



**1.0 Purpose**

This environmental instruction outlines the practices to be adopted for the handling and storage of chemicals and dangerous goods (DG) to minimise the risks of spillage / leakage and to comply with legal and other requirements.

**2.0 Scope**

This instruction is applicable to the site activities which require the handling and storage of chemicals and dangerous goods. The issues covered in this technical instruction are categorised into:

- Information and Labelling;
- Containers;
- Storage and Transportation;
- Handling and Spill Prevention; and
- Inspection and Maintenance

Some of the major chemicals that are used in the production processes are:

- Strong acids (e.g. Copper anode sulphuric acid) / alkaline (e.g. NaOH from degreasing baths)
- Plating chemicals (e.g. Copper, nickel, silver, gold and palladium-nickel salts)
- Others (e.g. Paint, acetylene, adhesives, lube oil, hydraulic oil, heat transfer oil and organic solvent, and aerosols from general maintenance works)

Procedures for management of chemical waste are given in the EI-03 Waste Management.

**3.0 Procedure****3.1 Application for permits / licences**

3.1.1 The EMR shall determine if DG stored will exceed the exempted quantity, and if so, arrange the appropriate storage facility(s) and obtain licence from the respective authority.

**3.2 Best Practices for Handling and Storage of Chemicals and DG**

The Plant Manager shall ensure that the following practices are properly adopted.

**3.2.1 Information and Labelling**

- Obtain details for the handling, storage and control of impurities and spills from supplier or manufacturer.
- Obtain details of the chemical composition of the substances, and correct treatment with eyes, skin, ingestion, etc from the supplier or manufacturer (usually available in a MSDS)
- Ensure that the information is up to date, provided to the relevant staff, and easily accessible in case of emergency in accordance to the facility safety plan

### 3.2.2 Containers

- Use containers designed to minimise spills.
- Ensure that containers used are appropriate to the substances contained (e.g. do not react with the substance, resistant to corrosions)
- Ensure that containers are maintained in good conditions and securely closed
- Label all containers with appropriate labels (in Chinese and English) (refer to “Labelling and Classification of Dangerous Substances Commonly used in Industry”)
- Do not reuse the chemical container under any circumstances. (e.g. cyanide or acidic chemical containers, etc)

### 3.2.3 Bulk Storage and Transportation

- Provide separate storage facilities for different substances to prevent dangerous chemical reaction and contamination
- Locate secondary containment store as far away as possible from environmentally sensitive areas such as drains.
- Plant Manager is responsible to keep the cyanide chemical (Poisson) separately with other chemicals. Permission for refilling cyanide into the electroplating bath is required from Plant Manager.
- Store goods away from heavily trafficked areas to avoid container damage
- In each storage area:
  - ✓ Ensure that only the substance(s) specified are stored
  - ✓ Provide secondary containment or drip trays, and impermeable floor and bunding
  - ✓ Prevent unauthorised access by providing locks to the storage areas.
  - ✓ Provide clear signage (e.g. category, type of substances, “No smoking” signs).
  - ✓ Ensure adequate ventilation, and fire fighting facilities.
  - ✓ Provide labelled shelving for smaller chemicals.
  - ✓ During transportation keep all containers upright

### 3.2.4 Handling and Spill Prevention

- Use pump dispensers for removal of chemicals from drums and containers
- For handling of chemicals, use equipment and piping only for their designated purposes
- Ensure accurate weighing, dispensing and mixing of chemicals
- Ensure mixing areas are well lit and ventilated, and are as close to their point of use as possible
- Use trays to contain spills from transferring of substances (e.g. from one

container to another).

- Follow the safety instructions provided by the EMR / Plant Manager and chemical label
- Where required, use the protective clothing provided and deposit after use
- Do not smoke, eat or drink in any place where chemical substances are stored or used
- Report any sign of ill health to the Plant Manager and inform him / her of substances used
- Treat all chemicals substances with care. If in doubt, ask the Plant Manager / EMR.

**3.2.5 Cleaning up minor spills**

- Use sand, saw dust, or spill kit to absorb the spill and prevent it from spreading.
- Dispose of the contaminated absorbent material as chemical waste in accordance to EI for Waste Management.
- Ensure that saw dust, spill kits, etc are readily accessible and of enough quantity.

**3.2.6 Inspection and Maintenance**

- Periodically inspect, and where necessary test, the condition of storage drums, tanks and pipelines (especially flanges and gaskets)
- Inspect and maintain all plant and equipment to prevent leakage of chemicals / fuel.

**4.0 Monitoring and Checking**

The EMR shall ensure that:

- storage facilities are operated and maintained in satisfactory conditions;
- practices specified in this EI are followed by staff and contractors;
- the requirements specified in each DG licence (including category of DG stored and the capacity of the storage facility) are complied with; and
- the quantities of non-licensed DG stored do not exceed the exempted quantities.

The Plant Manager or his / her delegate shall:

- undertake weekly walk through inspection to ensure the effectiveness of the control procedures for the handling and storage of chemicals and DG.
- where nonconformity are identified corrective action measures are defined and implemented in accordance with EP-07 Enquiry / Complaint / Nonconformity Handling.

**5.0 Records**

Record Description	Record Location/ Retention Responsibility	Minimum Retention Time
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Lists of chemicals and DGs, including quantities and locations (Refer to Plant Manager)	EMR	3 years
MSDS for all chemicals and DGs (Refer to relevant chemical supplier)	EMR	3 years

**6.0 Appendix**

Nil.