % V/V to 96 % V/V H₂). When such explosion occurs inside a battery, a rupture of the container associated with ejection of electrolyte and solid objects takes place.

The use of an effective flame arrester in the battery venting system will prevent an external explosion propagating into the battery.

No alterations should be made to the venting system of the battery for they may significantly affect the level of protection. Users wishing to make any change or addition to the battery assembly should seek advice from the battery manufacturer.