



JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS C 8715-2 : 2019

(BAJ/JSA)

**Secondary lithium cells and
batteries for use in industrial
applications—Part 2: Tests and
requirements of safety**

ICS 29.220.99

Reference number : JIS C 8715-2 : 2019 (E)

Date of Establishment: 2012-07-20

Date of Revision: 2019-03-20

Date of Public Notice in Official Gazette: 2019-03-20

Investigated by: Japanese Industrial Standards Committee
Standards Board for IEC area
Technical Committee on Electricity

JIS C 8715-2:2019, First English edition published in 2020-01

Translated and published by: Japanese Standards Association
Mita MT Building, 3-13-12, Mita, Minato-ku, Tokyo, 108-0073 JAPAN

In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

© JSA 2020

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Printed in Japan

AT

Contents

	Page
Introduction	1
1 Scope	1
2 Normative references	2
3 Terms and definitions	2
4 Parameter measurement tolerances	6
5 General safety considerations	6
5.1 General	6
5.2 Insulation and wiring	7
5.3 Venting	7
5.4 Temperature/voltage/current management	7
5.5 Terminal contacts of the battery pack and/or battery system	7
5.6 Assembly of cells, modules, or battery packs into battery systems	7
5.7 Operating region of lithium cells and battery systems for safe use	8
5.8 Quality plan	8
6 Type test conditions	8
6.1 General	8
6.2 Test items	9
7 Specific requirements and tests	10
7.1 Charging procedures for test purposes	10
7.2 Reasonably foreseeable misuse	11
7.3 Considerations for internal short-circuit — Design evaluation	17
8 Battery system safety	18
8.1 General requirements	18
8.2 Battery management system (or battery management unit)	19
9 Information for safety	22
10 Marking and designation	23
Annex A (normative) Operating region of cells for safe use	24
Annex B (informative) Procedure of propagation test	28
Annex C (informative) Packaging	30
Annex JA (informative) Comparison table between JIS and corresponding International Standard	31

Foreword

This Japanese Industrial Standard has been revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by Battery Association of Japan (BAJ)/Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently **JIS C 8715-2:2012** is replaced with this Standard.

This **JIS** document is protected by the Copyright Law.

Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights, applications for a patent after opening to the public or utility model rights. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying any of such patent rights, applications for a patent after opening to the public or utility model rights.

JIS C 8715 series consists of the following 2 parts under the general title *Secondary lithium cells and batteries for use in industrial applications*:

Part 1: Tests and requirements of performance

Part 2: Tests and requirements of safety

Secondary lithium cells and batteries for use in industrial applications— Part 2: Tests and requirements of safety

Introduction

This Japanese Industrial Standard has been prepared based on **IEC 62619:2017**, Edition 1, with some modifications of the technical contents taking into consideration the usage state of target secondary batteries in Japan.

The dotted underlines indicate changes from the corresponding International Standard. A list of modifications with the explanations is given in Annex JA.

1 Scope

This Standard specifies requirements and tests for the safe operation of secondary lithium cells and batteries (hereafter referred to as cells and batteries, respectively) used in industrial applications including stationary applications.

When there exists a **JIS** or **IEC** standard specifying test conditions and requirements for cells used in special applications and which is in conflict with this Standard, the former takes precedence (e.g. **IEC 62660** series on cells for the propulsion of electric road vehicles).

This Standard is applicable to the secondary lithium cells and batteries for stationary application and mobile application for industrial use. Practical examples for main applications are as follows.

- a) **Stationary applications:** telecom, uninterruptible power supplies (UPS), electrical energy storage system, emergency power and similar applications.
- b) **Motive applications:** fork-lift truck, golf cart, automated guided vehicle (AGV), railway, marine, etc., excluding road vehicles.

NOTE 1 Some secondary lithium cells and batteries are intended for portable devices. The safety of such secondary lithium cells and batteries are specified in **JIS C 8712**.

Since this Standard covers batteries for various industrial applications, it includes those requirements, which are common and minimum to the various applications.

Electrical safety is included only as a part of the risk assessment of Clause 8. In regard to details for risk assessment, the end use application standard requirements have to be considered.

This Standard applies to cells and batteries. If the battery is divided into smaller units, the smaller unit can be tested as the representative of the battery. The manufacturer clearly declares the tested unit. The manufacturer may add functions, which are present in the final battery, to the tested unit.

The requirements of performance and marking for secondary lithium cells and batteries for use in industrial applications are specified in **JIS C 8715-1**.