

# Solid-State Landscape



	Separator	Anode	Test Conditions				Source	
		Carbon or Lithium	Number of Layers	Cycles to 80%	Current density / mA cm <sup>2</sup>	Temp / °C		Pressure / atm
EV Performance Impact			Vehicle Life	Driving Range / Fast Charge	Automotive Environmental Requirements	Automotive Environmental Requirements		
Automotive Requirement			Dozens	>800	> 3	≤30 °C	<1	
Toyota	Sulfide	Carbon/ Silicon	Not Published	Not Published	Not Published	Not Published	Not Published	<u>NEDO 2018 presentation</u>
ProLogium	90% ceramic / liquid		Not Published	1300	Not Published	Not Published	Not Published	<u>Disclosed at De-Leon Conference ProLogium Brochure</u>
Ionic Materials	Polymer	Lithium Metal	1	20	0.5	30	Not Published	<u>Disclosed at 2020 AABC</u>
Samsung	Sulfide		2	1000	3.4	60	20	<u>2020 paper</u>
SES	Polymer + Liquid		Not Published	60	1.7	Not Published	Not Published	<u>Disclosed at 2020 AABC</u>
Solid Power	Sulfide		2	250	0.3	29	Not Published	<u>Solid Power Twitter Disclosed at AABC Europe Solid Power Update</u>
			22	30	0.3	29		
QuantumScape	100% Ceramic	4	>800	3.1	30	3.4	<u>QS Shareholder Letter</u>	
		1	>1000	3.2	30	3.4		

  

KEY	≥10	2-10	1	≥800	600-800	<600	≥3	<3	≤30	30-45	>45	<2	2-10	≥10
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For a detailed description of the performance metrics and separator materials characteristics please refer to [Solid-State Battery Landscape](#).

PLEASE NOTE: The data presented above is made as of March 4, 2021 and is based on information that we have been able to obtain, infer or derive from publicly disclosed materials and presentations. This information likely will change over time and QuantumScape does not make any representations as to the accuracy and completeness of the competitive data presented, nor does it make any claims about the actual performance of the cells being developed by other companies. By presenting this information, we do not undertake any obligation to update this chart to reflect events or circumstances after the date they were made, whether as a result of new information, future events or otherwise, except as may be required under applicable laws.