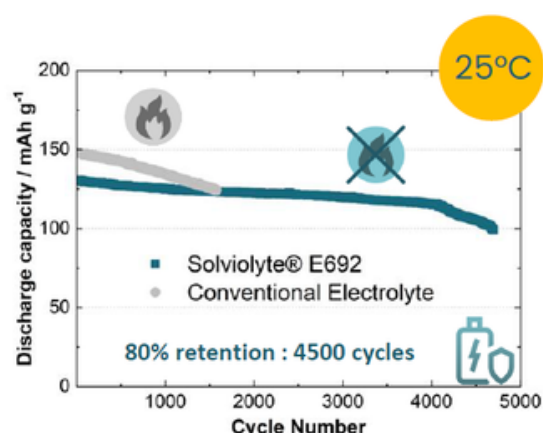


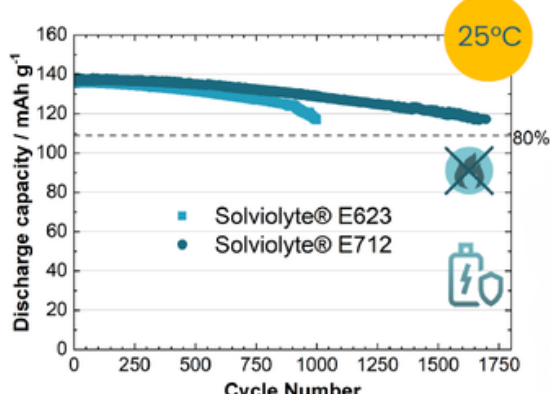
Solvolyte®: solid-state batteries (SSBs) enablers



Solvolyte®, is a range of high voltage and non-flammable liquid electrolytes designed to meet the requirements of the most advanced batteries.

What makes our electrolytes so unique :

- ✓ Non-flammable, high temperature compatible
- ✓ High voltage cathode compatible
- ✓ Lithium metal anode compatible
- ✓ No gas evolution during formation step



➤ Solvolyte® outperforms SoA organic electrolytes in terms of high voltage cycling stability, high temperature operations and Li metal anode compatibility.

Solvolyte® reduces SSBs time-to-market

SSBs pave the way to safer and higher energy density batteries. But the performances of solid-state electrolytes remain a hurdle, as they most often lead to poor contact and ion transfer across interfaces. This is why the addition of organic liquid electrolytes to form gel electrolytes and/or to “wet” the interfaces is widely used by SSB developers. While this strategy efficiently lowers the interfacial resistance, it is detrimental to safety. This is where Solvolyte® make all the difference.

Thanks to their peculiar properties, Solvolyte® electrolytes serve as interface enhancers to :

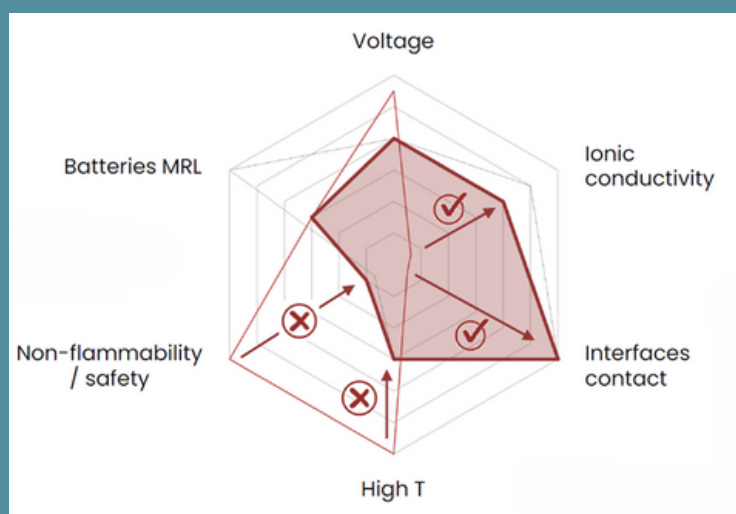
- enhance ion transfer across interfaces and lower resistance,
- increase ionic conductivity of solid-state electrolytes,
- eliminate the requirement of stack pressure application,

while preserving safety properties

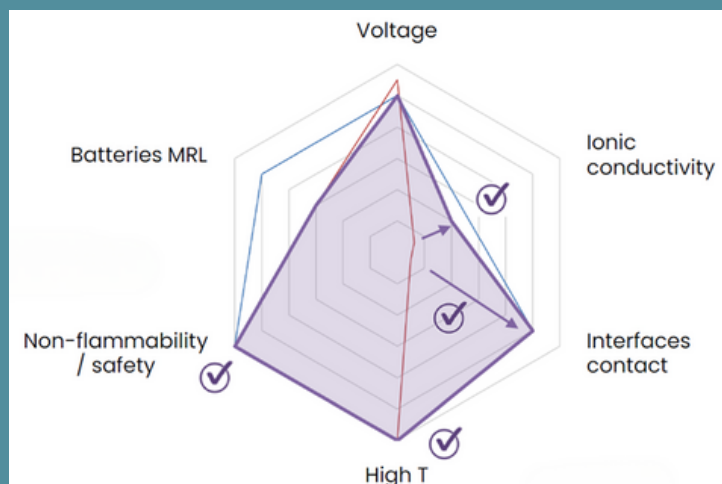
💡 **The result: unlocking solid-state battery technology**

Zoom on : Putting It to the Test

To illustrate the benefits of our product, two case studies are shown below :



First case: the addition of SoA electrolyte in a SSB (ceramic-like materials) improves contact at the interfaces and enhances ionic conductivity, but to the detriment of safety and thermal stability. The counterpart is a battery that loses its main advantages of safety and high temperature performance.



Second case: this is the illustration of a much more favorable balance with the integration of Solvolyte® technology : the electrochemical performances are improved without compromising safety and high temperature stability.

Solvolyte® enhances the benefits of solid-state batteries.

Area of application : High temperature environment (drilling, hot climates, ...), IoT, lightweight mobility, etc.

Packaging : 50g to ton scale

Publications :

H. Huo et al., National Science Review, Vol. 10, Issue 6, June 2023. <https://doi.org/10.1093/nsr/nwad098>

C. Fu et al., Adv. Energy Mater. 2022, 12, 2200412. <https://doi.org/10.1002/aenm.202200412>

G. Homann et al., ACS Appl. Energy Mater. 2024, 7, 21, 10037–10043

<https://www.empa.ch/web/s604/solidify-h2020-lithium-metall-batterie>

CONTACT US FOR MORE INFORMATION