Absorption:
The retention of Hydrogen by the Misch Metal (Hydrogen-absorbing) alloys of the negative electrode.

Active Material:
The electrode material that stores chemical energy during charge to produce electrical energy during discharge.

Ampere Hours (Ah):
Unit used to express the amount of capacity in a cell or battery. Ampere Hours is a product of the discharge rate and the discharge time, usually in mAh or milli-Amps times hours.

Anode:
The electrode in the electrochemical reaction where oxidation takes place. During discharge, the negative electrode is the anode. During charge, the positive electrode is the anode.

Battery (Battery Pack):
Two or more cells electrically connected in a series/parallel arrangement to provide the desired voltage/capacity. Common usage for a single cell is battery.

Button Cell:
A cell with an overall height less than the diameter. Button cells are manufactured with circular disc electrodes separated with a separator sheet.

Cathode:
The electrode in the electrochemical reaction where reduction takes place. During discharge, the positive electrode is the cathode. During charge, the negative electrode is the cathode.

Capacity:
The amount of electric current that can be withdrawn from a cell under specified conditions. The capacity is measured in milli-amp hours (mAh) and is the product of the discharge rate and discharge time or mAhr = mA * hrs.

Cell:
The basic electrochemical unit that stores electrical energy or releases stored electrical energy.

Cell Reversal:
The condition of discharging a cell to a state of reversed polarity on the battery. It usually takes three or more cells for this condition to happen.

Change in Temperature (ΔT):
A charge termination based on the difference in temperature of the cell and ambient.

Change in Temperature / Change in Time (dT/dt):
A Charge termination based on the change in temperature over time. The termination is designed to detect the rapid increase in temperature created just before a cell or battery reaches full charge. The normal dT/dt is 1°C per minute.

Charge Acceptance:
The ability of a cell to store energy. May be affected by temperature, charge rate, and State of Charge.

Charge Efficiency:
The ratio of the output of a cell during discharge to the input of a cell during charge. This ratio can be expressed in Efficiency of Capacity, Nominal Voltage, or Power.

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Charge Rate:
The current applied to a cell to restore its capacity. The charge rate is usually expressed in terms of the cells C Rate.

C Rate:
The rate of charge or discharge, in milli-Amperes (mA), expressed as a multiple of the rated capacity of the cell. For example; a 1500_mAhr battery discharged at 0.5C is a 750_mA discharge rate.

Cycle:
A sequence of a discharge followed by a recharge, or a charge followed by a discharge of a battery under specific conditions.

Cycle Life:
The number of cycles available from a cell, under specified condition, before it becomes nonfunctional.

Cylindrical Cell:
A cell with a circular cross-section and its height greater than its diameter. Cylindrical cells are manufactured by spirally winding the electrodes with a separator between them.

Delta V:
See Negative Delta V (-ΔV)

Depression:
See Memory Effect

Depth of Discharge (DOD):
The ratio of electricity, usually in capacity, removed from a cell or battery on discharge to its rated capacity.

Discharge Rate:
The rate, usually in mill-Amperes (mA) or in multiples of the C Rate, at which electrical current is removed from the cell or battery.

Discharge Voltage:
The voltage between the terminals of a cell or battery during discharge.

Duty Cycle:
The operating regime for the cell or battery including charge and discharge rates, charge termination, depth of discharge and time in rest mode.

Electrode:
The matrices that provide the sites for the electrochemical process to take place.

Electrolyte:
The medium that provides the ion transport mechanism between the electrodes. NiMH batteries use Potassium Hydroxide (KOH) as their electrolyte.

Endothermic:
The absorption of heat because of a chemical reaction.

Energy:
The amount of power a cell or battery can deliver over-time. The energy of a cell is a product of the cell's voltage, discharge rate, and discharge time usually expressed in mill-Watt Hours (mWhr) or mWhr = V*mA*hrs.

Energy Density:

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The ratio of a cell's energy to its weight or volume also called Power Density. See Gravimetric Energy Density and Volumetric Energy Density.

