

# 6 & 12 VOLT MONOBLOC GEL RANGE



**HAZE**

Haze Battery Company Ltd

The Haze HZY - GEL range covers Ah capacities from 7Ah to 230Ah (C<sub>10</sub>) with dimensions suitable for racking systems for maximum space utilisation. Specially designed racks and cabinets are available with cables and connectors to suit. GEL is especially suited for non-premium sites with medium to frequent outage rates and non-climate controlled environments, for less extreme temperature variations and reduced cyclic demands please consult the Haze HZB - AGM range. Haze facilities are fully accredited to ISO 14001 and the management system fully accredited to ISO 9001.



**Innovative Features**

Designed to meet the needs of UPS and other applications where power outages are frequent and a cyclic UPS battery is required.

- Completely maintenance free, sealed
- Construction eliminates the need for watering
- Electrolyte will not stratify.
- Increased durability and deep cycle ability for heavy demand applications
- Special formation process
- Gelled thixotropic electrolyte
- Spill proof / leak proof
- Valve regulated Max internal pressure 2.5 psi
- Multi-position usage
- Multi-cell container
- ABS Case and cover - V0 on request
- Low self discharge
- Utilising the latest in European technology
- FAA and IATA approved as non-hazardous

**Specifications**

Nominal Voltage	6 & 12 Volts
Design Life	12 Years
Operating Temperature	-20 °C to 50 °C
Grid alloy	Calcium / Tin lead alloy
Plates	Flat Pasted
Separator	Microporous Duroplastic
Active material	Very high purity lead
Case and cover	ABS (VO on request)
Charge Voltage	Float 2.27 - 2.30 VPC @20 °C Cycling 2.4 @20 °C Max. 2.4 VPC Max ripple 3.5% Charge V
Electrolyte	Sulphuric acid Analytical grade purity
Venting Valve	EPDM Rubber 1.5 to 2 psi (10.5 - 14 KPa) release pressure. Resealing at 1 psi (7 KPa)
Terminal	Various types Epoxy sealed by extended mechanical paths
Torque setting	The recommended torque value for all types is 5-7 Nm
Cables	Insulated cables / connectors supplied on request.

Haze Battery Company keenly encourages environmental awareness; PLEASE follow guidelines for the recycling /disposal of lead.



## Gel Vs AGM

Each battery has its advantages and disadvantages, it is therefore important to choose the right battery for the application. Advantages of Gel Batteries:

- Full recovery from deep discharge, even when the battery is not recharged immediately.
- Ideal for repeat cycling daily use.
- Excellent performance over long discharges
- Good tolerance to higher temperature applications
- Suitable where mains power is unstable
- Zero stratification due to immobilized electrolyte
- Reduced self-discharge
- Limiting design protects the positive plates to greatly improve cycle life
- Improved charge acceptance due to low internal resistance
- High resistance to water loss with the right charging set up
- Ultra stable polymer separator with glass mat for increased performance
- High resistance to shorting due to superior mechanical strength of the polymer separator
- Increased tolerance to poor charging parameters
- Can be discharged even when full recharge has not been achieved, without loss of battery capacity

### Disadvantages

- Reduced high rate autonomy
- Requires cycling to achieve full capacity

### Terminal Options (left to right)

- ▶ Lead Flag
- ▶ Automotive
- ▶ J Type
- ▶ Copper Flag
- ▶ J Type Adapter
- ▶ Insert

Insert are made from brass with copper, nickel and silver plating giving excellent mechanical, electrical and corrosion resistant properties.

### Capacity temperature correction Factor to be applied to Data at 20 Degrees C

Discharge Time	-30 °C	-20 °C	-10 °C	0 °C	5 °C	10 °C	15 °C	20 °C	25 °C	30 °C	35 °C	40 °C	50 °C
5 minutes to 59 minutes	0.23	0.417	0.605	0.778	0.86	0.91	0.96	1	1.037	1.063	1.085	1.1	1.116
1 Hour to 100 Hours	0.277	0.464	0.647	0.816	0.886	0.93	0.97	1	1.028	1.05	1.063	1.07	1.078

## Applications

- Float service
  - Residential
  - Telecommunications
  - Refrigeration
  - Poor charging applications
  - Frequent use applications
  - Wind
  - Higher ambient temperature applications
  - Water Pumping
  - Road side cabinets
  - Cathodic Protection
- Many other extreme applications

## CHARGING CHARACTERISTICS

**Floating** - The optimum float voltage for a battery is temperature dependant, at 15 - 24°C the recommended value is 2.27 - 2.30V. It is recommended that battery installation sites are temperature controlled, however float voltage can be increased or decreased to compensate for temperature variations. Adjustment is calculated at +/- 3 mV per degree C.

