H & S Guidance - 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.

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
Mandatory	Eye/Hand/Food 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.

Underhill Farm, Low Ham, Langport, Somerset TA10 9DP
Tel: 08704 030470

REFERENCES/FURTHER DETAILS

1.Using electric storage batteries safely - leaflet INDG139(rev1) (HSE).
www.hse.gov.uk/pubns/indg139.pdf

2.Health and Safety in Retail and Wholesale Warehouses HS(G)76 ISBN 0-11-885731-2 (HSE)

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