



EN Technical Specification – Safe Charging of Lithium-Ion Batteries

SV	Teknisk specifikation – säker laddning av litiumjonbatterier
FR	Spécification technique – recharge sûre des batteries lithium-ion
DE	Technische Spezifikation – Sicheres Laden von Lithium-Ionen-Batterien
IT	Specifica tecnica – ricarica sicura delle batterie agli ioni di litio
NL	Technische specificatie – veilig opladen van lithium-ionbatterijen
ES	Especificación técnica – carga segura de baterías de iones de litio



TECHNICAL SPECIFICATION –

SAFE CHARGING OF LITHIUM-ION BATTERIES

SPECIFICATION REQUIREMENT

Lithium-ion batteries shall be charged and/or stored in a fire containment system meeting the following requirements:



FUNCTIONAL REQUIREMENTS

- Containment of thermal runaway events
- No flame propagation outside enclosure
- External surface temperature below 100°C
- Integrated automatic fire suppression
- Closed compartment design



TEST VERIFICATION

- Full-scale testing with 100% State of Charge batteries
- Automatic activation of aerosol suppression system
- Demonstrated fire containment



COMPLIANCE OBJECTIVE

Ensure safe handling, storage, and charging of lithium-ion batteries in line with modern fire safety expectations.

KIWA REFERENCE:



“No flames or sparks were observed outside the cabinet.” (Kiwa Test Report, 2025, p.16)



“The temperature on the outside... did not exceed 100°C.” (Kiwa Test Report, 2025, p.19)



“Activation Aerosol Generators within 5 seconds” (Kiwa Test Report, 2025, p.11)



“The test was performed with 95–100% charged cells...” (Kiwa Test Report, 2025, p.13)



TEKNISK SPECIFIKATION –

SÄKER LADDNING AV LITIJONBATTERIER

SPECIFIKATIONSKRAV

Litiumjonbatterier ska laddas och/eller förvaras i ett brandinneslutningssystem som uppfyller följande krav:



FUNKTIONSKRAV

- Inneslutning av händelser med termisk rusning
- Ingen flamspridning utanför kapslingen
- Utvändig ytemperatur under 100 °C
- Integrerad automatisk brandsläckning
- Konstruktion med slutet utrymme



PROVNINGSVERIFIERING

- Fullskaliga tester med batterier vid 100 % laddningsnivå
- Automatisk aktivering av aerosolsläcksystemet
- Dokumenterad brandinneslutning



EFTERLEVNADSMÅL

Ensure safe handling, storage, and charging of lithium-ion batteries in line with modern fire safety expectations.

KIWA-REFERENS:



“No flames or sparks were observed outside the cabinet.” (Kiwa Test Report, 2025, p.16)



“The temperature on the outside... did not exceed 100°C.” (Kiwa Test Report, 2025, p.19)



“Activation Aerosol Generators within 5 seconds” (Kiwa Test Report, 2025, p.11)



“The test was performed with 95–100% charged cells...” (Kiwa Test Report, 2025, p.13)



SPÉCIFICATION TECHNIQUE –

RECHARGE SÛRE DES BATTERIES LITHIUM-ION

EXIGENCE DE SPÉCIFICATION

Les batteries lithium-ion doivent être rechargées et/ou stockées dans un système de confinement incendie répondant aux exigences suivantes :



EXIGENCES FONCTIONNELLES

- Confinement des événements d'emballlement thermique
- Aucune propagation de flammes hors de l'enceinte
- Température de surface extérieure inférieure à 100 °C
- Extinction automatique intégrée
- Conception à compartiment fermé



VÉRIFICATION PAR ESSAIS

- Essais à pleine échelle avec des batteries à 100 % d'état de charge
- Activation automatique du système d'extinction par aérosol
- Confinement incendie démontré



OBJECTIF DE CONFORMITÉ

Assurer la manipulation, le stockage et la recharge sûrs des batteries lithium-ion conformément aux attentes modernes en matière de sécurité incendie

RÉFÉRENCE KIWA :



“No flames or sparks were observed outside the cabinet.” (Kiwa Test Report, 2025, p.16)



“The temperature on the outside... did not exceed 100°C.” (Kiwa Test Report, 2025, p.19)



“Activation Aerosol Generators within 5 seconds” (Kiwa Test Report, 2025, p.11)



“The test was performed with 95–100% charged cells...” (Kiwa Test Report, 2025, p.13)



TECHNISCHE SPEZIFIKATION –

SICHERES LADEN VON LITHIUM-IONEN-BATTERIEN

SPEZIFIKATIONSANFORDERUNG

Lithium-Ionen-Batterien müssen in einem Brandeindämmungssystem geladen und/oder gelagert werden, das die folgenden Anforderungen erfüllt:



FUNKTIONALE ANFORDERUNGEN

- Eindämmung von Thermal-Runaway-Ereignissen
- Keine Flammenausbreitung außerhalb der Einhausung
- Außentemperatur der Oberfläche unter 100 °C
- Integrierte automatische Brandbekämpfung
- Geschlossene Fachkonstruktion



