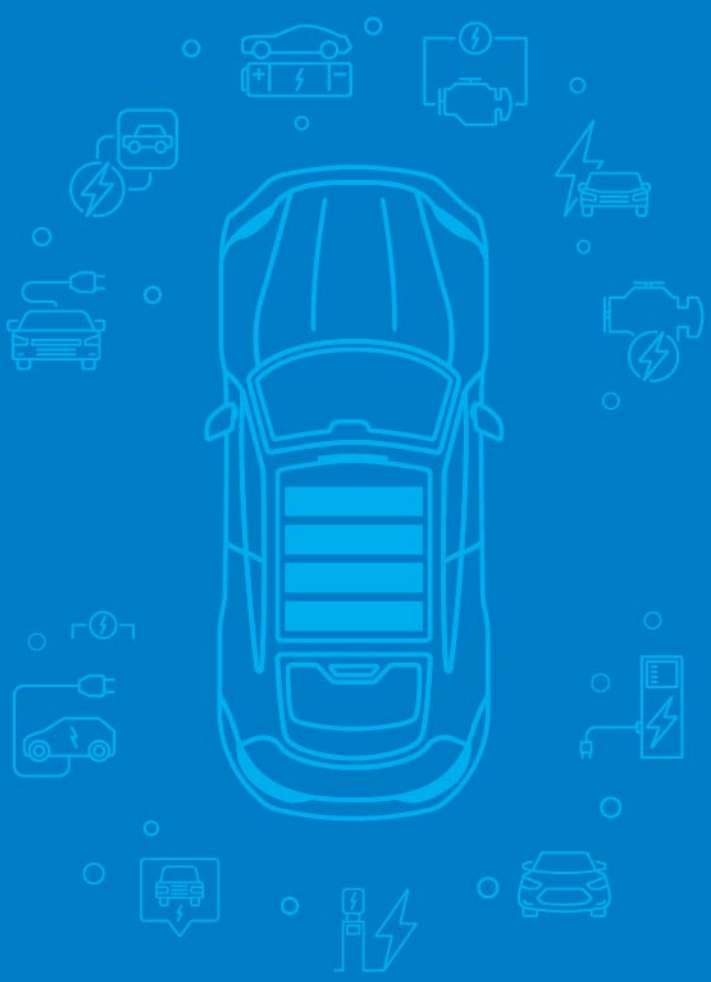
HIMCEN

Automotive | Marine | EFB | AGM

Lead-Acid Battery



gims

Global Innovative Material System

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OVERVIEW

PRODUCT RANGE

REFERENCES


HIMCEN
Innovative Total Energy Solution Provider

Innovative Total Energy Solution Provider

gims is a total energy solution provider established in 2006. Since then, we have been a trusted intermediary, facilitating the seamless export of high-quality automotive batteries and lithium-ion cells to our esteemed clients in North America.

As a leading one-stop-shop and total energy solution provider, we serve as a vital link between reputable manufacturers in Korea and distributors overseas, streamlining the supply chain and ensuring efficient procurement and delivery processes for our clients. We offer a diverse range of products to meet the varying needs of our customers.

Our mission is to connect our clients with top-quality automotive batteries that meet their specific requirements while providing exceptional value and service. We strive to exceed expectations through our commitment to reliability, integrity, and customer satisfaction.

HISTORY of Global Innovative Material System

2021
In-house lead-acid battery brand "HIMCEN" trademarked

2020
Lead-acid battery sales began in the US Canada

2016
PSA film sales for banner

2010
Clients expanded to medical military markets
Launched sales offices in US China
PVC film sales for banner

2008
18650 Polymer cell sales in portable devices

2006
Founded as an official distributor of LG Ensol(Ex-LG Chem)
Licensed as SK Siltron's official sales agency

CORE COMPETENCE

HIGH QUALITY

We implement stringent quality control measures to ensure that all products meet or exceed industry standards and customer expectations.

COMPETITIVE PRICING

Take advantage of our competitive pricing and favorable terms, maximizing your cost savings and profitability.

RELIABLE LOGISTICS

With our efficient logistics and distribution network, we ensure timely delivery of products to your desired location, wherever you are.

DEDICATED SUPPORT

Our team of experienced professionals is committed to providing personalized support and assistance, guiding you through every step of the procurement process.

Experience the convenience and reliability of our services.
Contact us to learn more about our services and how we can fulfill your automotive battery requirements with efficiency and excellence.

HIMCEN : Power Redefined

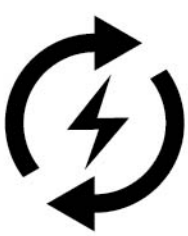
Derived from the Korean word meaning "strong and powerful"
HIMCEN embodies the essence of resilience, reliability, and performance.

Unleashing Power

We believe in harnessing the full potential of energy to drive innovation and empower vehicles with unmatched performance capabilities.
Our batteries deliver superior power output, ensuring smooth starts, consistent performance, and enduring reliability in every journey.

The Essence of Strength

Just as the name suggests, HIMCEN represents the epitome of strength and durability in automotive batteries.
Built to withstand the rigors of demanding driving conditions and guarantees optimal performance and longevity.



Powering Possibilities

Whether navigating city streets or conquering off-road terrain, HIMCEN batteries provide the power and confidence to tackle any challenge with ease. From compact cars to heavy-duty trucks, our diverse range of batteries is designed to meet the needs of every vehicle type, ensuring maximum power delivery and efficiency.