Operating Temperature	Recommended Applied Float Voltage VPC
0-9	2.33 - 2.35
10-14	2.30 - 2.33
15-19	2.27 - 2.30
20-24	2.27 - 2.30
25-29	2.25 - 2.27
30-34	2.23 - 2.25
35-40	2.21 - 2.23

The most suitable charging method for battery life and performance is the constant voltage method with a limited initial current, usually limited to a maximum of  $C_{20}/4$ . For cyclic use we specify a short constant current phase at the end of normal charging, consult Haze for further details.





End of Discharge Voltage = 1.60										DISCHARGE CURRENT in A								20 - 25 °C			
Model	5'	10'	15'	20'	25'	30'	35'	40'	45'	1 hr	90'	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	10 hr	12 hr	20 hr
HZY6-7.5	19.1	13.3	10.7	9.03	7.82	7.06	6.48	6.02	5.66	4.81	3.43	2.72	1.95	1.54	-	-	-	-	-	-	-
HZY6-10	27.2	19.1	15.4	13.1	11.4	10.1	9.14	8.51	7.93	6.48	4.68	3.74	2.65	2.07	-	-	-	-	-	-	-
HZY6-12	33	23.1	18.5	15.6	13.6	12	10.9	10.1	9.34	7.71	5.54	4.35	3.14	2.47	-	-	-	-	-	-	-
HZY12-7.5	19.1	13.3	10.7	9.03	7.82	7.06	6.48	6.02	5.66	4.81	3.43	2.72	1.95	1.54	-	-	-	-	-	-	-
HZY12-12	33.0	23.1	18.5	15.6	13.6	12.0	10.9	10.1	9.34	7.71	5.54	4.35	3.14	2.47	-	-	-	-	-	-	-
HZY12-18	51.0	35.0	28.1	23.6	20.6	18.5	16.7	15.4	14.2	11.5	8.20	6.48	4.59	3.60	-	-	-	-	-	-	-
HZY12-26	74.1	53.4	42.9	36.0	31.2	27.6	24.7	22.4	20.6	16.6	12.0	9.63	6.97	5.49	-	-	-	-	-	-	-
HZY12-33	106	71.4	56.2	46.6	40.1	35.1	31.5	28.4	26.0	20.9	15.2	12.1	8.75	6.98	-	-	-	-	-	-	-
HZY12-44	124	96.7	76.3	62.8	54.0	47.4	42.4	38.2	35.0	28.0	20.4	16.2	11.7	9.16	-	-	-	-	-	-	-
HZY12-55	161	116	93.5	79.3	68.9	61.2	55.1	50.0	46.3	37.5	27.1	21.5	15.5	12.2	-	-	-	-	-	-	-
HZY12-60	205	152	119	97.6	82.3	71.3	62.8	56.5	51.2	40.2	29.2	23.3	17.1	13.9	-	-	-	-	-	-	-
HZY12-70J	184	141	116	98.3	85.5	75.6	68.3	62.5	57.4	46.3	33.0	25.7	18.0	14.2	-	-	-	-	-	-	-
HZY12-70	189	147	121	103	89.7	79.3	71.6	65.6	60.4	50.7	36.9	29.0	20.8	16.6	-	-	-	-	-	-	-
HZY12-80	197	153	128	110	96.7	86.8	78.8	73.2	67.4	55.4	39.9	31.4	22.3	17.5	-	-	-	-	-	-	-
HZY12-100	264	196	158	132	116	103	92.9	84.6	77.2	62.5	45.5	35.8	25.3	19.9	-	-	-	-	-	-	-
HZY12-110	287	213	175	149	130	115	104	93.6	85.8	69.4	50.5	40.4	29.0	22.9	-	-	-	-	-	-	-
HZY12-120	293	223	183	157	138	122	110	101	92.9	75.2	55.2	43.7	30.8	23.9	-	-	-	-	-	-	-
HZY12-135	346	253	217	191	172	157	143	131	121	99.0	71.7	56.9	41.2	32.8	-	-	-	-	-	-	-
HZY12-150	369	280	238	208	187	169	154	139	128	102	74.3	58.5	41.3	32.3	-	-	-	-	-	-	-
HZY12-160	388	300	263	232	205	184	167	151	139	112	83.9	67.7	49.2	39.1	-	-	-	-	-	-	-
HZY12-200	433	351	304	271	245	219	199	182	167	137	103	85.0	63.4	50.5	-	-	-	-	-	-	-
HZY12-230	446	365	317	285	259	237	219	203	189	156	115	92.2	67.5	53.3	-	-	-	-	-	-	-
HZY6-110	326	245	201	171	148	131	116	105	95.7	75.5	54.4	43.6	31.7	25.2	-	-	-	-	-	-	-
HZY6-155	380	296	245	210	186	167	152	139	129	105	78.0	62.3	44.8	35.5	-	-	-	-	-	-	-
HZY6-160	447	329	272	230	206	186	173	160	150	122	88.6	69.8	49.8	39.0	-	-	-	-	-	-	-
HZY6-200	420	338	290	254	231	212	195	179	165	132	96.5	77.1	55.5	43.8	-	-	-	-	-	-	-

