



## Battery Basics – What is a Battery?

A battery is one or more electro-chemical cells that convert stored chemical energy into direct current electrical energy.

### Basic Terminology

AC = Alternating current (e.g. wall plug)

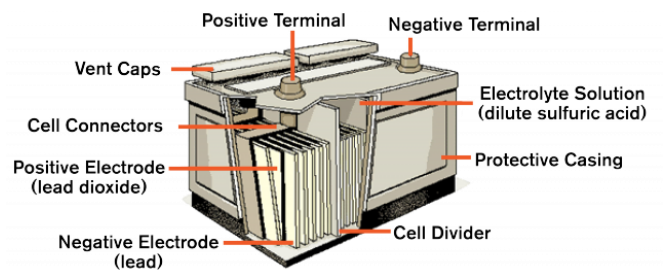
DC = Direct Current (e.g. battery)

Ah = Ampere hour = Amount of power stored in a battery

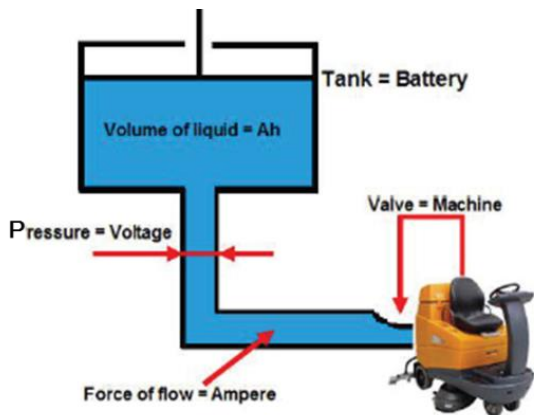
A = Ampere = Force of power flowing at a given time

V = Voltage = Volume of power flowing at a given time

Cell = The smallest physical component in a battery



### Understanding How Batteries Work (Visual Analogy):



### What is a cycle?

Discharging a battery and then recharging the battery back to full.

It is VERY IMPORTANT to understand the APPLICATION and choose the correct battery, charger, & machine combination taking into account the time needed for a complete charging of the battery pack.

\* A battery should never be completely emptied \*

### Battery Life Optimization

“Batteries don’t die ... they get killed”

#### 1st Killer:

- Temperature of the battery
- Charging of the batteries
- Using the batteries

#### 2nd Killer:

- Deep discharge
- When a battery is used (discharged) below the allowable level
- Level specified by the manufacturer of the battery

### Understand Charging

Correct charging is the most crucial process to achieve expected performance and life-time. Each type of battery and each make of battery require an EXACT matching profile for charging.

### To get more information:

Contact your Diversey Care – Health Care Specialist for your tailored consultation. Learn more by visiting <http://solutionsdesignedforhealthcare.com/>.





## Common Battery Types: Pro's & Con's

### Wet, Flooded or Lead Acid batteries

#### Advantages

- Highest cycle life when properly maintained
- Accepts higher recharging voltages
- Lowest initial cost
- Good deep-cycle performance with proper care

### GEL batteries

#### Advantages

- No maintenance
- Shock and vibration resistant
- No gas release
- Longer cycle life than AGM
- Safe and Environmentally friendly

### AGM batteries

#### Advantages

- No Maintenance
- Faster charging than GEL
- Shock and vibration resistant
- No gas release
- Low self-discharge

### Lithium batteries

#### Advantages

- No maintenance
- Light & Compact
- No gas release
- Longer cycle life than Gel / AGM

#### Disadvantages

- Requires periodic maintenance by trained personal
- Requires ventilation
- Higher rate of self-discharge
- Corrosive battery acid can be spilled, causing personal and environmental safety risk
- Must be shipped with specialized carriers

#### Disadvantages

- Higher initial cost
- More weight per Ah than wet batteries

#### Disadvantages

- Lowest cycle life
- Higher initial cost
- Incorrect charging damages the battery
- Most weight per Ah than any batteries

#### Disadvantages

- Highest initial cost
- Less weight per Ah than any battery