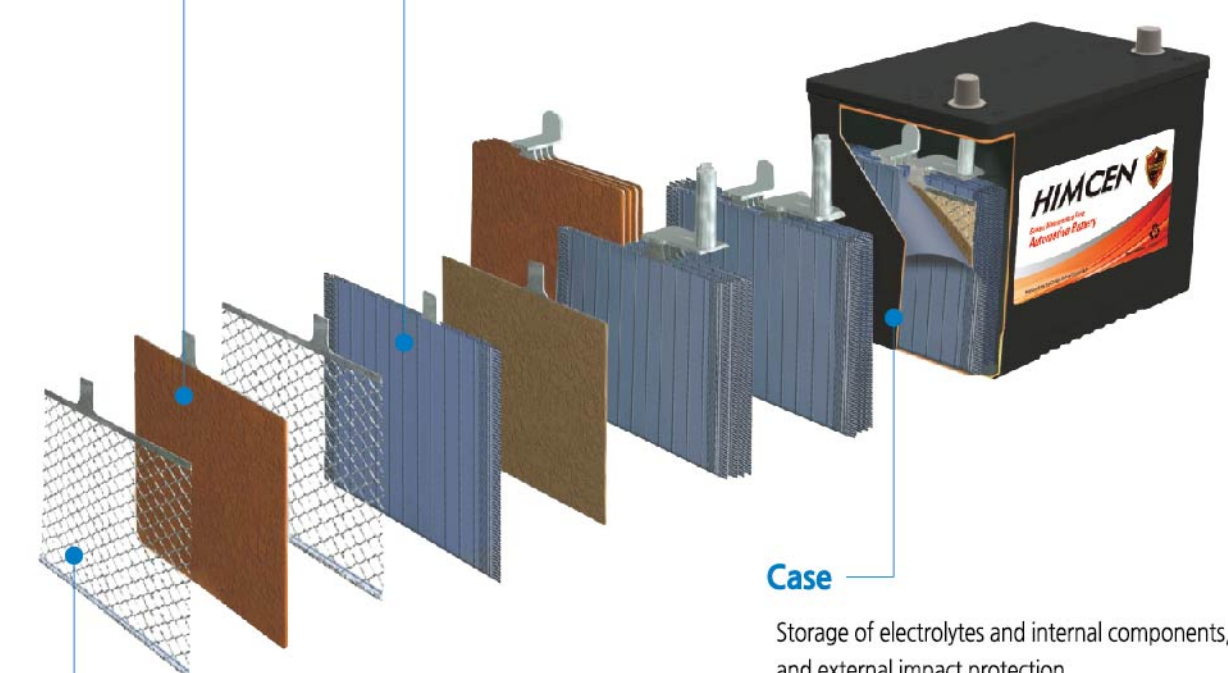
Sealed Maintenance Free

Plate

- Electrical energy storage and output through electrochemical reactions
- Active materials containing special additives realize high battery performance

Separator

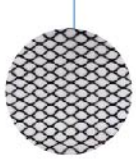
- Strong durability for prevention of short circuits between anode and cathode plates
- Storage of electrolytes



Case

Storage of electrolytes and internal components, and external impact protection

- **Cover**
  - **Terminal**
    Connection of electrical current to vehicle electrical components
  - **Flame arrestor**
    Prevention of explosions caused by external flames entering the battery
  - **Handle**
    Increase battery mobility



Expanded Grid

- Fine grain structure, which is arranged long way along the grid wires
- Supports active material and allows current flow
- Enhanced charge acceptance capabilities and improved self regulating performance when battery fully charged
- High quality, high refined lead alloy guaranteeing a low self-discharge rate

* Specifications are subject to change with or without notice.

PRODUCT RANGE

- BCI
- JIS
- DIN
- EFB
- AGM


HIMCEN
Global Innovative Material System

BCI TYPE

GROUP SIZE	PART NO.	SPECIFICATION										
		CCA SAE	RC (min.)	C20 AH	Dimension (mm)				Handle Type	Layout	Terminal	Hold down
					L	W	H	TH				
GP21	21R-480	480	80	50	206	172	197	218	PH	1	STD	B7
GP22NF	22NF-330	330	60	40	238	134	183	204	PH	1	STD	B9
GP22F	22F-560	560	90	55	240	172	181	202	PH	1	STD	B9
GP24	24-400	400	81	50	260	172	200	221	PH	2	STD	B7
	24-500	500	100	60	260	172	200	221	PH	2	STD	B7
	24-600	600	140	75	260	172	200	221	PH	2	STD	B7
	24-650	650	140	78	260	172	200	221	PH	2	STD	B7
	24-680	680	140	80	260	172	200	221	PH	2	STD	B7
	24-700	700	150	85	260	172	200	221	PH	2	STD	B7
	24-770	770	150	85	260	172	200	221	PH	2	STD	B7
	24R-400	400	81	50	260	172	200	221	PH	1	STD	B7
	24R-500	500	100	60	260	172	200	221	PH	1	STD	B7
	24R-600	600	140	75	260	172	200	221	PH	1	STD	B7
	24R-650	650	140	78	260	172	200	221	PH	1	STD	B7
	24R-680	680	140	80	260	172	200	221	PH	1	STD	B7
	24R-700	700	150	85	260	172	200	221	PH	1	STD	B7
	24R-770	770	150	85	260	172	200	221	PH	1	STD	B7
GP24F	24F-600	600	135	70	271	172	200	221	PH	1	STD	B9
GP25	25-490	490	112	60	229	172	200	221	PH	2	STD	B7
	25-550	550	112	60	229	172	200	221	PH	2	STD	B7
	25-570	570	118	65	229	172	200	221	PH	2	STD	B7
	25-600	600	120	68	229	172	200	221	PH	2	STD	B7
	25-660	660	120	70	229	172	200	221	PH	2	STD	B7
GP26	26-525	525	80	50	206	172	183	204	PH	2	STD	B7
	26-580	580	80	50	206	172	183	204	PH	2	STD	B7
	26R-525	525	80	50	206	172	183	204	PH	1	STD	B7
	26R-580	580	80	50	206	172	183	204	PH	1	STD	B7
GP27	27-530	530	120	70	305	172	200	221	PH	2	STD	B7
	27-620	620	140	75	305	172	200	221	PH	2	STD	B7
	27-680	680	160	90	305	172	200	221	PH	2	STD	B7
	27-710	710	160	90	305	172	200	221	PH	2	STD	B7
	27-800	800	170	100	305	172	200	221	PH	2	STD	B7
	27-850	850	170	100	305	172	200	221	PH	2	STD	B7
	27R-530	530	120	70	305	172	200	221	PH	1	STD	B7
	27R-620	620	140	75	305	172	200	221	PH	1	STD	B7
	27R-680	680	160	90	305	172	200	221	PH	1	STD	B7
	27R-710	710	160	90	305	172	200	221	PH	1	STD	B7
	27R-750	750	160	90	305	172	200	221	PH	1	STD	B7
	27R-800	800	170	100	305	172	200	221	PH	1	STD	B7
	27R-850	850	170	100	305	172	200	221	PH	1	STD	B7
GP34	34-610	610	110	66	260	172	184	205	X	2	STD	B7
	34-700	700	115	70	260	172	184	205	X	2	STD	B7
GP35	35-490	490	112	60	229	172	200	221	PH	1	STD	B7
	35-550	550	112	60	229	172	200	221	PH	1	STD	B7
	35-570	570	118	65	229	172	200	221	PH	1	STD	B7
	35-600	600	120	68	229	172	200	221	PH	1	STD	B7
	35-660	660	120	70	229	172	200	221	PH	1	STD	B7
NS60	51-400	400	75	45	237	128	202	224	PH	2	STD	B0
	51-430	430	80	45	237	128	202	224	PH	2	STD	B0
	51-510	510	92	58	237	128	202	224	PH	2	STD	B0
	51R-400	400	75	45	237	128	202	224	PH	1	STD	B0
	51R-430	430	80	45	237	128	202	224	PH	1	STD	B0
	51R-460	460	82	52	237	128	202	224	PH	1	STD	B0
	51R-510	510	92	58	237	128	202	224	PH	1	STD	B0
GP58	58-560	560	80	48	241	183	154	175	PBH	2	STD	B8
	58R-560	560	80	48	241	183	154	175	PBH	1	STD	B8
GP65	65-850	850	160	85	302	189	171	191	PBH	2	STD	B8
GP70DT	70DT-525	525	80	50	215	178	184	205	PBH	2	DLT	B7
GP75DT	75DT-700	700	90	55	237	178	184	205	PBH	2	DLT	B7
GP75	75-700	700	90	55	237	178	184	184	PBH	2	SDE	B7
GP78DT	78DT-850	850	125	70	268	178	184	205	PBH	2	DLT	B7
GP78DT	78DT-850	850	125	70	268	178	184	205	PBH	2	DLT	B7
GP78	78-670	670	110	65	260	178	184	184	X	2	SDE	B7
	78-730	730	110	65	268	178	184	184	PBH	2	SDE	B7
	78-850	850	125	70	268	178	184	184	PBH	2	SDE	B7
GP85	85-550	550	90	55	229	172	181	202	PH	1	STD	B7
	85-780	720	100	60	229	172	181	202	PH	1	STD	B7