Exothermic:
The release of heat because of a chemical reaction.

Fast Charge:
A rate of charging a cell or battery that results in fully charging a battery to full capacity within 2 ½ hours.

Foam:
The matrix that stores the active material in the positive electrode.

Gravimetric Energy Density:
The ratio of a cell's energy to it weight usually expressed in Watt-Hours per kilogram (Wh/kg) also called Power Density.

IEC:
International Electrotechnical Commission

Intercalated:
A reaction where lithium Ions are reversibly removed or inserted into a host without a significant structural change to the host.

Internal Resistance:
The opposition or resistance of a cell or battery to an alternating current usually 1000Hz. The internal resistance is the ohmic component of a cell's or battery's resistance to the flow of electrical current within the cell or battery.

Internal Pressure:
The pressure within a sealed cell caused by oxygen or hydrogen evolution.

Interstitial:
A space between things closely set, or between the parts, which compose a body; a narrow chink; a crack; a crevice; a hole.

Lithium Cobaltite:
($LiCoO_2$) Dark blue powder; insoluble in water. The compound exhibits both the fluxing property of lithium oxide and the adherence-promoting property of cobalt oxide. Intercalates lithium ions in battery applications.

Low-Voltage Disconnect:
A voltage-sensing device to disconnect a battery from a load at a predetermined voltage. A low-voltage disconnect device is to prevent cell reversal during discharge.

Maintenance Charge (Float Charge):
A method of maintaining the charge on a cell or battery by continuously charging at a rate sufficient to balance the self-discharge.

Matching:
Grouping individual cells within 2% of capacity to protect against cell reversal.

Memory Effect (Voltage Depression):
A phenomenon in which repeated cycles to less than full discharge results in depression in the discharge voltage and a lose in the capacity of the cell at normal voltage levels.

Metal Hydride (MH):

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The negative electrode composed of Misch metal (Hydrogen-storing) alloys.

Migration:
The movement of charged ions under the influence of a potential gradient.

Misch Metal (M):
The matrix of the negative electrode composed of Hydrogen-storing alloys.

Negative Delta V (-ΔV):
A charge termination based on detecting a decrease in voltage indicating a cell or battery is charged. This charge termination is designed to terminate charge as over-charge starts.

Negative Electrode:
The negative electrode is the electrode acting as the anode during discharge and is the electrode composed of the Hydrogen-storing alloys.

Nickel Metal Hydride (NiMH):
A cell or battery system composed of a Nickel (Ni) positive electrode and a metal hydride (MH) negative electrode.

Nickel Tab:
The mechanical connector used to electrically connect cells in a battery pack.

Nominal Voltage:
The average working voltage of a cell or battery calculated by power (mWh) by the capacity (mAh).

Open Circuit Voltage (OCV):
The potential difference between the electrodes measured at the terminals in a no-load condition.

Over-Charge:
The forcing of current after all of the active material has converted into stored energy.

Over-Discharge:
Discharging the cell or battery after all of the stored energy has been released.

Oxygen Recombination:
The process in which oxygen generated at the positive electrode during over-charge reacts with hydrogen at the negative electrode to produce water.

Parallel:
Interconnecting cells or batteries with like terminals are connected to increase the capacity of the resultant battery. The resultant battery's capacity is the sum of the capacities of the cells or batteries connected in parallel.

Peak Voltage Detect (PVD):
A charge termination based on the cell or battery reaching a peak voltage. This charge termination is designed to terminate charge just as over-charge starts.

Polarizations:
The obstacles to current flow within NiMH cells.

Positive Electrode:
The positive electrode is the electrode acting as the cathode during discharge and is the electrode composed of a nickel base (Ni) or nickel hydroxide.

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Positive Temperature Coefficient Device (PTC) or Thermostat:

A safety device used in battery packs. At a temperature threshold, the internal resistance goes from a low-resistance state to high-resistance state to provide over-current and over-temperature protection in a battery pack.

