

Valve Regulated Lead Acid Battery Separator (VRLA)

EnergyGuard® DB

SLI, Uninterruptible Power Supply (UPS)

EnergyGuard® HB

Automotive Start-Stop, SLI, Telecommunications, Motive Power

EnergyGuard® WB

Telecommunications, Motive Power

BGCB Series

Automotive Start-Stop, SLI, Uninterruptible Power Supply (UPS)

BGO Series

Telecommunications, UPS, Emergency Lighting, Security Systems

Pasting Paper

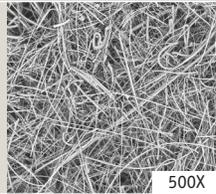
Continuous-cast plate manufacturing

Valve Regulated Lead Acid (VRLA) Battery Separator Products

Hollingsworth & Vose Company has been developing and commercially supplying VRLA battery separator to the battery industry for more than 30 years. H&V has a wide range of 100% microglass as well as microglass/synthetic fiber blend VRLA separators. These separators have been engineered with BET Surface Area values of 1.1-2.0 m²/g and grammages of 31-450 g/m² depending on the fiber blend.

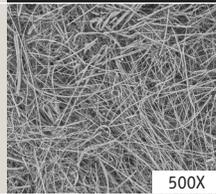
H&V produces its VRLA battery separator products in four facilities on three continents. Each production facility has an R&D technical support team to serve the worldwide customer base. H&V separator manufacturing equipment produces the best tolerances for grammage and thickness in the industry. Our VRLA battery separators are used in batteries with a variety of end-use applications, including Automotive Start-Stop, Automotive SLI, Telecommunications Back Up, Uninterruptible Power Supply (UPS), Motive Power, Motorcycle, Lawn and Garden Equipment, Electric Bike, Emergency Lighting, and Alarms.

This product catalog contains many of the separators commercially manufactured and available at this time.



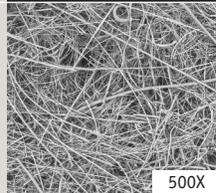
EnergyGuard® DB

EnergyGuard® DB is a strong, puncture-resistant separator that helps prevent shorting during the battery manufacturing process. This product line is very durable and excels in high vibration and rough-duty environments.



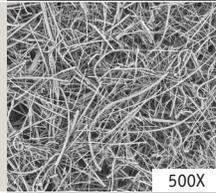
EnergyGuard® HB

EnergyGuard® HB is a strong, puncture-resistant material with high specific surface area. A member of the EnergyGuard® family, EnergyGuard® HB is optimized for high throughput processing and for rugged applications, while boasting best in-class electrolyte distribution and protection against acid stratification.



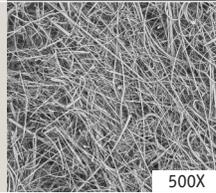
EnergyGuard® WB

EnergyGuard® WB is a high performance EnergyGuard® specifically tailored to high grammage applications. With superior puncture-resistance and specific surface area, this product line offers the best physical qualities to batteries that require more acid.



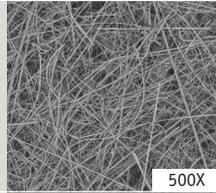
BGO Series

The BGO Series is a versatile, all-purpose separator used in Uninterruptible Power Supply (UPS) and Telecommunications batteries. BGO exhibits excellent compression recovery properties.



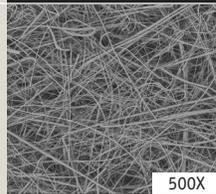
BGCB Series

BGCB is a variant of the BGO Series with enhanced scuff resistance and increased tear strength. It allows higher battery processing rates and improved short-protection in an all-glass separator.



BG03015

BG03015 is a pasting paper with exceptionally high surface area and tensile strength. Applied to the wet pasted plate, it helps secure the lead paste to the grid, reduces plate surface dusting, and improves electrolyte flow to and from the plate.