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GROUP SIZE	PART NO.	SPECIFICATION										
		CCA SAE	RC (min.)	C20 AH	Dimension (mm)				Handle Type	Layout	Terminal	Hold down
					L	W	H	TH				
GP86	86-550	480	80	50	206	172	197	218	PH	1	STD	B7
DIN155	95R-850	850	190	110	394	175	190	190	PH	1	STD	B3
B19	151R-320	320	58	40	186	126	202	224	PH	1	STD	B0
	151R-320R	320	58	40	186	126	202	224	PH	2	STD	B0
100G	30H-850L	850	180	100	324	172	205	225	PH	1	STD	B7
	30H-850	850	180	100	324	172	205	225	PH	2	STD	B7
	31A-750	750	160	85	330	172	218	240	PH	3	STD	B0
	31A-830	830	180	100	330	172	218	240	PH	3	STD	B0
	HC31A-900	900	180	95	330	172	218	240	PH	3	STD	B0
	31A-950	950	190	100	330	172	218	240	PH	3	STD	B0
	31A-1000	1000	190	100	330	172	218	240	PH	3	STD	B0
GP31	31T-625	625	180	100	330	172	218	240	PH	3	STUD	B0
	31T-750	750	160	85	330	172	218	240	PH	3	STUD	B0
	31T-830	830	180	100	330	172	218	240	PH	3	STUD	B0
	HC31T-900	900	180	95	330	172	218	240	PH	3	STUD	B0
	31T-950	950	190	100	330	172	218	240	PH	3	STUD	B0
	31T-1000	1000	190	100	330	172	218	240	PH	3	STUD	B0
	4D-950	950	300	150	507	213	211	231	RH	4	STD	B0
4D	4D-1050	1050	300	160	507	213	211	231	RH	4	STD	B0
	4D-1400	1400	425	200	507	213	211	231	RH	4	STD	B0
	4D-950R	950	300	150	507	213	211	231	RH	5	STD	B0
4DR	4D-1050R	1050	300	160	507	213	211	231	RH	5	STD	B0
	4D-1400R	1400	425	200	507	213	211	231	RH	5	STD	B0
	8D-1050	1050	420	190	510	275	218	238	RH	4	STD	B0
	8D-1100	1100	430	200	510	275	218	238	RH	4	STD	B0
8D	8D-1300	1300	430	200	510	275	218	238	RH	4	STD	B0
	8D-1400	1400	440	200	510	275	218	238	RH	4	STD	B0
	8D-1500	1500	440	200	510	275	218	238	RH	4	STD	B0
8DR	8D-1100R	1100	430	200	510	275	218	238	RH	5	STD	B0
	8D-1050R	1050	420	190	510	275	218	238	RH	5	STD	B0
LBN1	99R-420	420	80	45	207	175	175	175	PH	1	STD	B3
LN1	140-400	400	80	44	206	174	189	189	PH	2	STD	B3
	140-550	550	90	55	206	174	188	188	PH	2	STD	B3
	140R-400	400	80	44	206	174	188	188	PH	1	STD	B3
	140R-550	550	90	55	206	174	188	188	PH	1	STD	B3
LBN2	90-500R	500	90	54	241	174	174	174	PH	2	STD	B3
	90-410	410	75	45	241	174	174	174	PH	1	STD	B3
	90-500	500	90	54	241	174	174	174	PH	1	STD	B3
	90-540	540	100	60	241	174	174	174	PH	1	STD	B3
	90-600	600	100	60	241	174	174	174	PH	1	STD	B3
LN2	47-500R	500	90	55	242	175	190	190	PH	2	STD	B3
	47-620R	620	95	65	242	175	190	190	PH	2	STD	B3
	T47-500	500	90	55	242	175	190	190	PH	1	STD	B3
	47-525	525	90	60	242	175	190	190	PH	1	STD	B3
	47-580	580	95	62	242	175	190	190	PH	1	STD	B3
	47-620	620	95	65	242	175	190	190	PH	1	STD	B3
LBN3	91-550	550	110	65	277	174	174	174	PH	1	STD	B3
	91-600	600	120	75	277	174	174	174	PH	1	STD	B3
	91-630	630	120	75	277	174	174	174	PH	1	STD	B3
	91-730	730	120	75	277	174	174	174	PH	1	STD	B3
LN3	148-680	680	135	74	277	174	188	188	PH	2	STD	B3
	48-600	600	120	72	277	174	188	188	PH	1	STD	B3
	48-680	680	135	74	277	174	188	188	PH	1	STD	B3
	48-770	770	135	80	277	174	188	188	PH	1	STD	B3
LBN4	92-730	730	135	80	315	175	175	175	PH	1	STD	B3
	92-750	750	165	86	315	175	175	175	PH	1	STD	B3
LN4	94R-660	660	145	80	315	175	190	190	PH	1	STD	B3
	94R-920	920	160	90	315	175	190	190	PH	1	STD	B3
LBN5	93-750	750	165	90	315	175	175	175	PH	1	STD	B3
LN5	49-700	700	160	88	352	174	188	188	PH	1	STD	B3
	49-750	750	180	100	352	174	188	188	PH	1	STD	B3
	49-800	800	180	100	352	174	188	188	PH	1	STD	B3
	49-900	900	180	100	352	174	188	188	PH	1	STD	B3
GP24HC	24M-600	600	120	70	260	172	200	221	PH	2	MRN	B7
GP24M	24M-680	800	150	72	260	172	200	221	PH	2	MRN	B7

* Specifications are subject to change with or without notice.