Potassium Hydroxide (KOH):

The electrolyte provides the ion transport mechanism between the electrodes, used in NiMH cells.

Potential:

Potential energy per unit charge is voltage. The energy of an electrical charge measured by its power to do work; hence, the degree of electrification as referred to some standard, as that of the earth; electro-motive force.

Power:

Power is measured in Watts (W) and is the time rate of energy transfer. Power is the product of the voltage (V) across the cell or battery and the current (A) through the cell or battery or W = V*A.

Primary Batteries:

A cell or battery that is not rechargeable and is disposed of once it has delivered all of its electrical energy.

Prismatic Cell:

A cell in a slim rectangular configuration. Prismatic cells are manufactured with rectangular electrodes interspaced by separator sheets.

Rapid Charge:

A rate of charging a cell or battery that results in fully charging a battery to full capacity between 2 ½ to 6 hours.

Rated Capacity:

The number of milli-amperes (mA) a cell or battery can deliver under specified conditions (discharge rate, voltage termination, temperature, and charger regime). A cell's rated capacity is measured at a C/5 discharge rate to 1volt @ 25°C after being charged at C/10 for 16 hours.

Rate Capability:

The maximum charge/discharge rate of a cell or battery expressed in a multiple of the C rate.

Rechargeable Cell or Battery:

See Secondary Batteries

Recombination:

See Oxygen Recombination

Resealable Safety Vent:

The resealable vent built into cylindrical and prismatic cells to prevent the build up of high internal pressures.

Secondary Batteries (Rechargeable):

A cell or battery in which passing electric current through the cell or battery in the opposite direction of the discharge can reverse the electrochemical process or recharge the cell or battery, also called rechargeable.

Self-Discharge:

The loss of energy or capacity in a cell or battery due to internal chemical reactions.

Separator:

An ion permeable, electronically nonconductive, material that electrically separates the positive and negative electrodes.

Series:

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Interconnecting cells or batteries with like un-terminals to increase the voltage of the resultant battery. The resultant battery's voltage is the sum of the voltages of the cells or batteries connected in series.

Shelf Life:
The duration under specified conditions that at the end a cell or battery can be stored and retain its performance.

Standard Charge:
A C/10 charge at 25°C for 16 hours.

SLA:
Sealed Lead Acid. An inexpensive secondary battery using Lead.

State of Charge (SOC):
The ratio of electricity, usually in capacity, remaining in a cell or battery on discharge to its rated capacity.

Storage Life:
See Shelf Life

Temperature Cut-Off (TCO):
A secondary charge termination at a specified temperature used in timed, rapid, and fast charge regimes.

Thermal Fuse:
A one-time non-resettable fuse to protect from over-current.

Thermostat:
A circuit protection device to protect against over-current and over-temperature. A thermostat goes from a low-resistance state to an open circuit state at a predetermined temperature.

Thermistor:
A temperature-sensing device used to measure the temperature of a cell or battery pack. Thermistors are typically a Negative Temperature Coefficient (NTC) device. They exhibit a predictable and precise decrease in resistance with an increase in temperature.

Time Charge:
A charge regime, terminated by time, designed to charge a cell or battery within 6 to 16 hours.

Top-Off Charge:
A charge step designed to completely charge a cell or battery when a rapid or fast charge termination is used that does not reach 100% SOC. The most common use of a Top-Off Charge is after a dT/dt termination.

Transport:
The movement of ions within a cell. Cations carry a net-positive charge and anions carry a net negative charge.

Trickle Charge:
See Maintenance Charge

Voltage Cutoff:
An electronics board to disconnect the load from the battery pack.

Volumetric Energy Density:
The ratio of a cell's energy to it volume usually expressed in Watt-Hours per liter (Wh/l) also called Power Density.

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Watt Hours (Wh):

The amount of electric energy that can be withdrawn from a cell under specified conditions. The energy is measured in milli-watt-hours (mWh) and is the product of the discharge voltage, discharge rate, and discharge time.

Working Voltage:

The voltage range of a cell or battery during discharge.

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