

INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE NO. 21: SECONDARY CELLS AND BATTERIES

SUB-COMMITTEE 21A: SECONDARY CELLS AND BATTERIES CONTAINING ALKALINE OR OTHER NON-ACID ELECTROLYTES

Subject: Introduction to the

Map of secondary cells and batteries standards on the IEC Mapping platform
available under <https://mapping.iec.ch/#/maps/152>

The map takes the form of a matrix or table with 7 columns and 10 rows, not counting columns and rows that give more information on the organization of the table and on standards from other committees.

Secondary cells and batteries (IEC TC 21 & IEC SC 21A)							IEC TC 9	IEC TC 18	ISO/TC 22
General	Pb	Ni-Cd	Ni-MH	Li-Ion	Other	All			
General	Lead-acid batteries	Ni-Cd batteries	Ni-MH batteries	Li-Ion batteries		All batteries for no specific application			
Automotive	Lead-acid starter batteries			Li-Ion starter batteries		All starter batteries			
Traction	Lead-acid traction batteries	Ni-Cd traction batteries	Ni-MH traction batteries	Li-Ion traction batteries	High temperature traction batteries	All traction batteries			
Stationary	Stationary lead-acid batteries	Stationary Ni-Cd batteries	Stationary Ni-MH batteries	Stationary Li-Ion batteries	High temperature stationary batteries	All stationary batteries			
Emobility	Lead-acid batteries for emobility		Ni-MH batteries for emobility	Li-Ion cells for emobility		All batteries for emobility			Batteries for road vehicles
Portable	Portable lead-acid batteries	Portable Ni-Cd cells and batteries	Portable Ni-MH cells and batteries	Portable Li-Ion cells and batteries		All portable batteries			
Aircraft	Lead-acid aircraft batteries	Nickel cadmium aircraft batteries				All aircraft batteries	Railway batteries	Maritime batteries	
Energy storage	Batteries for energy storage			Li-Ion batteries for energy storage	Flow battery systems	All batteries for energy storage			
Other									
All	No specific chemistry	Lead-acid batteries	Ni-Cd batteries	Ni-MH batteries	Li-Ion batteries	Other batteries			

A click on this link from the map on the IEC website will open this document.

The columns of the map contain battery standards organized by the electrochemical system, in particular:

- Column A: General – No specific chemistry;
- Column B: Pb – Lead acid batteries;
- Column C: Ni-Cd – Nickel-Cadmium batteries;
- Column D: Ni-MH – Nickel-Metal Hydride batteries;
- Column E: Li-Ion – Lithium-Ion batteries;
- Column F: Other – Other chemistries; and
- Column G: All – All chemistries (summary over all columns).

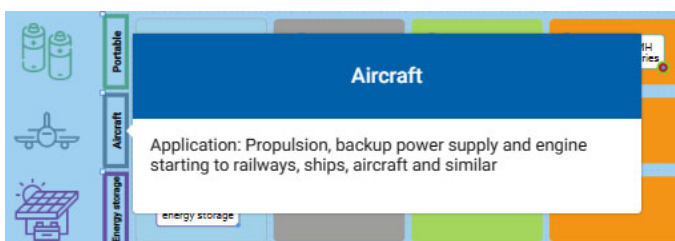
Where applicable, the matrix/table cells of the columns take the color of the electrochemical system as specified in IEC 62902 *Secondary cells and batteries - Marking symbols for identification of their chemistry*.

The rows contain battery standards organized by the application. Where applicable, the rows follow the description of applications as specified in section A of the TC 21 Strategic Business Plan (SBP) available in the Scope tab of the TC 21 dashboard on the IEC website. The SBP text for each application appears also in the tooltip being displayed when the mouse is over the application symbol or text in the map. The applications are symbolized by colors and symbols:

Row 1:		General	No specific application;
Row 2:		Automotive	Automotive applications for SLI (starting, lightning, ignition) and Start/Stop duty in cars, trucks, motorcycles and similar equipment;
Row 3:		Traction	Industrial applications for traction power supply to forklift trucks and similar vehicles;
Row 4:		Stationary	Stationary – Industrial applications for stationary emergency power supply duty to telecom and data networks as well as for emergency lighting and power backup for vital civil, industrial and military infrastructure;
Row 5:		E-mobility	Propulsion applications of personal transport means such as Electrical Vehicles (EV), Hybrid Electric Vehicles (HEV), Light Means of Transport (LMT), e-transporters, golf carts, and similar;
Row 6:		Portable	Applications for portable power supply to handheld equipment and devices;
Row 7:		Aircraft (Railways, ships) ¹	Applications for Propulsion, backup power supply and engine starting to railways, ships, aircraft and similar;
Row 8:		Energy storage	Storage of energy from renewable sources both in islanded and grid-connected installations (Battery Energy Storage Systems or BESS). See also: Stationary industrial batteries;
Row 9:		Other	Other applications; and
Row 10:		All	All applications (summary over all rows).

Applications and symbols and their description in the SBP

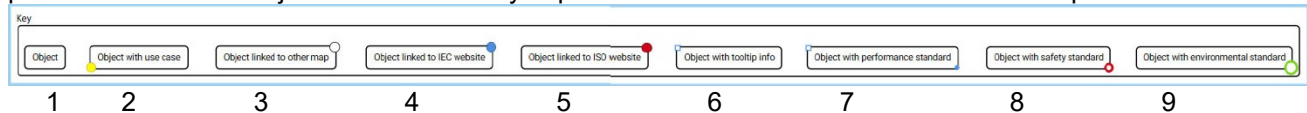
The following picture is an example for the application tooltip appearing when the mouse is over the Aircraft application symbol.



