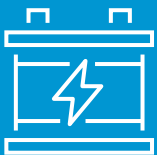


## Start-Stop Battery Technology

A vehicle's start-stop system automatically shuts down and restarts the engine to reduce the amount of time spent idling. As a result, emission reduction and fuel economy gains ranging from 3-10% could be achieved.

Absorbent Glass Mat (AGM) batteries are ideal for start-stop systems and offer cycle stability three times higher than conventional batteries. AGM batteries are designed to meet the continuous load discharge and charging cycles required for start-stop systems and are capable to meet the vehicle's power demands even when the engine is shut down.

AGM battery components are held in compression and often require a reinforced case and lid to withstand demanding internal pressures. The case and lid are also welded, which further increases the demand for compatible materials with excellent dimensional stability.



With a diverse portfolio of engineered polymers, LyondellBasell can offer a variety of material solutions for your unique start-stop battery design.

### Material Solutions for Start-Stop Battery Design

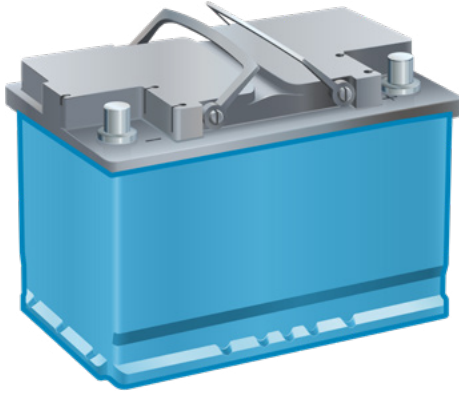
#### Outer Battery Case

- Hostacom
- Pro-fax
- Polyfort

#### Battery Lid

- Hostacom
- Pro-fax
- Polyfort

## DESIGN SELECTION EXAMPLE

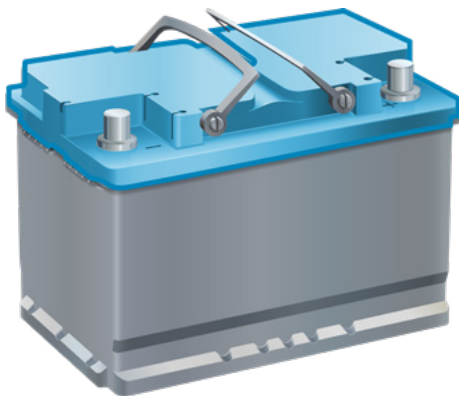


### Outer Battery Case

#### Hostacom

*Hostacom* polypropylene (PP) compounds can be tailored for high rigidity, excellent low temperature impact strength, and superior dimensional stability. These materials can also be custom colored for product differentiation. *Hostacom* EKC 318D was specifically developed to meet the rigorous demands for AGM battery cases and has been used successfully by OEM and Aftermarket suppliers.

*Pro-fax* PP copolymers offer a lighter weight, lower stiffness and a cost-effective alternative for case construction. A grade commonly specified is *Pro-fax* SB786.



### Battery Lid

#### Hostacom

*Hostacom* PP compounds can be formulated for high stiffness performance and superior weldability, enabling the lid to be secured to the case. *Hostacom* M2 N01, a 20% talc reinforced PP, offers such performance and can be custom colored.

Additionally, *Pro-fax* SB786 can be used for battery lids as it offers exceptional weldability to the case.

## Product Options for Battery Case and Lid

	<i>Hostacom</i> EKC 318D	<i>Hostacom</i> M2 N01	<i>Pro-fax</i> SB786
Density	1.05 g/cm <sup>3</sup>	1.06 g/cm <sup>3</sup>	0.90 g/cm <sup>3</sup>
Tensile Modulus	1950 MPa	2700 MPa	1000 MPa
Charpy Impact Strength	9 kJ/m <sup>2</sup>	5 kJ/m <sup>2</sup>	8 kJ/m <sup>2</sup>

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