BGM03310

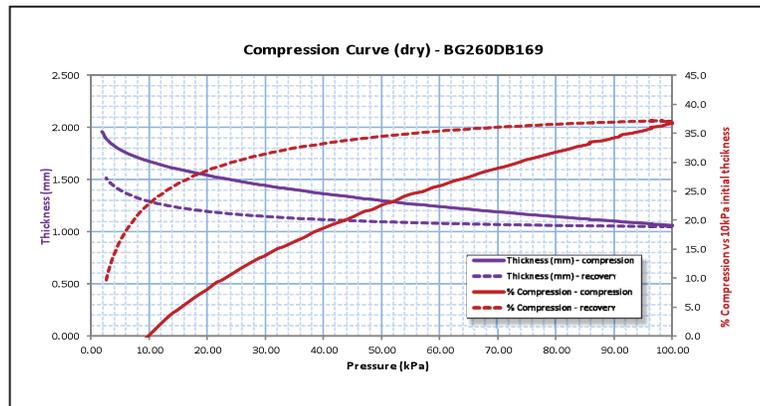
BGM03310 is a standard-duty pasting paper. Used in the lead pasting process, it holds the wet paste to the grid. Pasting paper also assists in electrolyte flow and protection against acid stratification.

ENERGYGUARD® DB

BET SURFACE AREA 1.30 m²/g

EnergyGuard® DB has high strength for faster battery production and protection against shorts. This separator is good choice for high-vibration applications, SLI, and UPS.

Grade	Grammage g/m ²	Thickness mm10kPa	MD Tensile lb/in
BG200DB130	200	1.300	4.5
BG220DB140	220	1.400	5.0
BG260DB169	260	1.690	5.5
BG290DB190	290	1.900	6.0
BG330DB217	330	2.170	6.5
BG390DB253	390	2.530	7.0

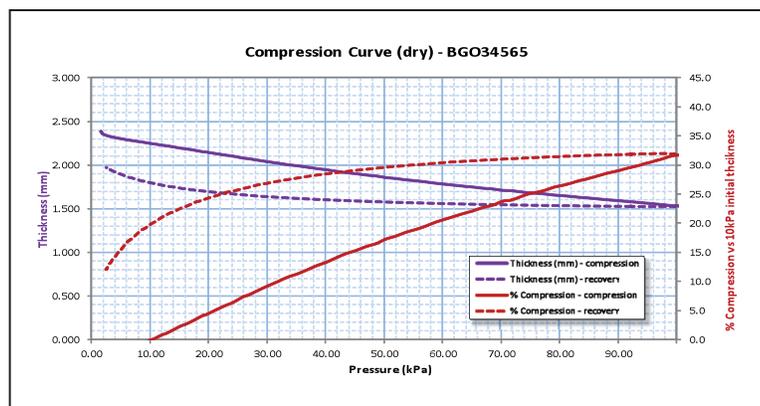


BGO SERIES

BET SURFACE AREA 1.40 m²/g

BGO Series is an all-purpose separator, popular in UPS, telecommunications, emergency lighting, and security systems. BGO exhibits excellent compression recovery properties.

Grade	Grammage g/m ²	Thickness mm10kPa	MD Tensile lb/in
BGO18065	180	1.190	3.0
BGO23065	230	1.520	4.0
BGO28065	280	1.850	4.5
BGO34565	345	2.290	5.5
BGO38065	380	2.520	5.5
BGO41065	410	2.720	5.5

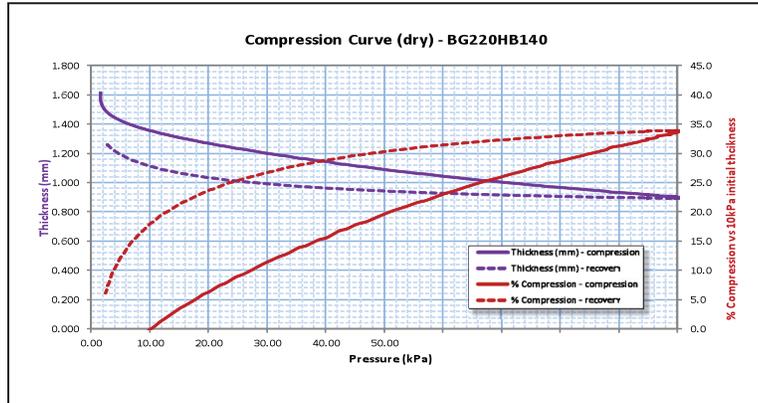


ENERGYGUARD® HB

BET SURFACE AREA 1.80 m²/g

EnergyGuard® HB has high surface area for excellent electrolyte distribution and resistance to acid stratification, particularly in PSOC cycling. It's high strength enables fast processing and endurance in high-vibration applications.

