



MINISTRY OF ENVIRONMENT AND NDU

ENVIRONMENTAL GUIDELINE No. 14

Pesticides formulation and packing

1.0 Purpose of guideline

This environmental guideline for the pesticide formulation and packing has been prepared by the Ministry of Environment & NDU to ensure that all environmental issues are duly taken into consideration by stakeholders.

2.0 Nature of development

The main purpose of pesticide formulation is to manufacture a product that has optimum biological efficiency and is convenient to use. The active ingredients are mixed with solvents, boosters, and fillers as necessary to achieve the desired formulation. The types of formulations include wettable powders, soluble concentrates, emulsion concentrates, oil-in-water emulsions, suspension concentrates, water dispersible granules and dry granules

3.0 Potential impacts

The major environmental issues associated with the formulation and packing of pesticides are odour, generation of hazardous wastes and effluent disposal. The different aspects, impacts and nuisances related to such activities are listed below:

Activity	Aspects	Impacts/ Nuisances
Construction phase (where applicable)	<ul style="list-style-type: none"> - Generation of excavated soil , debris and construction wastes - Use of heavy machinery 	<ul style="list-style-type: none"> - Dumping into barelands, water bodies and drains - Noise, mud ,dust, traffic and construction waste
Operation Phase		
Formulation, and packing	<ul style="list-style-type: none"> - Release of gases and particulate matter - Risk of spillage -Solid/Hazardous waste generation 	<ul style="list-style-type: none"> - Air, water and soil contamination, dust emission - Odour - Land and water pollution
Cleaning and maintenance	<ul style="list-style-type: none"> - Wastewater generation 	<ul style="list-style-type: none"> -Risks of contamination of water bodies and groundwater

4.0 Siting of activity

Enterprises involved in the bulk storage, formulation and handling of pesticides and dangerous chemicals should be located outside residential areas.

5.0 Environmental conditions

The major environmental issues are generation of **odour, hazardous waste and effluent disposal** and the following conditions shall be observed:

- (i) All hazardous wastes shall be collected and disposed of as per the Environment Protection (Standards for Hazardous Wastes) Regulation 2001.
- (ii) Pesticide containers should be kept tightly sealed and should be inspected for leakage, severe rusting or other defects to ensure their integrity and minimize the risk of pesticide release. If pesticides need to be transferred to other containers because of deterioration, the new container should be clean and should be clearly labelled with the new contents label information.
- (iii) All solid wastes generated from the activity shall be collected and disposed of.
- (iv) Wastewaters shall be collected and disposed of.
- (v) A contingency plan as provided for under section 30 (3)(a) of the Environment Protection Act 2002 shall be prepared and implemented to combat any case of accidental spillage of chemicals.
- (vi) All electric motors such as stand-by generator and air- conditioning devices shall be housed in soundproof enclosures to keep noise level within permissible limits as per the Environment Protection (Environmental Standards for Noise) Regulations 1997. The noise exposure limits as per the above regulation are as follows:

Industrial noise		Neighbourhood noise	
7:00 – 21:00	60*dB(A) Leq	7:00 – 18:00	60 dB(A) Leq
21:00 – 7:00	55*dB(A) Leq	18:00 - 21:00	55 dB(A) Leq
		21:00 – 7:00	50 dB(A) Leq

* A tonal character adjustment of +5 dB(A) should be applied to the measured value where the noise has a definite continuous note such as a whine or hiss.

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- (vii) No nuisance by way of noise dust, air pollution shall be caused to the public and surrounding environment during site preparation, infrastructural works and during operation of the activity.
- (viii) The Department of Environment of the Ministry of Environment and NDU shall be informed in writing of the dates of commencement of works on site and operation of the activity for monitoring purposes.

6.0 Enforcement

Under Section 13 of the Environment Protection Act 2002, the enforcing agencies for the different environmental medium or pollutants are as follows:

S. No	Environmental media/ pollutant	Enforcing Agency
1	Noise, odour	Ministry of Health and Quality of Life
2	Effluents	Ministry of Public Utilities
3	Solid wastes, hazardous wastes	Ministry of Local Government

The above-mentioned enforcing agencies shall monitor compliance with the conditions falling under their purview.

7.0 Offences

Any person who fails to comply with any regulations/standards referred to in this guideline shall commit an offence and shall:

- (i) on a first conviction, be liable to a fine not exceeding 50, 000 rupees and to imprisonment for a term not exceeding two years.
- (ii) on a second or subsequent conviction, be liable to a fine not exceeding 100,000 rupees and to imprisonment for a term not exceeding 8 years.

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