GROUP SIZE	PART NO.	SPECIFICATION										
		CCA SAE	RC (min.)	C20 AH	Dimension (mm)				Handle Type	Layout	Terminal	Hold down
					L	W	H	TH				
GP27	27M-680	680	180	100	305	172	200	221	PH	2	MRN	B7
	27M-740	740	180	100	305	172	200	221	PH	2	MRN	B7
	27M-780	780	185	100	305	172	200	221	PH	2	MRN	B7
GP31HC	31M-780	780	180	100	330	172	208	230	RH	3	MRN	B0
	31M-950	950	180	100	330	172	208	230	RH	3	MRN	B0
	31M-1000	1000	160	90	330	172	208	230	RH	3	MRN	B0
GP24DC	DC24	540	120	70	275	172	203	225	RH	2	MRN	B7
GP24HC	DC24M-580	580	140	82	260	172	200	221	PH	2	MRN	B7
GP27	DC27	570	185	100	305	172	200	221	PH	2	MRN	B7
	27DC	630	165	97	305	172	200	221	PH	2	MRN	B7
GP31DC	DC31	650	180	100	330	172	208	230	RH	3	MRN	B0
GP31HC	DC31M-720	720	190	110	330	172	208	230	RH	3	MRN	B0
	DC31M-830	830	200	110	330	172	208	230	RH	3	MRN	B0
U1	U1-260	260	33	23	196	128	162	184	PH	2	LUG	B0
	U1R-260	260	33	23	196	128	162	184	PH	1	LUG	B0
	U1-300	300	33	24	196	128	162	184	PH	2	LUG	B0
	U1R-300	300	33	24	196	128	162	184	PH	1	LUG	B0
	U1-340	340	35	25	196	128	162	184	PH	2	LUG	B0
	U1R-340	340	35	25	196	128	162	184	PH	1	LUG	B0

* Specifications are subject to change with or without notice.

JIS TYPE

GROUP SIZE	PART NO.	SPECIFICATION										
		CCA SAE	RC (min.)	C20 AH	Dimension (mm)				Handle Type	Layout	Terminal	Hold down
					L	W	H	TH				
GP21	21R-480	480	80	50	206	172	197	218	PH	1	STD	B7
GP24	24-400	400	81	50	260	172	200	221	PH	2	STD	B7
	24-500	500	100	60	260	172	200	221	PH	2	STD	B7
	75D26R	500	110	65	260	172	200	221	PH	2	STD	B7
	80D26R	600	110	68	260	172	200	221	PH	2	STD	B7
	24-600	600	140	75	260	172	200	221	PH	2	STD	B7
	24-680	680	140	80	260	172	200	221	PH	2	STD	B7
	24-700	700	150	85	260	172	200	221	PH	2	STD	B7
	24-770	770	150	85	260	172	200	221	PH	2	STD	B7
	24R-400	400	81	50	260	172	200	221	PH	1	STD	B7
	24R-500	500	100	60	260	172	200	221	PH	1	STD	B7
	75D26L	500	110	65	260	172	200	221	PH	1	STD	B7
	80D26L	600	110	68	260	172	200	221	PH	1	STD	B7
	24R-600	600	140	75	260	172	200	221	PH	1	STD	B7
	24R-680	680	140	80	260	172	200	221	PH	1	STD	B7
	24R-700	700	150	85	260	172	200	221	PH	1	STD	B7
	24R-770	770	150	85	260	172	200	221	PH	1	STD	B7
GP25	25-490	490	112	60	229	172	200	221	PH	2	STD	B7
	25-550	550	112	60	229	172	200	221	PH	2	STD	B7
	25-570	570	118	65	229	172	200	221	PH	2	STD	B7
	25-600	600	120	68	229	172	200	221	PH	2	STD	B7
	25-660	660	120	70	229	172	200	221	PH	2	STD	B7
GP27	27-530	530	120	70	305	172	200	221	PH	2	STD	B7
	27-620	620	140	75	305	172	200	221	PH	2	STD	B7
	27-680	680	160	90	305	172	200	221	PH	2	STD	B7
	27-710	710	160	90	305	172	200	221	PH	2	STD	B7
	27-800	800	170	100	305	172	200	221	PH	2	STD	B7
	27-850	850	170	100	305	172	200	221	PH	2	STD	B7
	27R-530	530	120	70	305	172	200	221	PH	1	STD	B7
	27R-620	620	140	75	305	172	200	221	PH	1	STD	B7
	27R-680	680	160	90	305	172	200	221	PH	1	STD	B7
	27R-710	710	160	90	305	172	200	221	PH	1	STD	B7
	27R-750	750	160	90	305	172	200	221	PH	1	STD	B7
	27R-800	800	170	100	305	172	200	221	PH	1	STD	B7
GP35	35-490	490	112	60	229	172	200	221	PH	1	STD	B7
	35-550	550	112	60	229	172	200	221	PH	1	STD	B7
	35-570	570	118	65	229	172	200	221	PH	1	STD	B7
	35-600	600	120	68	229	172	200	221	PH	1	STD	B7
	35-660	660	120	70	229	172	200	221	PH	1	STD	B7

* Specifications are subject to change with or without notice.

