

# Solar Energy Centre

## SEC High Quality Batteries for Deep Cycle Solar Applications



### Introduction to SEC Batteries

With more than 30 years experience in the manufacture and sale of high quality batteries for a huge variety of industrial applications, today SEC also offers a wide range of products that are highly suited to Solar energy systems.

Engineered to last in even the most demanding applications, SEC Catalyst equipped VRLA batteries are the perfect choice for all Solar applications, from small, standalone installations to large scale back-up/storage facilities.

Catalyst  
Inside



**CELLYTE 2CMTG / 2TLGM**  
Cutaway View

**CELLYTE 2CMTG/2TLGM 2 volt cells/batteries Gel Technology with Catalyst**

Sealed Valve Regulated Maintenance Free Lead Acid Batteries with Catalyst. Free standing cells can be used individually in a vertical position or horizontally in conventional/ Zone 4 rated Seismic Modular racks.

Fully complies with BS 6094 - Part 4 with flame retardant V-0 case  
IEC 60896-21/22 - 2004

CAPACITIES: 100Ah to 3000Ah at C/10 to 1.80 Vpc at 20°C. 1200 Cycles  
DESIGN LIFE: 20 years for 2CMTG down to 15 years for 2TLGM

Catalyst  
Inside



**CELLYTE 12FTA/G Range**

**CELLYTE 12FTA/G Bloc sealed Lead Acid VRLA 12 Volt Monobloc battery**

The first battery in the world to be fitted with a VRLA Monobloc Catalyst, FTA/G Bloc advanced AGM/Gel absorbed electrolyte technology ensures reliable performance, safety, outstanding battery life and excellent value.

Fully complies with BS 6290 - Part 4 with flame retardant V-0 case  
IEC 60896-21/22-2004  
Terminals are located at the front of the battery

CAPACITIES: 40Ah to 175Ah at C/10 to 1.75 Vpc  
DESIGN LIFE: 12 years fitted with Catalyst in float service at 20°C

Catalyst  
Inside



**CELLYTE 6-12TSG Range**

**CELLYTE 6-12TSG Solar Gel Range - VRLA Deep Cycle Gel Batteries**

Valve regulated VRLA batteries fitted with a Monobloc Catalyst to enhance battery life and day-to-day performance at temperatures up to 30°C.

Designed for use in daily cyclic applications.

CAPACITIES: 50Ah to 250Ah at C/100 to 1.80 Vpc at 20-30°C  
DESIGN LIFE: 10 years fitted with Catalyst in float service at 20°C

Optional  
Catalyst



**CELLYTE 2ETG DIN OPzV Range**

**CELLYTE 2ETG Gel OPzV Range - VRLA Tubular Plate Gel Batteries**

Sealed, valve regulated maintenance free Lead Acid Gel batteries fitted with optional Catalyst to enhance performance.

100% recycleable  
Complies with DIN 40736 Part 3  
IEC 60896-21/22-2004

CAPACITIES: 150Ah to 3000Ah at C/10 at 20°C. 1200 Cycles  
DESIGN LIFE: 15 years in float service at 20°C





**CELLYTE 6-12TLG Bloc**

**CELLYTE 6-12TLG Bloc - Sealed Gel VRLA Monobloc Batteries**

Sealed, valve regulated maintenance free Lead Acid Gel batteries. Advanced gelled electrolyte gas recombination technology ensures reliable performance, safety and outstanding battery life

Designed for universal float service/deep cycling applications

CAPACITIES: 20Ah to 280Ah at C/100 to 1.75 Vpc  
DESIGN LIFE: 10 years in float service at 20°C

 <p>SEC Tubular OPzS Range</p>	<p><b>SEC Tubular OPzS Range</b></p> <p>Flooded Stationary Lead Acid Batteries with Tubular Positive Plates. Conforms to Din 40736.</p> <p>This range is specifically designed for stationary installation where cyclic discharge may occur.</p> <p>CAPACITIES: T-Range 100 Ah to 3000 Ah at C/10 to 1.80 Vp  DESIGN LIFE: 15 years in float service at 20°C</p>
 <p>CELLYTE Racking</p>	<p><b>Cellyte Racking</b></p> <p>Designed to hold 24 battery cells in a horizontal position. Available in a conventional tubular steel construction or in Zone 4 rated Seismic modular racks.</p> <p>CAPACITIES: N/a  DESIGN LIFE: N/a</p>

### Why do SEC Batteries contain catalysts?

All lead acid batteries make poisons in the process of the charge-discharge cycle and in flooded, vented cells, these poisons continually escape from the cell throughout the life of the battery. As a result, sealed VRLA batteries were developed some time ago, with the benefit of eliminating venting from the cell. However, it was soon observed that the poisons generated (and now remaining in the sealed VRLA cell) were causing the negative plate to become depolarized and the cell to discharge over time.

To address this significant issue, SEC undertook a detailed research program resulting in the development of a complete range of sealed VRLA batteries with rare earth Catalysts installed in the head space of the cell. The introduction of the catalyst causes changes within the electrochemical activity of the cell itself, and prevents the negative plate from depolarizing over time. In addition, the inclusion of a catalyst was found to give several other key advantages as follows:

- Extended battery life & operating temperature
- Reduced float current by up to 50%
- Reduced gassing by up to 80%
- Reduced cell failure due to dry out
- Minimised water loss
- Extended battery float service life due to reduced plate corrosion
- Full design life even when used at temperatures of up to 30°C
- Reduced possibility of thermal runaway

### The SEC VRLA Catalyst: how it works



Today, SEC has extensive experience of the benefits of using Catalysts in our sealed VRLA cells, and we offer Catalyst equipped products in our 2 volt and 6-12 volt Monobloc batteries. We are also continuing our research and development program into new alternative Catalyst technologies and will be launching further new products in this area in future.

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