

# Forklift Battery Use and Maintenance Stats and Facts



## FACTS

1. A sulfuric acid solution is used as the electrolyte in lead-acid batteries and has a concentration of approximately 37% by weight of sulfuric acid in water. In this diluted state it is not as hazardous as strong or concentrated sulfuric acid, but it acts as an oxidizing agent and can burn the skin or eyes and destroy clothing made of many common materials such as cotton or rayon. And given the presence of these types of batteries throughout so many industries, make sure you're aware of industrial battery safety ahead of time.
2. An explosive mixture of hydrogen and oxygen is produced in a lead-acid forklift battery while it is being charged. The gases can combine explosively if a spark or flame is present to ignite them. Because hydrogen is so light, it normally rises and diffuses into the air before it can concentrate in an explosive mixture. If it accumulates into gas pockets, as can occur within a cell, it might explode if ignited. In this scenario, all manner of forklift battery safety has been breached—and harm can be done to employees and company property.
3. Electricity is produced by the forklift batteries on discharge and, while most persons cannot “feel” voltages below 35 to 40 volts, all motive power forklift batteries should be regarded as potentially dangerous. A lead-acid forklift battery is capable of discharging at extremely high rates and, under conditions of direct shorting, can cause a lot of damage and serious injury to a person.
4. The weight heavy forklift batteries can easily cause painful strains or can crush hands or feet if improperly lifted or handled. Forklift batteries can be damaged if dropped. The average motive power forklift battery weighs more than one ton, so proper equipment must be provided when changing or handling forklift batteries.
5. Burns can result from contact with molten lead or hot compound while repairing a forklift battery. Lead can splash when intercell connectors are being re-burned and hot compound can be spilled when resealing covers to jars. The protective gear provided should be worn as this will prevent such burns.

## STATS

- 96,000 workers are injured per year due to forklifts battery changing.
- 11% of forklifts will be involved in an accident due to battery explosions.
- 70% of all forklift accidents could be avoided with proper training and policy.
- OSHA estimates that each year, approximately 85 workers are killed in forklift-related accidents. In addition, 34,900 accidents result in serious injury, with another 61,800 classified as non-serious.

- By August 2021, the database included 60,912 records. Data shows that direct handling of batteries designated for installation and operation in electric vehicles, forklifts, and pallet jacks is the cause of less than 1% of injuries (52 incidents).