**IMPORTANT NOTE:** GEL batteries do not deliver full capacity on the first cycle, in fact they take approx. 15 to 20 cycles to reach full capacity. This reduced initial capacity effect is due to the extremely durable crystal structure employed in the Haze GEL range. The capacity quoted in this catalogue is full capacity.





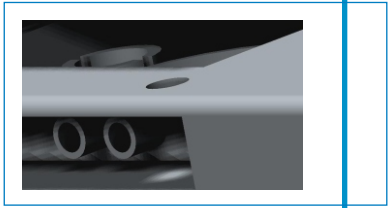


End of Discharge Voltage = 1.60					DISCHARGE IN WATTS PER CELL												20 - 25 °C				
Model	5'	10'	15'	20'	25'	30'	35'	40'	45'	1 hr	90'	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	10 hr	12 hr	20 hr
HZY6-7.5	38.4	26.3	20.4	16.8	14.4	12.8	11.5	10.5	9.63	7.89	5.88	4.7	3.34	2.63	-	-	-	-	-	-	-
HZY6-10	54.6	37.9	29.7	24.9	21.5	19.0	17.0	15.5	14.3	11.6	8.77	7.02	5.00	3.89	-	-	-	-	-	-	-
HZY6-12	66.4	43.6	35	29.3	25.3	22.5	20.3	18.6	17.2	14.0	10.5	8.42	6.03	4.74	-	-	-	-	-	-	-
HZY12-7.5	38.4	26.3	20.4	16.8	14.4	12.8	11.5	10.5	9.63	7.89	5.88	4.70	3.34	2.63	-	-	-	-	-	-	-
HZY12-12	66.4	43.6	35.0	29.3	25.3	22.5	20.3	18.6	17.2	14.0	10.5	8.42	6.03	4.74	-	-	-	-	-	-	-
HZY12-18	85.1	57.6	47.1	40.1	34.9	31.2	28.1	25.5	23.6	19.3	14.6	11.8	8.57	6.74	-	-	-	-	-	-	-
HZY12-26	130	95.6	77.0	65.0	56.5	50.1	45.2	41.3	37.9	30.5	22.2	17.9	13.2	10.6	-	-	-	-	-	-	-
HZY12-33	168	121	99	83.4	72.1	63.7	57.2	52.0	47.7	38.0	27.0	21.0	14.7	11.5	-	-	-	-	-	-	-
HZY12-44	206	158	130	109	94.4	83.3	75.2	68.1	62.6	50.2	36.0	28.1	19.5	15.1	-	-	-	-	-	-	-
HZY12-55	251	185	153	129	112	99.5	89.6	82.0	75.5	60.8	44.2	34.9	24.9	19.6	-	-	-	-	-	-	-
HZY12-60	305	228	186	157	136	120	107	97.0	88.5	71.4	53.0	42.8	32.3	26.1	-	-	-	-	-	-	-
HZY12-70J	297	226	191	164	145	130	119	109	101	81.7	58.6	45.3	31.5	24.3	-	-	-	-	-	-	-
HZY12-70	303	232	195	168	148	133	121	111	103	82.8	59.5	46.3	32.4	24.9	-	-	-	-	-	-	-
HZY12-80	318	253	213	182	162	146	134	123	115	93.9	68.1	53.1	36.9	28.7	-	-	-	-	-	-	-
HZY12-100	448	324	270	230	201	180	164	150	139	113	82.9	65.5	46.3	36.2	-	-	-	-	-	-	-
HZY12-110	489	368	304	258	226	202	182	166	153	123	90.1	71.5	50.4	39.3	-	-	-	-	-	-	-
HZY12-120	516	406	339	290	253	228	207	190	176	142	104	81.8	57.2	44.3	-	-	-	-	-	-	-
HZY12-135	541	398	343	305	276	251	233	217	203	166	121	94.8	65.6	50.5	-	-	-	-	-	-	-
HZY12-150	593	454	385	340	306	279	255	234	217	177	129	101	69.8	54.3	-	-	-	-	-	-	-
HZY12-160	581	470	409	360	328	302	279	257	240	197	144	115	80.6	63.1	-	-	-	-	-	-	-
HZY12-200	657	547	477	424	384	355	329	307	286	236	172	135	95.8	75.6	-	-	-	-	-	-	-
HZY12-230	698	584	503	451	409	376	351	328	310	260	191	151	106	83.3	-	-	-	-	-	-	-
HZY6-110	499	373	314	268	235	209	188	172	158	126	92.0	72.9	51.3	40.1	-	-	-	-	-	-	-
HZY6-155	806	566	467	405	362	327	299	274	254	213	162	133	97.0	75.3	-	-	-	-	-	-	-
HZY6-160	658	502	434	387	351	321	296	274	255	208	151	118	82.8	65.0	-	-	-	-	-	-	-
HZY6-200	670	527	451	406	369	342	318	299	279	231	167	132	95.0	75.3	-	-	-	-	-	-	-

