

Table 1: Organic chemicals and allowable discharges value

Enhancing Waste Water Treatment

Table 1: Organic chemicals and allowable discharges

| No | Parameter | Permitted guide value |
|----|--|-----------------------------------|
| 1 | Biological Oxygen Demand (BOD 5 days at 20 °C) | 30mg/l |
| 2 | Total Suspended Solids (TSS) | 30mg/l |
| 3 | pH | 5.0-9.0 (marine) 8.5 (non-marine) |
| 4 | Faecal coliform (F col) counts/100ml | Ni |
| 5 | Oil and grease | Ni |
| 6 | Temperature | 25°C |
| 7 | Phenols | 0.001mg/l |
| 8 | Colour dye and pigment Hazen units | 15 |

Inorganic chemicals and allowable discharges

Table 1: Organic chemicals and allowable discharges

| No | Parameter | Permitted guide value |
|----|--|-----------------------------------|
| 1 | Biological Oxygen Demand (BOD 5 days at 20 °C) | 30mg/l |
| 2 | Total Suspended Solids (TSS) | 30mg/l |
| 3 | pH | 5.0-9.0 (marine) 8.5 (non-marine) |
| 4 | Faecal coliform (F col) counts/100ml | Ni |
| 5 | Oil and grease | Ni |
| 6 | Temperature | 25°C |
| 7 | Phenols | 0.001mg/l |
| 8 | Colour dye and pigment Hazen units | 15 |
| 9 | Chemical Oxygen Demand (COD) | 30mg/l |
| 10 | Total Chromium | 2 |
| 11 | Ammonia | 100mg/l |
| 12 | Copper | 1.0 mg/l |
| 13 | Nickel | 0.2 mg/l |
| 14 | Zinc | 1.5 mg/l |
| 15 | Cyanide A | 0.6 (NI detectable) |
| 16 | Fluoride | 1.5 mg/l |
| 17 | Cadmium | 0.2 mg/l |
| 18 | Lead | 0.2 mg/l |
| 19 | Mercury | 0.005 mg/l |
| 20 | Asenic | 0.2 mg/l |
| 21 | Sulphur | 0.2 mg/l |

• Applicant shall return the duly filled forms and documents to the District Environment Officer who will then forward the form to NEMA Headquarters for processing

• The application will then be reviewed within 21 working days and an approval for licensing will be given with relevant conditions or a decline stating the reasons

• Upon approval, a license fee shall be paid as follows:

- Application fee of KShs 5,000
- Licensing fees of KShs. 100,000
- Other Institutions fees Kshs 20,000

• Upon payment, a license shall be issued within 30 working days and will be liable for renewal every year based on evidence of adherence to set conditions.

Environmental Monitoring and Compliance

NEMA's Environmental Inspectors will undertake regular monitoring of the facilities to ensure compliance with the regulations. In the event of violation of conditions in the licence, the Authority shall revoke the licence notwithstanding the official renewal date. Such facilities shall cease to operate until the licensing conditions are fulfilled.

Offences and Penalties

EMCA 1999 identifies various environmental offences and states that any person who contravenes any part of the regulations commits an offence. The water quality regulations stipulates upon conviction by a court of law a fine not exceeding five hundred thousand Kenya Shillings (KShs 500, 000) in contravention to any part of the regulations. In addition to the above the court may give such other orders as provided for by the Act.

For more information contact

Director General

Popo Road, off Mombasa Road, PO Box 67839-00200,

Nairobi, Kenya

Tel: 6005522/6001945/6008767/2101370

Fax: 254-02-6008997, Hotline: 6000041, Mobile No: 0724253398,

0728585829,0733013046,0733010237

e-mail:dg@nema.go.ke, website: www.nema.go.ke



National Environment Management Authority (NEMA)

Water Quality Regulations, 2006

Chemical Sector



Enhancing Quality Water for All



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Introduction

There are diverse registered enterprises involved in chemical manufacturing utilizing both organic and inorganic chemicals for their operations. The industries utilise variety of chemicals and water for their operations leading to the discharge of chemical effluents as by-products. Although industries are expected to undertake pre-treatment of wastewater, this is often overlooked leading to direct discharge into the environment.

Untreated chemical effluents contaminate the environment through direct discharge, spillages or leakages from treatment plants as well as poor storage. As such, chemical pollution poses risk to water bodies such as rivers, dams, wells, springs, lakes, ocean and ground water. Chemical accumulation in plants and animals over time may lead to cancers or neurological disorders to human beings through ingestion. Other effects of chemicals to the environment include decolouration of water bodies and loss of aesthetic value.

Some of the common industries involved in chemical manufacturing/handling include: pesticides and fertilizers industries; soap and detergents; perfumes and cosmetics; toiletries industries; plastic industries; paints and varnishes; lacquers industries; printing and publishing as well as allied and battery manufacturers.

Targeted Facilities

Enterprises involved in chemical manufacturing and/or handling include, pesticides and fertilizers industries, soap, detergents, perfumes, cosmetics and toiletries industries,

plastics industries, paints, varnishes and lacquers industries, printing, publishing and allied industries and battery manufacturers.

Impacts

Chemical effluents contain large quantities of heavy metals such as mercury, lead and cadmium, which contaminate water bodies, air and soil.

Untreated chemical effluents in the environment are taken up by plants and animals leading to bio-accumulation. The effluents can cause cancers or neurological disorders to human beings. In addition, chemical can cause decolouration of water bodies leading loss of aesthetic value.

Legal Interventions

The Second Schedule of Environmental Management and Coordination Act (EMCA, 1999) requires that environmental impact assessment (EIA) and environmental audit (EA) be carried out for processing and manufacturing industries including chemical works and processing plants.

Obligations

• EMCA 1999 requires that EIA and environmental audit (EA) be carried out for processing and manufacturing industries including chemical works and processing plants.



• The water quality regulations prohibits one from discharging or applying any chemical pollutants into the aquatic environment unless such pollutant complies with the standards set out in annex 2 (third Schedule).

• Operators/owners of chemical manufacturing industries that discharge effluents into the environment shall carry out daily effluent discharge quality and quantity monitoring and shall submit quarterly records of such monitoring to NEMA.

Standards

The following are the permitted water quality standards provided in the Third Schedule as guided in the Fourth Schedule of the Regulations, applicable to the chemical effluents

Licensing Procedures

• All applicants shall obtain relevant application forms from the nearest NEMA office or download the same from the NEMA Website: www.nema.go.ke

• Fill forms indicating EIA or EA Reference Number and attach supporting documents such as site location, maps, sketch of facility/site In relation to water body indicating three sampling points. In addition the applicant must attach design plan of the treatment works, effluent analysis from NEMA accredited laboratories, company PIN Certificate and Certificate of incorporation.

• The applicant shall pay the prescribed application fee equivalent to KShs 5,000 through NEMA's KCB Revenue Account 233971386. A NEMA official receipt will be issued to the applicant on evidence of payment