GROUP SIZE	PART NO.	SPECIFICATION										
		CCA SAE	RC (min.)	C20 AH	Dimension (mm)				Handle Type	Layout	Terminal	Hold down
					L	W	H	TH				
NS60	51-400	400	75	45	237	128	202	224	PH	2	STD	B0
	51-430	430	80	45	237	128	202	224	PH	2	STD	B0
	51-510	510	92	58	237	128	202	224	PH	2	STD	B0
	51R-400	400	75	45	237	128	202	224	PH	1	STD	B0
	51R-430	430	80	45	237	128	202	224	PH	1	STD	B0
	51R-460	460	82	52	237	128	202	224	PH	1	STD	B0
	51R-510	510	92	58	237	128	202	224	PH	1	STD	B0
B19	151R-320	320	58	40	186	126	202	224	PH	1	STD	B0
	151R-320R	320	58	40	186	126	202	224	PH	2	STD	B0
GP21	50D20L	480	80	50	206	172	197	218	PH	1	STD	B1
B19	42B19R	320	58	40	186	126	202	224	PH	2	JIS	B0
	42B19L	320	58	40	186	126	202	224	PH	1	JIS	B0
	44B19R	350	60	40	186	126	202	224	PH	2	JIS	B0
	44B19L	350	60	40	186	126	202	224	PH	1	JIS	B0
	46B19R	410	63	44	186	126	202	224	PH	2	JIS	B0
	46B19L	410	63	44	186	126	202	224	PH	1	JIS	B0
NS40	50B20R	350	55	40	196	128	202	224	PH	2	JIS	B0
	50B20L	350	55	40	196	128	202	224	PH	1	JIS	B0
NS60	46B24R	325	75	45	237	128	202	224	PH	2	JIS	B0
	46B24L	325	75	45	237	128	202	224	PH	1	JIS	B0
	55B24L	400	75	45	237	128	202	224	PH	1	JIS	B0
	60B24R	430	80	45	237	128	202	224	PH	2	JIS	B0
	60B24L	430	80	45	237	128	202	224	PH	1	JIS	B0
	HC65B24R	460	82	52	237	128	202	224	PH	2	JIS	B0
	HC65B24L	460	82	52	237	128	202	224	PH	1	JIS	B0
100B	95E41R	750	185	100	406	172	211	231	RH	2	STD	B0
	95E41L	750	185	100	406	172	211	231	RH	1	STD	B0

* Specifications are subject to change with or without notice.

DIN TYPE

GROUP SIZE	PART NO.	SPECIFICATION										
		CCA SAE	RC (min.)	C20 AH	Dimension (mm)				Handle Type	Layout	Terminal	Hold down
					L	W	H	TH				
GP24F	24F-600	600	135	70	271	172	200	221	PH	1	STD	B9
DIN155	95R-850	850	190	110	394	175	190	190	PH	1	STD	B3
LBN1	99R-420	420	80	45	207	175	175	175	PH	1	STD	B3
LN1	140-400	400	80	44	206	174	189	189	PH	2	STD	B3
	140R-400	400	80	44	206	174	188	188	PH	1	STD	B3
	140R-550	550	90	55	206	174	188	188	PH	1	STD	B3
LBN2	90-500R	500	90	54	241	174	174	174	PH	2	STD	B3
	90-410	410	75	45	241	174	174	174	PH	1	STD	B3
	90-500	500	90	54	241	174	174	174	PH	1	STD	B3
	90-540	540	100	60	241	174	174	174	PH	1	STD	B3
LN2	47-500R	500	90	55	242	175	190	190	PH	2	STD	B3
	47-620R	620	95	65	242	175	190	190	PH	2	STD	B3
	47-525	525	90	60	242	175	190	190	PH	1	STD	B3
	47-580	580	95	62	242	175	190	190	PH	1	STD	B3
	47-620	620	95	65	242	175	190	190	PH	1	STD	B3
LBN3	91-550	550	110	65	277	174	174	174	PH	1	STD	B3
	91-600	600	120	75	277	174	174	174	PH	1	STD	B3
LBN4	92-730	730	135	80	315	175	175	175	PH	1	STD	B3
	92-750	750	165	86	315	175	175	175	PH	1	STD	B3
LN4	94R-920	920	160	90	315	175	190	190	PH	1	STD	B3
LBN5	93-750	750	165	90	315	175	175	175	PH	1	STD	B3
LN5	49-700	700	160	88	352	174	188	188	PH	1	STD	B3
	49-750	750	180	100	352	174	188	188	PH	1	STD	B3
	49-800	800	180	100	352	174	188	188	PH	1	STD	B3
	49-900	900	180	100	352	174	188	188	PH	1	STD	B3
B	67018	1050	300	170	512	222	213	194	RH	5	STD	B0
	68032	1050	320	180	512	222	213	194	RH	5	STD	B0
C	72018	1200	470	220	517	274	234	215	RH	5	STD	B0
	73011	1200	490	230	517	274	234	215	RH	5	STD	B0

* Specifications are subject to change with or without notice.

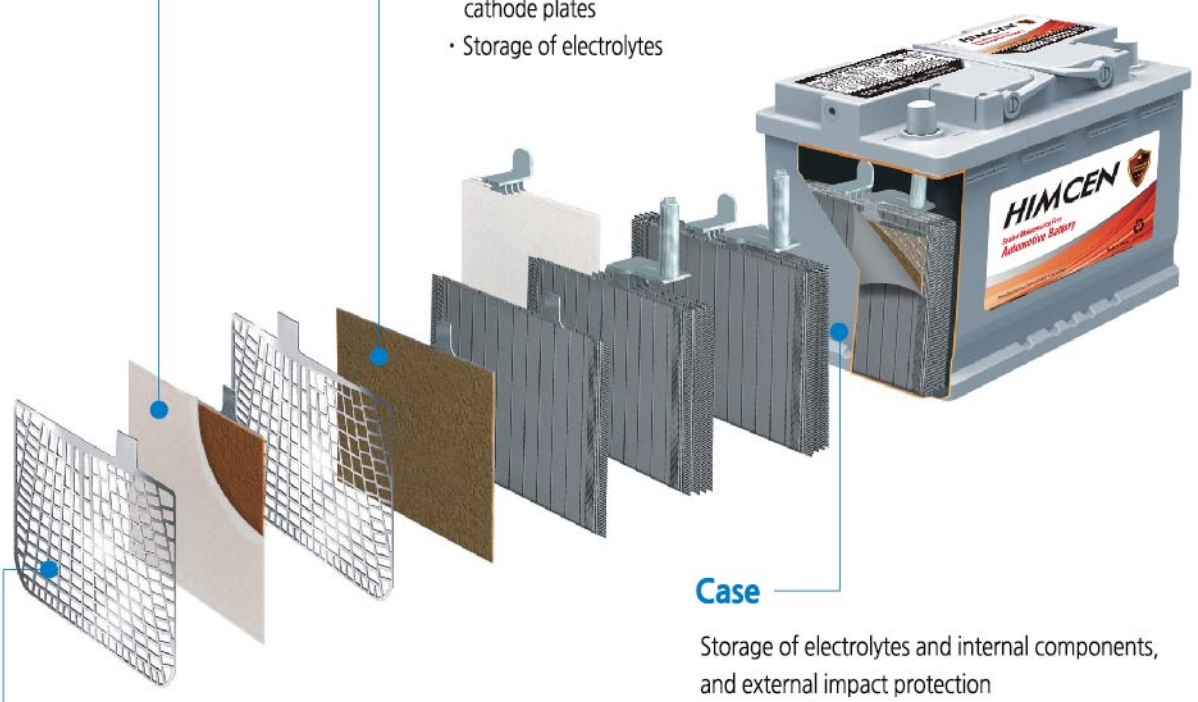
Enhanced Flooded Battery

Plate

- Electrical energy storage and output through electrochemical reactions
- Active materials containing special additives realize high battery performance