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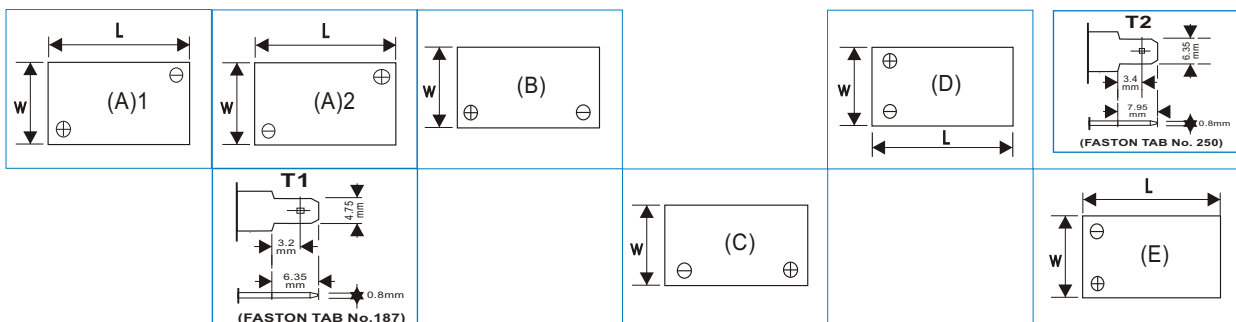
**Central Gassing** - Haze produce some models with a integral central gassing system. This system is a useful feature when batteries are installed in an IP66 cabinet. Sealing prevents any escaping gas from exiting the enclosure. Central gassing allows a tube carrying the emissions to pass through a seal to atmosphere. Haze are adding this feature to a number of sizes, if you require this feature please contact us for an up-to-date list of models included.

