

# BATTERY CHARGING

(See also : [Warehousing\(87\)](#); [Motor Vehicle Repair\(55\)](#))

## BATTERY CHARGING

### INTRODUCTION

Lead-acid industrial batteries are used in two main applications:-

- (i) Motive power - to drive/power forklift trucks etc.
- (ii) Standby power - to provide backup for equipment in the event of a mains failure.

### HAZARDS

- **Chemical:** Batteries contain sulphuric acid, which is poisonous, corrosive and causes burns/irritation on contact with the skin or eyes.
- **Electrical:** Short circuits can cause extensive arcing, burning and melting of metal objects and explosion of any charging gases. Electric shocks can also be received both from the batteries and from the charging equipment.
- **Explosion:** Hydrogen gas is given off by the battery during charging. There is a risk of fire and/or explosion if flammable mixtures of hydrogen with air accumulate.
- **Handling:** Batteries can be heavy. Mishandling may cause personal injury or damage to the battery or other equipment.

### SAFE WORKING PRACTICES

- Chemical
- Provision/awareness of eyewash or drench facilities etc.
  - Protective clothing (face mask or goggles, apron, gloves)
  - Spillage handling equipment & procedures
  - Advice re:- washing off spillage from clothes/skin
- Electrical
- Switch charger off before the battery is connected to it, or disconnected from it
  - Use insulated tools
  - No tools or other conductive objects to be placed on top of the battery
  - Remove any metallic items from hands, wrists, neck (e.g. rings, chains etc.), which may cause accidental short circuits
  - Always disconnect the earthed terminal first (often the negative terminal, but not always . . . SO CHECK) and reconnect it last.
  - Ensure knowledge of actions in the event of electric shock.

**Ref: 9**

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- Explosion
- Provide good ventilation located at a high level immediately above the batteries
  - Designate the charging area 'No Smoking' and 'No Naked Lights'
  - Make sure the battery is topped up to the correct level
  - Ensure all connections are secure before switching on
  - Electrical equipment/sources of ignition to be well away from the charger and below the level of the battery.
- Handling
- Keep batteries upright and properly secured during charging
  - Use the lifting holes provided on the battery container
  - Wear protective clothing and footwear

### **SAFETY EQUIPMENT**

Operators to be issued with, or have ready access to, the following:-

Goggles  
Rubber or plastic gloves  
Overalls  
Rubber or plastic aprons  
Safety footwear  
Eyewash bottle/station  
Fresh water supply  
First aid facilities

### **OTHER PRECAUTIONS**

- Maintenance records
- Training of operators - recorded and retained

### **SAFETY SIGNS**

Warning : Danger - electric shock  
Danger - acid

Prohibition : No smoking  
No naked lights

Mandatory : Eye/Hand/Foot Protection  
Protective clothing

Information: Use of Personal Protective Equipment  
Electrical Incident - what to do

### **DISPOSAL**

This should be through an authorised dealer. Batteries should be correctly labelled and stored upright and secure in a safe area.

## **CHECKLIST - BATTERY CHARGING**

### **BATTERY CHARGING**

- |  |     |    |
|--|-----|----|
| 1. Do you have a designated and separate area or room for battery charging?                                    | YES | NO |
| 2. Is the area/room well ventilated?   | YES | NO |
| 3. Do you have written instructions for charging batteries, dealing with spillages or emergencies?             | YES | NO |
| 4. Do you train operators using the manufacturers' /suppliers' instructions and keep records of such training? | YES | NO |
| 5. Do you provide and maintain appropriate personal protective equipment and clothing?                         | YES | NO |
| 6. Do you provide materials to deal with spillages?  | YES | NO |
| 7. Do you display appropriate notices in the charging area/room?   | YES | NO |
| 8. Are first aid facilities (including eyewash) and a fresh water supply readily accessible?                   | YES | NO |
| 9. Do you maintain records of maintenance for the batteries?   | YES | NO |
| 10. Do you dispose of your old batteries through an authorised dealer?   | YES | NO |

## **REFERENCES/FURTHER DETAILS**

- \*\*1. Electric storage batteries - leaflet INDG139 (HSE).  
[www.hse.gov.uk/pubns/indg139.htm](http://www.hse.gov.uk/pubns/indg139.htm)
- \*2. Health and Safety in Retail and Wholesale Warehouses HS(G)76 ISBN 0-11-885731-2 (HSE)

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- \* Available to view by prior arrangement at Nuneaton and Bedworth Borough Council, Environmental Health Services, Council House, Coton Road, Nuneaton. CV11 5AA
- \*\* Free copy available from Nuneaton and Bedworth Borough Council at the above address.

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