Tooltip text of the "aircraft" application

¹ Standards for railway and maritime applications are currently developed by IEC / TC 9 and TC 18.

Most map objects containing standards take the form of a rectangle. The frame colors of these rectangles symbolize the applications. Most objects have a so called “decoration” in the form of a small square or circle placed at one of the object’s corners. A Key explains the use of each decoration in this map:



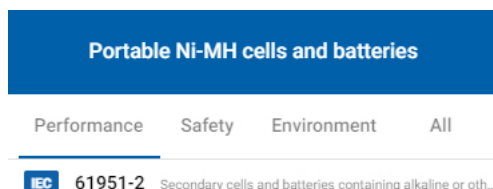
- 1 Object (no decoration)
- 2 Object with use case (Bottom Left Corner yellow circle)
- 3 Object linked to another map (Top Right Corner white circle)
- 4 Object linked to IEC website (Top Right Corner blue circle)
- 5 Object linked to ISO website (Top Right Corner red circle)
- 6 Object with tooltip info (Top Left Corner white square)
- 7 Object with performance standard (Like object 6 & Bottom Right Corner blue circle)²
- 8 Object with safety standard (Like object 6 & Bottom Right Corner red circle)
- 9 Object with environmental standard (Like object 6 & Bottom Right Corner green circle)

Objects with tooltip information display this information when the mouse is placed over them. Objects with standards display a list of standards associated with that object. In the language of the Mapping platform, each standard forms a tab element within a tab. The tooltip information of this map is basically organized in the following tabs:

- a) General standards
- b) Performance standards
- c) Safety standards
- d) Environmental standards
- e) All standards: summary of items a) through d)

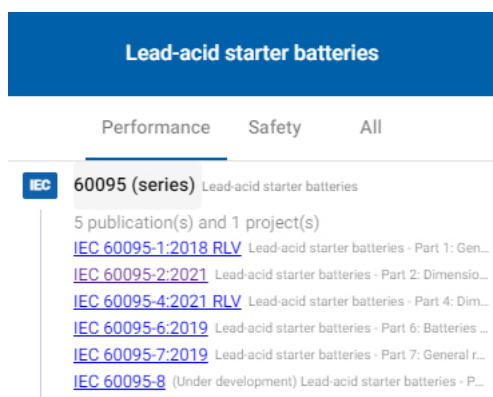
Standards appear as a stand-alone entry, as one part of a series, or as a series.

A mouse click on a standard displays more information on that standard together with a link. Another mouse click on that link will open the website of the IEC webstore, where this standard is described. Another mouse click on *Preview* will then open the preview of that standard.



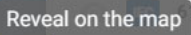
Tooltip information with a standalone standard before clicking on it

A mouse click on a series will display more information on each part of that series with the functionality for access to the IEC webstore and to the preview of that part.



Tooltip information with a series after clicking on it

² Object 7 has a tooltip displaying, upon mouseover, other common contents of performance standards.

The map can be searched for any particular standard by using the search icon  in the menu at the bottom of the map. A list of matching standards will be displayed. They can be revealed on the map using the reveal on the map icon  appearing next to the list items.

Tab elements

Search...

951

2 element(s)

  61951-1

  61951-2

  61951-1

Reveal on the map

61951-2

Result when searching '951' with the search icon 

Use of the 'reveal on the map' icon

Secondary cells and batteries (TC 21 & SC 21A)

TC 9

General	Lead-acid	Ni-Cd	Ni-MH	Li-ion	Other	All	
General	Lead-acid batteries	Ni-Cd batteries	Ni-MH batteries	Li-ion batteries		Secondary cells and batteries for general use	
Automotive	Lead-acid starter batteries			Li-ion starter batteries		All starter batteries	
Traction	Lead-acid traction batteries	Ni-Cd traction batteries	Ni-MH traction batteries	Li-ion traction batteries	High temperature traction batteries	All traction batteries	
Stationary	Stationary lead-acid batteries	Stationary Ni-Cd batteries	Stationary Ni-MH batteries	Stationary Li-ion batteries	High temperature stationary batteries	All stationary batteries	
Emobility	Lead-acid batteries for Emobility		Ni-MH batteries for Emobility	Li-ion cells for Emobility		All batteries for Emobility	
Portable	Portable lead-acid batteries	Portable Ni-Cd cells and batteries	Portable Ni-MH cells and batteries	Portable Li-ion cells and batteries		All portable batteries	
Aircraft	Lead-acid aircraft batteries	Nickel cadmium aircraft batteries				All aircraft batteries	Railway batteries
Energy storage	Batteries for energy storage			Li-ion batteries for energy storage	Flow battery systems	All batteries for energy storage	
Other							
All	No specific chemistry	Lead-acid batteries	Ni-Cd batteries	Ni-MH batteries	Li-ion batteries	Other batteries	All batteries and applications

Result of using the 'reveal on the map' icon for IEC 61951-1: The tool reveals – for a moment – objects containing the standard.

The map will have to be updated manually when new standards are published.

Standards already contained in the map will be dynamically updated when a standard is revised.