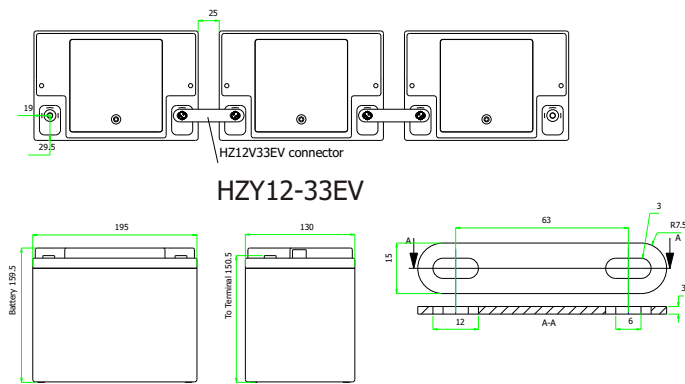


Battery Model	Qty Per Box	Dimensions (mm) & weight (Kg)				Dimensions (Inches) & weight (Lbs)				Terminal Details	BCI Group Size	Internal Resistance mOhms	Maximum Charge Current	CCA at 0 °C	Short Circuit Amps
		Length	Width	Height	Weight	Length	Width	Height	Weight						
HZY6-7.5	10	150	34	94 (100)	1.2	5.91	1.34	3.7 (3.9)	2.7	B-T1	-	18	1.5	NA	275
HZY6-10	10	151	50	96 (102)	1.9	5.94	1.97	3.8 (4.0)	4.2	B-T1	-	15	2	NA	325
HZY6-12	10	151	50	96 (104)	1.8	5.94	1.97	3.8(4.1)	4.0	B-T2	-	13	2.4	NA	500
HZY12-7.5	8	151	65	94 (102)	2.4	5.94	2.56	3.7 (4.0)	5.3	D-T1	-	40	1.5	NA	275
HZY12-12	4	150	97	96 (104)	3.7	5.91	3.82	3.8(4.1)	8.2	D-T2	-	24	2.4	NA	500
HZY12-18	2	181	76	167	5.5	7.13	2.99	6.57	12.2	C - M5	-	16	4.5	137	700
HZY12-26	1	178	168	124	8.8	7.01	6.61	4.88	19.4	C - M5	-	9.5	6.5	217	900
HZY12-33	1	195	130	160	10.2	7.68	5.12	6.30	22.5	B - M6	U1	10.6	8	260	1100
HZY12-44	1	198	167	157	13.5	7.80	6.57	6.18	29.8	C - M6	-	8	11	337	1400
HZY12-55	1	229	138	213	16.8	9.02	5.43	8.39	37.1	B - M6	22NF	7	14	444	1700
HZY12-60	1	228	139	217	21.5	8.98	5.47	8.54	47.5	B - M6	-	6.5	14	563	1750
HZY12-70J	1	349	168	175	22.6	13.74	6.61	6.89	49.9	C - M6	-	5.3	18	530	2100
HZY12-70	1	260	168	211	25.1	10.24	6.61	8.31	55.5	B - M6	24	5.2	18	535	2100
HZY12-80	1	260	168	211	24.0	10.24	6.61	8.31	53.0	B - M6	24	5.7	20	600	2400
HZY12-100	1	306	168	211	28.3	12.05	6.61	8.31	62.5	B - M6	27	4.7	25	715	2900
HZY12-110	1	329	173	209	30.9	12.95	6.81	8.23	68.3	B - M6	31	4.4	27	766	3000
HZY12-115	1	349	174	216.5	37.0	13.74	6.85	8.52	81.8	B - M6	-	3.4	28	980	3100
HZY12-120	1	408	176	227	34.5	16.06	6.93	8.94	76.2	B - M6	-	3.7	30	835	3300
HZY12-135	1	340	173	283	41.9	13.39	6.81	11.14	92.6	B - M6	-	4	35	906	3750
HZY12-150	1	482	170	242	45.0	18.98	6.69	9.53	99.5	B - M6	-	3.3	38	919	4200
HZY12-160	1	530	209	214	54.9	20.87	8.23	8.43	121.3	E - M6	4D	3.1	40	938	4700
HZY12-200	1	520	240	220	63.3	20.47	9.45	8.66	139.9	E - M8	-	2.88	50	988	5400
HZY12-230	1	521	269	203	74.5	20.51	10.59	7.99	164.6	E - M8	8D	2.3	57	1007	5900
HZY6-110	1	193	168	205	17.9	7.60	6.61	8.07	39.6	A - M6	-	1.8	27	789	3200
HZY6-155	1	282	177	280	31.0	11.10	6.97	11.02	68.5	A - M8	-	1.7	45	955	4900
HZY6-160	1	298	171	226	26.9	11.73	6.73	8.90	59.4	A - M6	-	1.7	40	966	4600
HZY6-200	1	323	178	225	31.1	12.72	7.01	8.86	68.7	A - M8	-	1.4	50	978	5000