Separator

- Strong durability for prevention of short circuits between anode and cathode plates
- Storage of electrolytes



Case

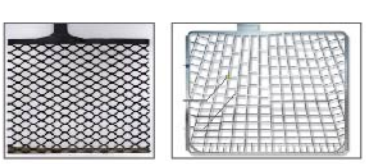
Storage of electrolytes and internal components, and external impact protection

- **Cover**
  - **Terminal**
    Connection of electrical current to vehicle electrical components
  - **Flame arrestor**
    Prevention of explosions caused by external flames entering the battery
  - **Handle**
    Increase battery mobility

Leading-Edge Punched Grid

Made by rolling with stripe, stamped into the grid shape

- Provide a longer lifespan
- High resistance to corrosion
- High conductivity



Expanded grid | Stamped(Punched) grid

* Specifications are subject to change with or without notice.

VARIATION of general SLI Battery?

The additive is applied to the anode active material to improve charging acceptance to meet vehicle usage conditions such as Stop & Start

The grid is thicker than general SLI, and the cycle life is improved by using a relatively high cathode active material

BENEFITS of EFB

- Exceptional performance supports the cycling of moderate loads in mid-to-small engine-size vehicles equipped with start-stop or alternator management
- Best-in-class charge acceptance to provide reliable recharging after the engine is off
- Enables up to 5% carbon emission reduction in mid-range vehicles equipped with a start-stop function
- Reliably supports start-stop function and recovery from discharge events
- Enables drivers to achieve and maintain tangible fuel efficiency
- Good life in start-stop applications and higher temperature applications

EFB BLACK TYPE

GROUP SIZE	PART NO.	SPECIFICATION										
		CCA SAE	RC (min.)	C20 AH	Dimension (mm)				Handle Type	Layout	Terminal	Hold down
					L	W	H	TH				
PLN2	EFB 47-560	560	100	60	242	175	190	190	PH	1	STD	B3
PLN3	EFB 48-720	720	120	70	277	174	188	188	PH	1	STD	B3
B19	EFB 151R-380R	380	63	38	186	126	202	224	PH	2	JIS	B0
	EFB 151R-380	380	63	38	186	126	202	224	PH	1	JIS	B0
NS40	EFB M42L	400	63	40	196	128	202	224	PH	2	JIS	B0
	EFB M42	400	63	40	196	128	202	224	PH	1	JIS	B0
NS60	EFB 51-500	500	92	55	237	128	202	224	PH	2	JIS	B0
	EFB 51R-500	500	92	55	237	128	202	224	PH	1	JIS	B0
GP24	EFB 24-720	720	150	80	260	172	200	221	PH	2	STD	B7
	EFB 24R-720	720	150	80	260	172	200	221	PH	1	STD	B7
GP25	EFB 25-620	620	115	65	229	172	200	221	PH	2	STD	B7
GP27	EFB 27-820	820	170	90	305	172	200	221	PH	2	STD	B7
	EFB 27R-820	820	170	90	305	172	200	221	PH	1	STD	B7
GP35	EFB 35-620	620	115	65	229	172	200	221	PH	1	STD	B7

* Specifications are subject to change with or without notice.

EFB GREY TYPE

GROUP SIZE	PART NO.	SPECIFICATION										
		CCA SAE	RC (min.)	C20 AH	Dimension (mm)				Handle Type	Layout	Terminal	Hold down
					L	W	H	TH				
20D	EFB M42 60B20L	400	63	40	196	128	202	227	PH	1	JIS	B0
B24 (NS60)	EFB 51R-500	500	92	55	237	128	202	224	PH	1	JIS	B0
D23 (GP35)	EFB 35-660	660	125	70	229	172	200	225	PH	1	STD	B7
	EFB 25-660	660	125	70	229	172	200	225	PH	2	STD	B7
D26 (GP24)	EFB 24R-720	720	150	80	260	172	200	221	PH	1	STD	B7
	EFB 24-720	720	150	80	260	172	200	221	PH	2	STD	B7
D31 (GP27)	EFB 27R-820	820	170	90	305	172	200	221	PH	1	STD	B7
	EFB 27-820	820	170	90	305	172	200	221	PH	2	STD	B7
LN2	EFB 47-560	560	100	60	242	175	190	190	PH	1	STD	B3
LN3	EFB 48-720	720	120	70	277	174	188	188	PH	1	STD	B3

* Specifications are subject to change with or without notice.

