

BATTERY CHARGING

INTRODUCTION

Lead-acid industrial batteries are used in some forklifts to provide motive power.

HAZARDS

- **Chemical:**

Batteries contain diluted sulphuric acid (termed electrolyte), which is poisonous, corrosive and will cause 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 a 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 (POSTER).

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 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
- COSHH information


SAFETY SIGNS

Warning : Danger - electric shock, Danger – acid

Prohibition : No smoking No naked lights No pedestrians

Mandatory : Eye/Hand/Foot Protection, Protective Equipment (PPE)

Safe condition : Eyewash station first aiders/facilities spill procedures
Electrical Incident - what to do

Labeling : Substances- Harmful/irritant, Toxic, Corrosive,

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

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|---|--------|
| 1. Do you have a designated and separate area or room for battery charging with <u>safe access and egress?</u> | 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 (PPE)? | 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 (eyewash stations / first aid boxes) readily accessible? | YES NO |
| 9. Do you maintain records of maintenance for batteries? | YES NO |
| 10. Do you dispose of your old batteries through an authorised dealer? | YES NO |
| 11. Does the lighting comply with DSEAR regulations (are the lamps enclosed). | YES NO |

FOR HSE REFERENCES SEE

www.hse.gov.uk/pubns/indg139.htm