Standard terminal is threaded insert style

**Terminal Layout details**





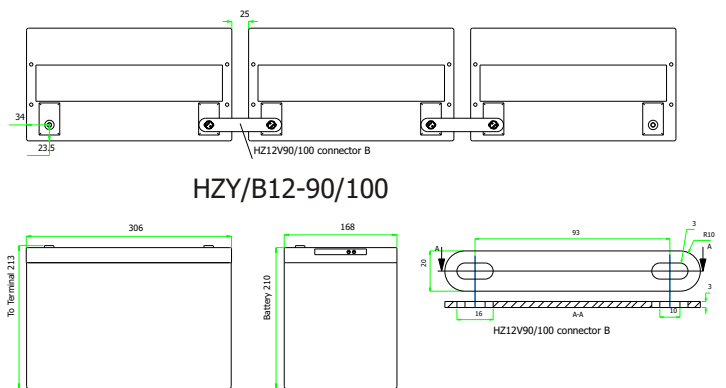
HZY12-33EV

Battery installations have many variables : space available, autonomy times, load carrying requirements etc.

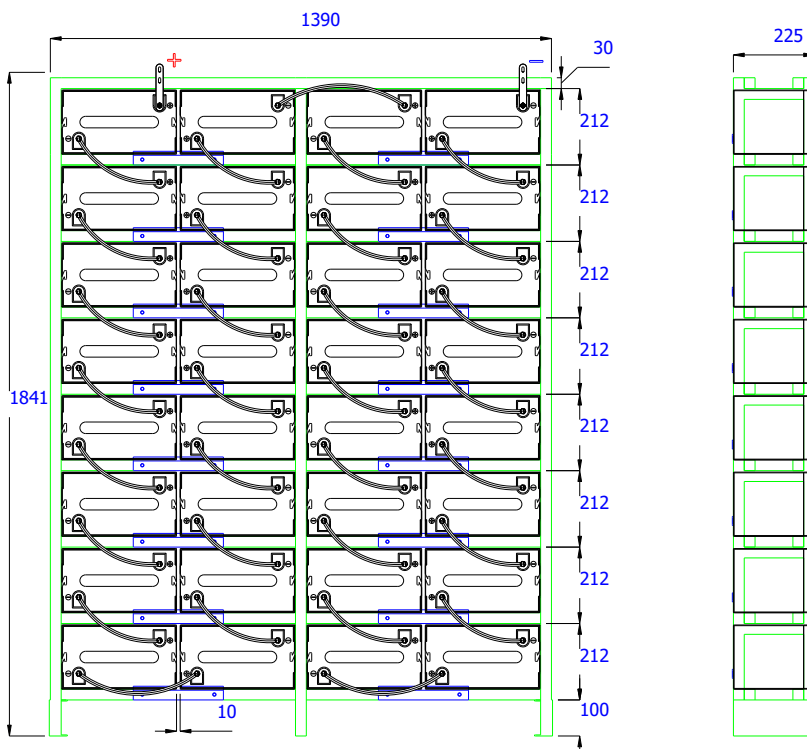
Haze Engineering department is at the customers disposal to find the best solution, provide dimensioned layout drawings and wiring diagrams.

A tailor made solution to meet the customers requirements.

All drawings are submitted for customer approval to ensure trouble free installation.



HZY/B12-90/100



Racking is available to suit available space and required configuration.

Special cables and / or standard connectors can be provided on request along with wiring diagrams.

A range of terminal covers are available to cover large and small batteries and cables or connectors.

The example rack shown is for HZB/Y6-200.



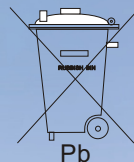
## Haze Battery Company Ltd

### Product Range

4, 6 & 12 Volt AGM 1.3 to 230AH  
6 & 12 Volt Gel 7.5 to 230AH  
12 Volt Front Access AGM  
12 Volt Front Access Gel  
2 Volt AGM & Gel 50 to 3850AH  
EV Gel  
EV AGM  
Marine Gel  
Solar  
OPzV  
OPzS

Website: [www.hazebattery.com](http://www.hazebattery.com)  
E mail [sales@hazebattery.com](mailto:sales@hazebattery.com)

160514



Haze Battery Company keenly encourages environmental awareness; PLEASE follow guidelines for the recycling /disposal of lead.