



INDUSTRIAL POWER PRODUCTS
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**REGULATIONS REGARDING
BATTERIES AND BATTERY ROOMS**

OSHA REGULATION 1926.441
Battery rooms and battery charging

(a) – General Requirements

1. Batteries of the unsealed type shall be located in enclosures with outside vents or in well-ventilated rooms and shall be arranged so as to prevent the escape of fumes, gases, or electrolyte spray into other areas.
2. Ventilation shall be provided to ensure diffusion of the gases from the battery and to prevent the accumulation of an explosive mixture.
3. Racks and trays shall be substantial and shall be treated to make them resistant to the electrolyte.
4. Floors shall be of acid resistant construction unless protected from acid accumulations.
5. Face shields, aprons, and rubber gloves shall be provided for workers handling acids or batteries.
6. Facilities for quick drenching of the eyes and body shall be provided within 25 feet (7.62m) of battery handling areas.
7. Facilities shall be provided for flushing and neutralizing spilled electrolyte and for fire protection.

(b) – Charging

1. Battery charging installations shall be located in areas designed for that purpose.
2. Charging apparatus shall be protected from damage by trucks.
3. When batteries are being charged, the vent caps shall be kept in place to avoid electrolyte spray. Vent caps shall be maintained in functioning condition.

OSHA REGULATION 1910.178
Subparagraph (g) – changing and charging storage batteries.

(g) – Changing and charging storage batteries

1. Battery charging installations shall be located in areas designed for that purpose.
2. Facilities shall be provided for flushing and neutralizing spilled electrolyte, for fire protection, for protecting charging apparatus from damage by trucks, and for adequate ventilation for dispersal of fumes from gassing batteries.
3. (O.S.H.A. deleted)
4. A conveyor, overhead hoist, or equivalent material handling equipment shall be provided for handling batteries.
5. Reinstalled batteries shall be properly positioned and secured in the truck.
6. A carbon filter or siphon shall be provided for handling electrolyte.
7. When charging batteries, acid shall be poured into water; water shall not be poured into acid.
8. Trucks shall be properly positioned and brake applied before attempting to change or charge batteries.
9. Care shall be taken to assure that vent caps are functioning. The battery (or compartment) cover(s) shall be opened to dissipate heat.
10. Smoking shall be prohibited in the charging area.
11. Precautions shall be taken to prevent open flames, sparks or electric arcs in battery charging areas.
12. Tools and other metallic objects shall be kept away from the top of uncovered batteries.

OSHA REGULATION 1917.157

- (g) – Battery charging and changing
- a. Only designated persons shall change or charge batteries.
 - b. Battery charging and changing shall be performed only in areas designated by employer
 - c. Smoking and other ignition sources are prohibited in charging area.
 - d. Filler caps shall be in place when batteries are being moved.
 - e. Parking brakes shall be applied before batteries are charged or changed.
 - f. (Does not apply to industrial batteries)
 - g. Batteries shall be free of corrosion buildup and cap vent holes shall be open.
 - h. Adequate ventilation shall be provided during charging.
 - i. Facilities for flushing the eyes, body and work area with water shall be provided wherever electrolyte is handled, except that this requirement does not apply when employees are only checking battery electrolyte levels or adding water.
 - j. Carboy tilters or siphons shall be used to handle electrolyte in large containers.
 - k. Battery handling equipment which could contact battery terminals or cell connections shall be insulated or otherwise protected.
 - l. Metallic objects shall not be placed on uncovered batteries
 - m. When batteries are being charged, the vent caps shall be in place.
 - n. Chargers shall be turned off when leads are being connected or disconnected.
 - o. Installed batteries shall be secured to avoid physical or electrical contact with compartment walls or components.

O.S.H.A. 29 CFR Part 1910.120 is called HAZWOPER for Hazardous Waste Operations and Emergency Response. This rule requires the training of an Emergency Response Team (ERT) of first responders. When a hazardous chemical spill happens, the ERT takes appropriate action. Large battery acid spills would be covered here. Also covered are training, writing spill response plans, providing and using personal protective and clean-up equipment.

E.P.A. has the Resource Conservation Recovery Act (RCRA). It defines what constitutes hazardous waste and how it can be handled and disposed legally. There are training requirements in 40CFR Section 262.34 for small generators. Remember that scrap batteries are exempt from hazardous waste regulations as long as they are properly transported to a licensed disposal site (i.e. smelter). Be careful to document these transactions.

O.S.H.A. has the Emergency Planning and Community Right-to-know (SARA) in 40 CFR355. Most battery users will find they are beyond the threshold planning quantity (T.P.Q.) of 1,000 lbs. or more of sulfuric acid (battery electrolyte). The electrolyte inside all the batteries must be included in the T.P.Q. totals. Therefore, this sulfuric acid should be reported with any SARA Section 302 Notification published by that facility.

Any release or spill beyond reportable quantities (1,000 lbs. of electrolyte) will need to be reported according to CERCLA / SARA Section 304. See Section 311 regarding chemical reporting obligations and Section 312 regarding hazardous material inventory reporting (battery areas are Tier II).

D.O.T. regulates batteries being handled and shipped. These would cover any batteries entering or leaving the facility. HM126-F contains numerous training and emergency response issues.

Also, look specifically into

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| 49 CFR 173.1 (b.) | General requirements for shipping and packaging |
| 49 CFR 177.800 (b.) | Carriage by Public Highway |
| 49 CFR 173.101 | DOT – Proper Shipping Names |
| 49 CFR 173.260 (d.) (2) (e) | DOT Blocking and Bracing |