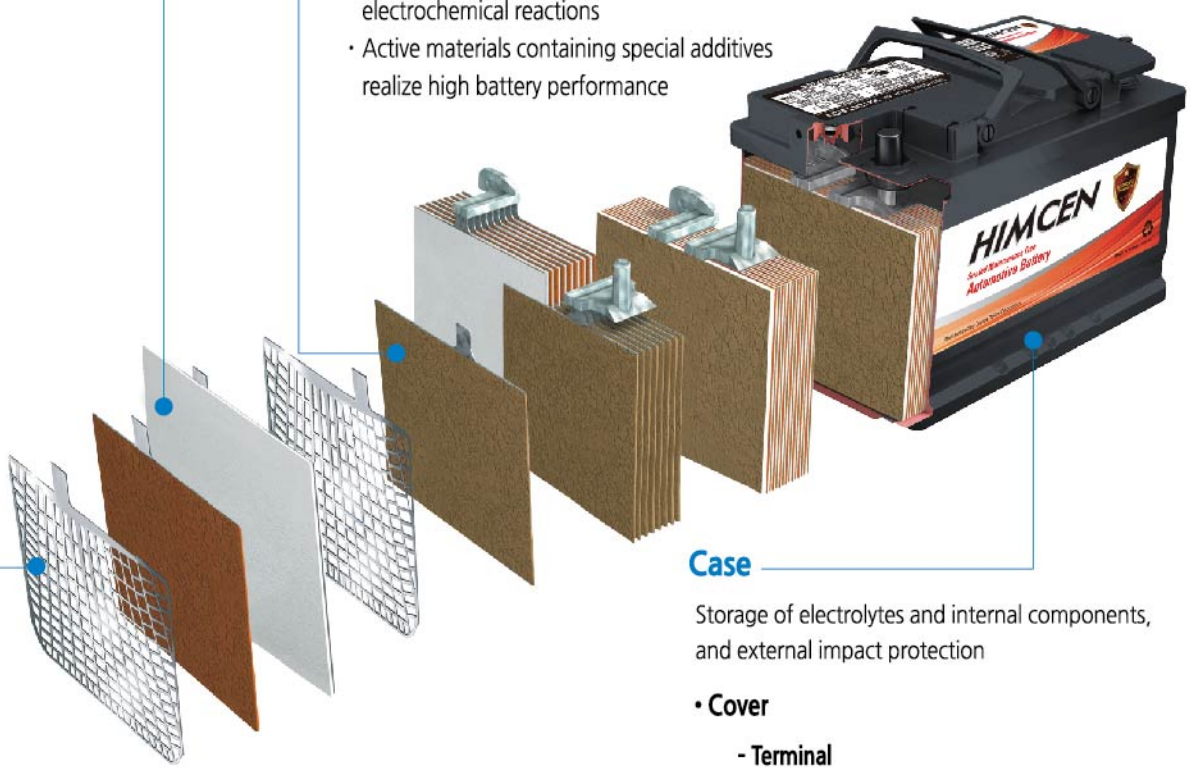
Absorbed Glass Mat

Glass Mat Separator

- Optimized materials for AGM Separator (Coarse fiber + Fine fiber)
- Sufficient absorption of electrolytes in use
- High holding ability of active materials
- Reduces the stratification of electrolytes

Plate

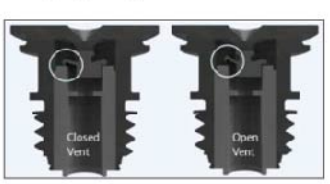
- Electrical energy storage and output through electrochemical reactions
- Active materials containing special additives realize high battery performance

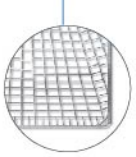


Case

Storage of electrolytes and internal components, and external impact protection

- **Cover**
  - **Terminal**
    Connection of electrical current to vehicle electrical components
  - **Flame arrestor**
    Prevention of explosions caused by external flames entering the battery
  - **Handle**
    Increase battery mobility
- **AGM Valve**
  Exclusively designed to resist breakdown in varying temperatures





Leading-Edge Punched Grid

Made by rolling metal with stripe, stamped into the grid shape

- Provide a longer lifespan
- High resistance to corrosion
- High conductivity

Expanded grid | Stamped(Punched) grid

* Specifications are subject to change with or without notice.

BENEFITS of AGM

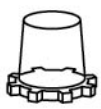
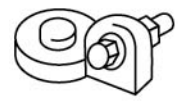
- Highest reliability and durability for all start-stop and alternator management applications
- Enables up to 5% carbon emission reduction in vehicles equipped with start-stop function, including energy recuperation and passive boost
- Delivers fuel economy by providing stable performance for start-stop applications in long term
- Supports traditional internal combustion engine application with high cycling demands or flexible installation requirements
- Up to twice the cycle-life of a standard flooded battery
- Excellent starting power at a low state of charge and in a cold environment
- Robust design withstands high-temperatures, enabling durability for car installation
- Enables improved and more reliable battery diagnostics, preventing sudden failure
- Safest lead-acid battery in the event of a crash

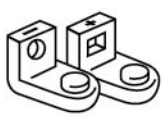
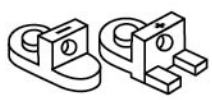
AGM TYPE

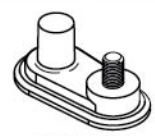
GROUP SIZE	PART NO.	SPECIFICATION										
		CCA SAE	RC (min.)	C20 AH	Dimension (mm)				Handle Type	Layout	Terminal	Hold down
					L	W	H	TH				
B20	AGMB20(S34B20R)	340	57	35	195	126	200	224	PH	2	JIS	B0
B24	AGMB24(S46B24R)	370	75	45	236	126	200	224	PH	2	JIS	B0
LN1	AGMLN1/H4 (AGM140R)	520	80	50	206	174	189	189	X	1	STD	B3
LN2	AGMLN2/H5 (AGM47)	640	100	60	241	174	189	189	PH	1	STD	B3
LN3	AGMLN3/H6 (AGM48)	760	120	70	277	174	189	189	PH	1	STD	B3
LN4	AGMLN4/H7 (AGM94R)	800	140	80	314	174	189	189	PH	1	STD	B3
LN5	AGMLN5/H8 (AGM49)	900	160	95	352	174	189	189	PH	1	STD	B3

* Specifications are subject to change with or without notice.

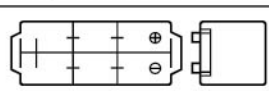
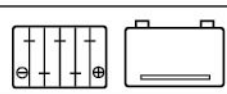
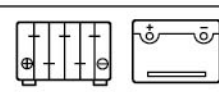
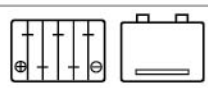
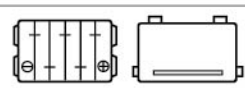
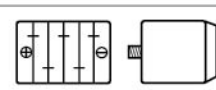
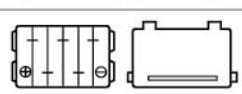
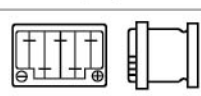
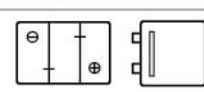
Terminal

A	B	C
 Standard	 Small	 Type BN

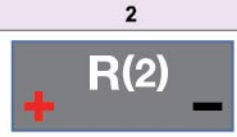
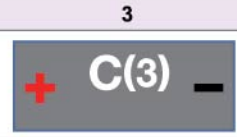
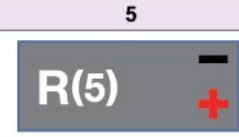
D	E	F	G
 Type X	 Ford Type	 Type V(Marine)	 Type T(Stud)