Grade	Grammage g/m ²	Thickness mm10kPa	Tensile
BG160HB104	160	1.04	6.0
BG200HB127	200	1.27	7.5
BG220HB140	220	1.40	7.5
BG240HB152	240	1.52	8.0



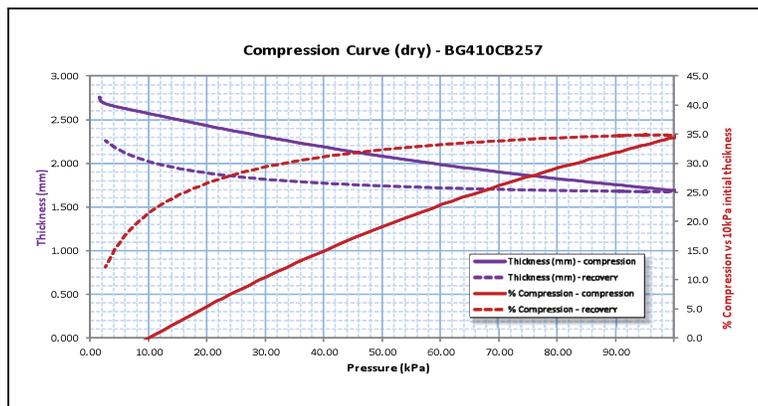
BGCB SERIES

BET SURFACE AREA 1.35 m²/g

The BGCB Series is an all-glass separator with added scuff-resistance and tear strength.

This separator suits Automotive Start/Stop, SLI, and UPS applications.

Grade	Grammage g/m ²	Thickness mm10kPa	MD Tensile lb/in
BG190CB119	190	1.19	3.0
BG210CB132	210	1.32	3.0
BG330CB206	330	2.06	4.5
BG350CB219	350	2.19	4.5
BG410CB257	410	2.57	5.5

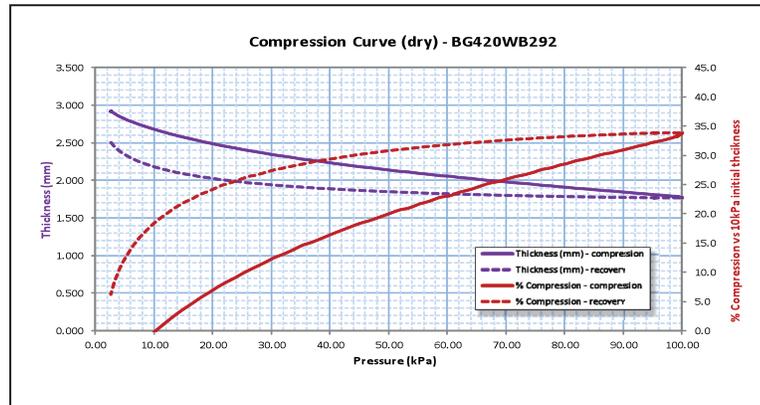


ENERGYGUARD® WB

BET SURFACE AREA 1.60 m²/g

EnergyGuard® WB is a high strength separator for heavy grammage applications. It's high surface area makes it ideal for electrolyte distribution and resistance to acid stratification.

Grade	Grammage g/m ²	Thickness mm 10kPa	MD Tensile lb/in
BG340WB218	340	2.18	10.0
BG360WB231	360	2.31	10.0
BG380WB257	380	2.57	10.0
BG420WB292	420	2.92	10.5



BG03015 PASTING PAPER

BET SURFACE AREA 2.1 m²/g

BG03015 is a Pasting Paper with exceptionally high strength and surface area. It improves the electrolyte distribution across the plates and reduces dusting in processing.

Grade	Grammage g/m ²	Thickness mm 10kPa	Tensile lb/in
BG03015	35	0.22	2.0

BGM03310 PASTING PAPER

BET SURFACE AREA 1.9 m²/g

BGM03310 Pasting Paper improves the electrolyte distribution and reduces plate surface dusting on cured plates.

Grade	Grammage g/m ²	Thickness mm 10kPa	MD Tensile lb/in
BGM03310	33	0.20	1.2

About Hollingsworth & Vose Company

Founded in 1843, U.S.-based Hollingsworth & Vose Company is one of the world's leading nonwovens and fibrous materials manufacturers. Hollingsworth & Vose, with its advanced R&D and pilot manufacturing facilities, drives value in customers' products by inventing next-generation materials with superior performance. H&V's products are found in applications such as engine filtration, high efficiency air and liquid filtration, battery separators, gasket materials, and specialty and industrial nonwovens. The company's expertise and process capabilities include wet laid, dry laid, meltblown, and composite technologies. For more information, visit <http://www.hovo.com>.



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