

# Safe



Lead batteries are a safe, reliable and trusted technology for everyday energy storage. Many newer energy storage chemistries do not have the safety track record that lead batteries have maintained.

## Safe for Employees

The lead battery industry puts employee health and safety first, meeting or going above and beyond federal and state requirements, including OSHA standards.

- ⊕ The **U.S. industry has made substantial voluntary investments** in progressive safety training, on-site hygiene, modern equipment and advanced engineering controls.
- ⊕ Manufacturers and recyclers use high-efficiency air filtration systems to **ensure a safe workplace.**
- ⊕ Since 1999, Battery Council International's members have committed to keeping the blood lead levels (BLLs) of workers at levels **well below those required by OSHA.**
- ⊕ At the end of March 2020, average BLLs were **more than 80% below what OSHA requires.**
- ⊕ The Sustainability Consortium recognizes the industry for its **strong record on worker health and safety.**

## Safe for Our Communities

The lead battery industry strives to continually advance processes to protect communities and the environment.

- ⊕ Lead battery manufacturing is one of the most **highly regulated and monitored industries in the U.S.**, subject to strict air and water release limits that protect public health.
- ⊕ Air emissions from lead battery production and recycling are each **less than 1%** of total U.S. lead emissions.
- ⊕ Best Available Control Technologies (BACT) and Best Management Practices (BMP) are standard to achieve the **highest levels of prevention control** from potential releases to air, water and land.
- ⊕ The lead battery industry has proactively developed and funded a [Global Materials Stewardship Program](#) to **increase responsible material sourcing, manufacturing and recycling standards.**

In the U.S., lead batteries maintain a 99% recycling rate using a closed-loop recycling network that keeps **130 million lead batteries** from landfills annually.





Safe for  
**Employees**

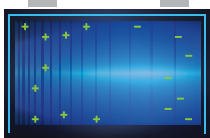
Safe for  
**Communities**

Safe for  
**Diverse  
Applications**

## Safe for Diverse Applications

For decades, lead batteries have safely powered essential industries, including transportation, telecommunications, data security, medical, and now, green energy.

- ⊕ The world **entrusts 70% of its rechargeable energy storage** needs to lead batteries.
- ⊕ Lead batteries provide **nearly 90%** of the **backup power** required for 24/7 telecommunications.
- ⊕ Lead batteries are one of the **preferred solutions** for **data center** uninterruptible power supply (UPS) systems.
- ⊕ Lead batteries help to safely transport Americans via **public transportation 34 million times** each weekday.
- ⊕ When used properly, lead batteries are a **safe energy source**, able to withstand up to 167°F and conditions as cold as -22°F.

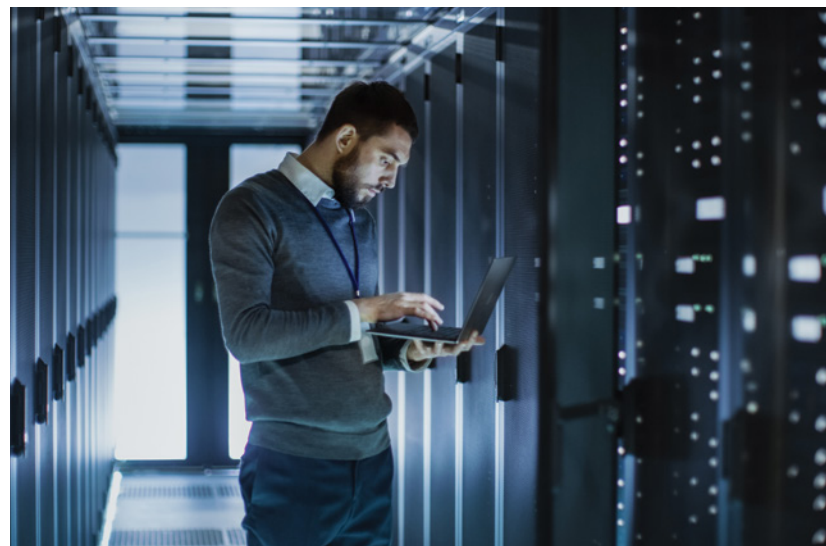


The lead battery is a well-understood system with an aqueous electrolyte that is non-flammable and inherently safe – making battery fires and explosions extremely rare.

“

The lead acid battery ... is legendary. It's a **very safe chemistry** ... [and] we understand how to use it very, very well.”

— Dr. Venkat Srinivasan, Director,  
Argonne Collaborative Center  
for Energy Storage Science



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