



## MINISTRY OF ENVIRONMENT AND NDU

### ENVIRONMENTAL GUIDELINE No. 13

#### PROCESSING, BOTTLING AND CANNING OF BEVERAGES, SYRUP AND WATER

#### 1.0 Purpose of guideline

This environmental guideline for processing, bottling and canning of beverages, syrup and water 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

- Processing, bottling and canning of beverages and syrup mainly involve dilution and mixing of ingredients with purified water as well as bottling, canning, labeling and packaging.
- Equipment used include homogeniser, water purifying system, semi-automatic filling machine and automatic capping machine.

#### 3.0 Potential impacts

The major environmental issues associated with the processing, bottling and canning of beverages, syrup and water are noise, air pollution, effluent and solid waste disposal. The different aspects, impacts and nuisances associated with such activities are listed below:-

Activity	Aspects	Impacts/ Nuisances
<b>Construction phase</b>		
Site preparation / construction of buildings (where applicable)	<ul style="list-style-type: none"> <li>- Generation of excavated soil , debris and construction wastes</li> <li>- Use of heavy machinery</li> </ul>	<ul style="list-style-type: none"> <li>-Dumping into bare lands watercourses and drains</li> <li>-Noise, mud ,dust, traffic</li> <li>-Visual impacts</li> </ul>
<b>Operation phase</b>		
Handling and storage of raw materials mainly the dry mixtures/concentrated syrup.	<ul style="list-style-type: none"> <li>- Putrefied wastes</li> <li>- Expired raw materials/ obsolete stocks</li> </ul>	<ul style="list-style-type: none"> <li>- Odour, Leachate</li> <li>- Pest , flies and rodents</li> <li>- Health hazards</li> </ul>
Processing, bottling,	- Use of equipment/	- Noise

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canning and labeling.	<p>machineries</p> <ul style="list-style-type: none"> <li>- Stack emissions</li> <li>- Generation of solid wastes including damaged containers and generation of wastewater</li> <li>- Poor housekeeping</li> </ul>	<ul style="list-style-type: none"> <li>-Impact on air quality</li> <li>-Contamination of land and water</li> <li>- Odour</li> <li>- Pest , flies and rodents</li> <li>- Health hazards</li> </ul>
Storage of fuel	Risk of fuel spillage	Fire, land contamination
Loading and unloading activities	<ul style="list-style-type: none"> <li>- Inadequate parking facilities</li> <li>- Vehicular movement</li> <li>- Accessibility</li> </ul>	<ul style="list-style-type: none"> <li>-Traffic implications</li> <li>- Noise</li> </ul>

#### 4.0 Siting of activity

Enterprises should be located outside residential areas.

#### 5.0 Environmental Conditions

The major environmental issues are **noise, air pollution, effluent and solid waste disposal** and the following conditions shall be observed:

- (i) 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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- (ii) Flue and odorous gases shall be channeled through ducts connected to a chimney stack which shall be designed as per good engineering practices.
- (iii) All gaseous emissions from the factory shall be within permissible limits as per the Environment Protection (Standards for Air) Regulations 1998. The stack emissions standards applicable to this undertaking are:

<b>Pollutant</b>	<b>Standard</b>
(i) Smoke	Ringelmann No. 2 or equivalent opacity (not to exceed more than 5 minutes in any period of one hour)
(ii) Solid particles	200 mg/ m <sup>3</sup>
(iii) Sulphuric acid mist or sulphur trioxide	120 mg/ m <sup>3</sup> as sulphur trioxide
(iv) Hydrogen sulphide	5 ppm as hydrogen sulphide gas
(v) Nitric acid or oxides of nitrogen	1 000 mg/ m <sup>3</sup> as nitrogen dioxide
(vi) Carbon monoxide	1 000 mg/ m <sup>3</sup> as carbon monoxide

- (iv) Prior to operation, the proponent shall hold a PET bottle permit as provided for under the Environment Protection (Polyethylene Terephthalate (PET) bottle Permit) Regulations 2001
- (v) All solid wastes generated from the factory shall be collected and disposed of.
- (vi) Wastewaters shall be collected and disposed of.
- (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:

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<b>S. No</b>	<b>Environmental media/ pollutant</b>	<b>Enforcing Agency</b>
1	Noise, odour	Ministry of Health and Quality of Life
2	Effluents	Ministry of Public Utilities
3	Solid wastes	Ministry of Local Government
4	Air pollution, PET bottle	Ministry of Environment

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.

**For further information, please contact**

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