TESTVERIFIZIERUNG

- Vollmaßstabtest mit Batterien bei 100 % Ladezustand
- Automatische Aktivierung des Aerosol-Löschsystems
- Nachgewiesene Brandeindämmung



KONFORMITÄTSZIEL

Sichere Handhabung, Lagerung und Ladung von Lithium-Ionen-Batterien entsprechend modernen Brandschutzanforderungen gewährleisten

KIWA-REFERENZ:



“No flames or sparks were observed outside the cabinet.” (Kiwa Test Report, 2025, p.16)



“The temperature on the outside... did not exceed 100°C.” (Kiwa Test Report, 2025, p.19)



“Activation Aerosol Generators within 5 seconds” (Kiwa Test Report, 2025, p.11)



“The test was performed with 95–100% charged cells...” (Kiwa Test Report, 2025, p.13)



SPECIFICA TECNICA –

RICARICA SICURA DELLE BATTERIE AGLI IONI DI LITIO

REQUISITO DI SPECIFICA

Le batterie agli ioni di litio devono essere ricaricate e/o conservate in un sistema di contenimento antincendio che soddisfi i seguenti requisiti:



REQUISITI FUNZIONALI

- Contenimento degli eventi di fuga termica
- Nessuna propagazione delle fiamme all'esterno dell'involucro
- Temperatura superficiale esterna inferiore a 100 °C
- Sistema automatico antincendio integrato
- Struttura a compartimento chiuso



VERIFICA MEDIANTE PROVE

- Prove in scala reale con batterie al 100% dello stato di carica
- Attivazione automatica del sistema di estinzione ad aerosol
- Contenimento dell'incendio dimostrato



OBIETTIVO DI CONFORMITÀ

Garantire la manipolazione, lo stoccaggio e la ricarica sicuri delle batterie agli ioni di litio in linea con le moderne aspettative di sicurezza antincendio.

RIFERIMENTO KIWA:



“No flames or sparks were observed outside the cabinet.” (Kiwa Test Report, 2025, p.16)



“The temperature on the outside... did not exceed 100°C.” (Kiwa Test Report, 2025, p.19)



“Activation Aerosol Generators within 5 seconds” (Kiwa Test Report, 2025, p.11)



“The test was performed with 95–100% charged cells...” (Kiwa Test Report, 2025, p.13)



TECHNISCHE SPECIFICATIE –

VEILIG OPLADEN VAN LITHIUM-IONBATTERIJEN

SPECIFICATIE-EIS

Lithium-ionbatterijen moeten worden opgeladen en/of opgeslagen in een brandinsluitingssysteem dat aan de volgende eisen voldoet:



FUNCTIONELE EISEN

- Insluiting van thermal-runaway-incidenten
- Geen vlamverspreiding buiten de behuizing
- Externe oppervlaktetemperatuur onder 100 °C
- Geïntegreerde automatische brandblussing
- Ontwerp met gesloten compartiment



TESTVERIFICATIE

- Testen op ware grootte met batterijen op 100% laadstatus
- Automatische activering van het aerosolblussysteem
- Aangetoonde brandinsluiting



DOELSTELLING VOOR NALEVING

Veilige behandeling, opslag en oplading van lithium-ionbatterijen waarborgen in lijn met moderne verwachtingen voor brandveiligheid.

KIWA-REFERENTIE:



“No flames or sparks were observed outside the cabinet.” (Kiwa Test Report, 2025, p.16)



“The temperature on the outside... did not exceed 100°C.” (Kiwa Test Report, 2025, p.19)



“Activation Aerosol Generators within 5 seconds” (Kiwa Test Report, 2025, p.11)



“The test was performed with 95–100% charged cells...” (Kiwa Test Report, 2025, p.13)



ESPECIFICACIÓN TÉCNICA –

CARGA SEGURA DE BATERÍAS DE IONES DE LITIO

REQUISITO DE ESPECIFICACIÓN

Las baterías de iones de litio deberán cargarse y/o almacenarse en un sistema de contención de incendios que cumpla los siguientes requisitos:



REQUISITOS FUNCIONALES

- Contención de eventos de fuga térmica
- Sin propagación de llamas fuera del recinto
- Temperatura superficial exterior inferior a 100 °C
- Extinción automática de incendios integrada
- Diseño de compartimento cerrado



VERIFICACIÓN MEDIANTE ENSAYOS

- Ensayos a escala real con baterías al 100 % del estado de carga
- Activación automática del sistema de extinción por aerosol
- Contención del incendio demostrada



OBJETIVO DE CUMPLIMIENTO

Garantizar la manipulación, el almacenamiento y la carga seguros de las baterías de iones de litio conforme a las expectativas modernas de seguridad contra incendios.

REFERENCIA KIWA:



“No flames or sparks were observed outside the cabinet.” (Kiwa Test Report, 2025, p.16)



“The temperature on the outside... did not exceed 100°C.” (Kiwa Test Report, 2025, p.19)



“Activation Aerosol Generators within 5 seconds” (Kiwa Test Report, 2025, p.11)



“The test was performed with 95–100% charged cells...” (Kiwa Test Report, 2025, p.13)