H	I	J	K
 Side Type	 Type L	 Dual Fit Type	 Marine Twin

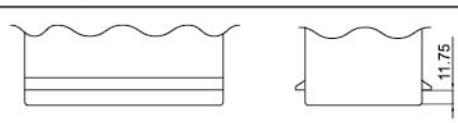
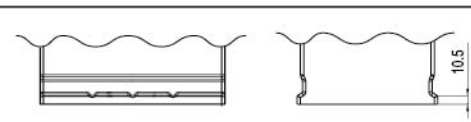
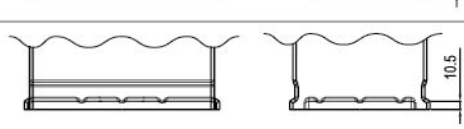
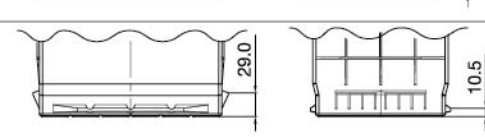
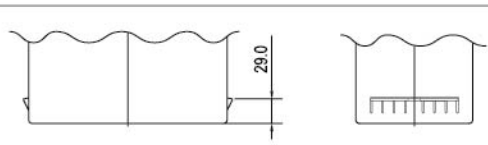
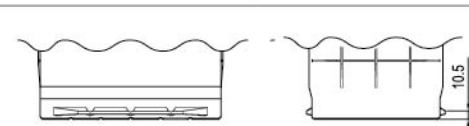
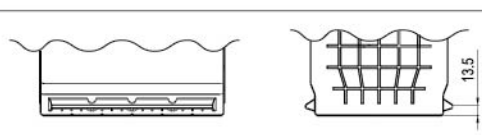
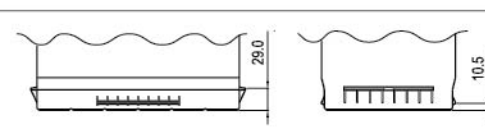
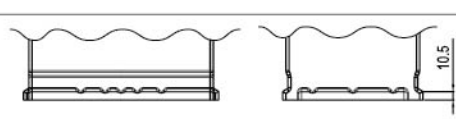
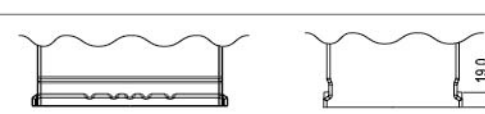
BCI Assembly Numbers, Cell Lay-out

FIG.8		FIG.11		FIG.17	
FIG.10		FIG.11F		FIG.18	
FIG.10F		FIG.15		FIG.19	

Cell Lay-out

1	2	3	4	5
				

Base Hold-Down

W1		B1	
B3		B5	
B6		B7	
B8		B9	
B13		B14	

* Notice : The Specifications are subject to changes with or without notice

PRECAUTIONS

Danger of exploding batteries

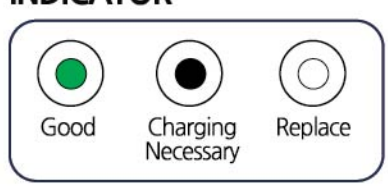
Batteries contain sulphuric acid and produce explosive mixtures of hydrogen and oxygen. Because self-discharge action generates hydrogen gas even when the battery is not in operation, make sure batteries are stored and worked on in a well-ventilated area.

- Always wear ANSI Z87.1 (U.S.) or CE EN166 (Europe) approved safety glasses and face shield or splash-proof goggles when working on or near batteries.
- Always wear proper eye, face and hand protection.
- Keep all sparks, flames and cigarettes away from the battery.
- Never try to open a battery with non-removable vents. (See Fig. 1 for the acceptable wording and symbols currently used on vent caps.)
- Keep removable vents tight and level except when servicing electrolyte.
- Make sure working area is well-ventilated.
- Never lean over the battery while boosting, testing or charging.
- Exercise caution when working with metallic tools or conductors to prevent short circuits and sparks.

Safe Charging

NEVER ATTEMPT TO CHARGE A BATTERY WITHOUT FIRST REVIEWING THE INSTRUCTIONS FOR THE CHARGER BEING USED.
In addition to the charger manufacturer's instructions, these general precautions should be followed for safe charging:

INDICATOR



- Always wear proper eye, face and hand protection.
- Always charge batteries in a well-ventilated area.
- Keep vents tight and level.
- Turn the charger and timer "OFF" before connecting the leads to the battery to avoid dangerous sparks.
- Never try to charge a visibly damaged or frozen battery.
- Connect the charger leads to the battery; red positive (+) lead to the positive (+) terminal and black negative (-) lead to the negative (-) terminal. If the battery is still in the vehicle, connect the negative lead to the engine block to serve as a ground. Be sure the ignition and all electrical accessories are turned off. (If the vehicle has a positive ground, connect the positive lead to the engine block.)
- Make sure that the charger leads to the battery are not broken, frayed or loose.
- Set the timer, turn the charger on and slowly increase the charging rate until the desired ampere value is reached.
- If the battery becomes hot, or if violent gassing or spewing of electrolytes occurs, reduce the charging rate or turn off the charger temporarily.
- Always turn the charger "OFF" before removing charger leads from the battery to avoid dangerous sparks.

Handling battery acid

Battery acid, or electrolyte, is a solution of sulphuric acid and water that can destroy clothing and burn the skin. USE EXTREME CAUTION WHEN HANDLING BATTERY ACID and keep an acid-neutralizing solution — such as baking soda or household ammonia mixed with water — readily available. When handling batteries:

- Always wear proper eye, face and hand protection.
- If the electrolyte is splashed into an eye, immediately force the eye open and flood it with clean, cool water for at least 15 minutes. Get prompt medical attention.
- If electrolyte is taken internally, drink large quantities of water or milk. DO NOT induce vomiting. Get prompt medical attention.
- Neutralize with baking soda any electrolyte that spills on a vehicle or in the work area. After neutralizing, rinse the contaminated area clean with water. To prepare electrolytes of a specific gravity, always pour the concentrated acid slowly into the water; DO NOT pour water into the acid. Always stir the water while adding small amounts of acid. If noticeable heat develops, allow the solution to cool before continuing to add acid.

HIMCEN

Innovative Total Energy Solution Provider

RM809-810, 70, Gukjegeumyung-ro, Yeongdeungpo-gu, Seoul, Republic of Korea 07333

USA | Tel : +1-650-492-2611 / +1-408-314-9733

KOREA | Tel : +82-2-784-7651 Fax : +82-2-784-7655

E-mail | info@HIMCENenergy.com

Website | www.HIMCENenergy.com