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## Hazardous Waste handling procedure

### 1.0 Purpose

To ensure minimizing of the discharged hazardous waste in to environment through effective pollution control practices and work instructions implementation.

### 2.0 Scope

Hazardous waste handling and disposal procedure that are generated by NBC plant.

### 3.0 Responsibility

#### 3.1 <u>Chemists:</u>

- Identify and classifying the hazardous waste.
- Follow up the proper handling techniques.

### 3.2 <u>Department Managers</u>

Control the generation of the hazardous waste by monitoring yields of all materials used in the plant; explore opportunities for minimizing or eliminating the generation of waste.

### 3.3 Environmental Coordinator:

Has the overall responsibility for evaluating, implementing, monitoring and enforcing the environmental programs of the company.

### 4.0 Definition

### 4.1 *Hazardous waste*:

Hazardous waste: any waste generated, which possesses a physical or health risk to people or environment, exposed to the substance by the virtue of its physical or chemical properties.

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#### 5.0 Method

### 5.1 Hazardous waste Management

Generation of hazardous waste are limited and managed properly. All hazardous waste on site are identified and the employees who normally handle those materials are trained to handle correctly and the safety precautions associated with that.

Correct waste management (hazardous and non-hazardous), involves a structured program to ensure that any wastes generated are correctly identified in terms of their potential hazard to the environment and any staff handling them. It also ensures wastes are correctly labeled, containerized to ensure that they cannot spill, stored in a manner to prevent off-site migration of wastes and non-authorized persons access, transported according to legislation, and disposed of in accord with best-practice environmental guidelines.

At all times consideration must be given to the environment and any persons who may come into contact with the waste during packaging, transport and disposal phases. Legal requirements must be viewed as the minimum standards to be achieved. All waste generating organizations, should have as the core of its waste management strategy, the recognized waste management hierarchy of:

- Reduce the amount of waste generated
- Reuse waste materials wherever possible
- recycle wastes

In order to minimize the impact of wastes on the environment, as well as to reduce costs, all possibilities for reducing the need to generate waste should be explored. The adoption of any opportunities should of course be evaluated against all relevant issues, including service/product quality, occupational health and safety and relevant legislation

Due to the inherent risks with the generation and handling of hazardous wastes to humans, the environment and the wider community, extreme care must be maintained when handling, packaging, transporting and disposing of these wastes. Because of these risks and due to many improper practices in the past, Governments have imposed strict requirements on all generators, transporters and disposal site operators to ensure that there is protection to the community and the environment.

The liabilities that come with these requirements can simply be removed by not generating the hazardous waste in the first instance. If this cannot be avoided, then all hazardous wastes must be:

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- Handled by staff with knowledge and access to appropriate Personal Protective Equipment
- Packaged so that there is no risk of wastes escaping; and
- Transported and disposed of in accordance with requirements

The basic principle of hazardous waste management is that you treat a waste "load" according to the characteristics of the most hazardous component. That is, if there was one liter of hazardous materials in a container containing garden waste, then all the waste must be considered hazardous. Therefore, the basis of hazardous waste management is to ensure that these wastes are segregated from all other wastes and recyclables.

### **5.2 Transport of Hazardous Waste**

### **5.2.1 Internal Transport:**

The following requirements should be implemented for the internal transport of hazardous waste. This is of the hazardous waste containers from point of generation to the designated hazardous waste storage area for and for the specific waste type.

Responsible staff should receive education in the requirements for safe handling and transport of all hazardous wastes. This training should be provided during staff induction programs; during student orientation programs.

Responsible staff should be trained in the use of, and wear appropriate personal protective equipment (PPE) when handling and/or transporting hazardous wastes. PPE includes:

- Eye protection
- Mouth cover
- Protective clothing, gown, lab. Coat, overalls etc.
- Safety footwear, boots preferred
- Gloves
- Face mask or respiratory protection for vapor/fumes where required, fitted with appropriate canisters for potential vapor/fumes. In some instances independent air respiratory equipment will be required.

All waste containers must be sealed prior to any transport. Waste containers should not be transported by hand, unless designed with a carry handle and there is no risk of the waste material spilling during transit. They should be transported by the use of a dedicated trolley or mobile garbage bin (MGB), if appropriate, that has the capacity to contain any spillages.

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Wastes should be transported in a safe manner to ensure bags/containers cannot fall from the collection trolley.

All spills must be immediately reported to the Occupational Health and Safety Section or Central Control. Actions must be commenced immediately in the event of a spill to protect the environment and staff.

Wastes when collected must be transported immediately to the storage area. Under no circumstances should wastes be left unattended at any other site than the designated waste storage site.

### **5.2.2 External Transport**

Waste contractors will only accept wastes that are packaged /sealed in such a manner to avoid risk to the environment or human health. It is the responsibility of the Plant to ensure that all staff is aware of packaging and transport requirements and the implications of not following these procedures.

All wastes transported off-site must be done in a manner that will protect the environment and human health. Transport must also be conducted in accord with local Regulations and requirements.

### 5.3 Hazardous Waste Storage Facility

A storage site for hazardous wastes, can be a purpose built facility or an existing facility/room that has been modified. The key consideration in the storage of hazardous wastes is its safe and secure containment in a clean and tidy area, which allows access for the depositing of wastes, and waste contractors for the collection of the wastes.

The following are the minimum requirements for hazardous waste storage areas:

- 1. The storage area shall have an impervious surface and must contain any spillage. This can be achieved by bonding, by a sump, or by an inward sloping floor or tray. The storage area should have protection from the weather.
- 2. Where practicable, all loading and unloading shall take place within the containment area. Loading and unloading procedures must be undertaken in a manner that ensures wastes will not spill or containers break.

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- 3. Where vehicular access to a bonded area is required, the bund shall be rounded to prevent its damage by vehicles.
- 4. All wastes shall be stored and supervised in accordance with all relevant legislation, regulations.
- 5. Containers storing hazardous wastes shall be securely closed at all times.
- 6. There shall be dedicated hazardous waste storage areas, so that there is no mixing of wastes with other stored material. This includes the mixing of incompatible hazard classes.
- 7. Signs shall be clearly placarded designating what wastes are to be deposited into the storage area and any specific directions/hazards.
- 8. Access shall be limited to authorized persons.
- 9. Hazardous waste stores must be securely locked at all times to prevent access by unauthorized persons.
- 10. The stored wastes shall be labeled by the waste generator, so that it is readily apparent what type of material is stored within.
- 11. There shall be adequate containment measures to prevent off-site migration of spills.
- 12. Necessary clean-up equipment (spill kit) shall be provided.
- 13. No liquid wastes, wash down waters or storm water waste contaminated with hazardous wastes shall be disposed of via the storm water drainage system..

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