

DEPARTMENT OF ENVIRONMENTAL AFFAIRS

NO. 1373

04 NOVEMBER 2016

NATIONAL ENVIRONMENTAL MANAGEMENT: AIR QUALITY ACT, 2004
(ACT NO. 39 OF 2004)DECLARATION OF CERTAIN PRINTING INDUSTRY ACTIVITIES AS CONTROLLED EMITTERS
AND ESTABLISHMENT OF EMISSION STANDARDS

I, Bomo Edith Edna Molewa, Minister of Environmental Affairs, hereby give notice of my intention to declare certain printing activities as controlled emitters in terms of section 23(1) read with sections 24 and 57 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), set out in the Schedule hereto.

Members of the public are invited to submit to the Minister, within 30 days after the publication of the notice in the *Gazette*, written comments or inputs to the following addresses:

By post: The Director-General: Department of Environmental Affairs
Attention: Mr Olebogeng Matshediso
Private Bag X447
Pretoria
0001

By hand: Environment House, 473 Steve Biko Road, Pretoria, 0001

By e-mail: OMatshediso@environment.gov.za

Any inquiries in connection with the notice can be directed to Ms Elizabeth Masekoameng at 012 399 9201 or Mr Olebogeng Matshediso at 012 399 9215.

Comments received after the closing date may not be considered.



BOMO EDITH EDNA MOLEWA
MINISTER OF ENVIRONMENTAL AFFAIRS

SCHEDULE

Part 1: Definitions

Definitions

In this Notice a word or expression to which a meaning has been assigned in this Act has that meaning and, unless the context otherwise indicates:-

“existing printing industry activity” means any activity using an appliance that was installed before the date in which this Notice comes into effect.

“new printing industry activity” means any activity using an appliance that was installed after the date in which this Notice comes into effect.

“operator or owner” means a person that owns, manages, or controls printing industry activity.

“printing industry activity” means an activity using an appliance as described in paragraph 7.

Part 2: General

Application

2. This Notice shall apply to all printing industry activities which are operating anywhere in the country.

Implementation

3. An Air Quality Officer shall be responsible for coordinating matters pertaining to this Notice.

Compliance timeframes

4. (1) New printing industry activity must comply with the emission standards for new printing industry activity as contained in Part 3 on the date of publication of this Notice in the *Gazette*.
(2) Existing printing industry activity must comply with emission standards for existing printing industry activity as contained in Part 3 within 5 years from the date of publication of this Notice in the *Gazette*.

Emission Measurement

5. (1) Emission measurements shall be carried out on vents connected to the printing industry activities.
(2) The concentration of pollutant for which emissions standards have been set in this Notice shall be reported as the average of at least three measurements; measured over a minimum sample period of 60 minutes per sample, under normal operating conditions to obtain a representative sample.
(3) The manner in which measurements shall be carried out must be in accordance with the standard sampling and analysis methods listed in Annexure A of this Notice.

- (4) Methods other than those contained in Annexure A may be used with the written consent of the National Air Quality Officer.
- (5) In seeking the written consent referred, an applicant must provide the National Air Quality Officer with any information that supports the equivalence of the method other than those referred.
- (6) Emission measurements required under 5(3) may be supplemented by means of mass balances or any other acceptable surrogate parameters for months between reporting periods as approved by the National Air Quality Officer.

Reporting requirements

6. (1) The operator or owner of a printing industry activity must –
 - (a) submit at least one emissions report per annum to the relevant Air Quality Officer in the format set out in Annexure B of this Notice;
 - (b) submit the first emissions report to the relevant Air Quality Officer within 12 months from the commencement date of this Notice;
 - (c) provide any additional emissions reports as requested by an Air Quality Officer for the implementation of this Notice; and
 - (d) produce the record of the measurement results for inspection if requested to do so by an Air Quality Officer.
- (2) The report mentioned under paragraph 6(1) must be accompanied by information on how measurements were carried out, equipment used, calibration certificates and any other information that may be required for validation of the emission results.
- (3) The operator or owner of a printing industry activity must –
 - (a) prepare a solvent consumption plan to accurately record total solvent consumption on an annual basis, in a format set out in Annexure C of this Notice.
 - (b) produce the record of the solvent consumption plan(s) for inspection if requested to do so by an Air Quality Officer.
 - (c) retain the records of the annual solvent consumption plans for five years.

Part 3: Emission Standards

Emission Limits

7. A printing industry activity must comply with the emission limits and requirements set out in the table below. All limit values are expressed on daily averages, at specified reference conditions.

Description:		Printing, coating and lamination processes using gravure, flexography, rotary screen printing, heat set lithography, varnishing and printing systems that incorporate elements of these technologies.	
Application:		Installations with organic solvent consumption threshold equal to or more than 25 tonnes per year.	
Substance or mixture of substances		Plant status	mgC/Nm ³ under normal conditions of 273 Kelvin and 101.3 kPa.
Common name	Chemical symbol		
Total Volatile Organic Compounds	N/A	New	100
		Existing	150
Thermal Oxidation			
			mg/Nm ³ under normal conditions of 273 Kelvin and 101.3 kPa.
Oxides of nitrogen	NO _x expressed as NO ₂	New	100
		Existing	400

(a) The following special arrangements shall apply –

- (i) Replacement of printing appliances: Existing facilities which replace printing appliances as described in paragraph 7 and do not increase their operational capacity (output of printed materials) by more than 20% will be required to comply with emission standards for existing printing industry activity limits in five years after the date on which the Notice takes effect.
- (ii) Expansion to existing facilities: Existing facilities which increase their operational capacity by more than 20% through the installation of additional printing appliances as described in paragraph 7 will be required to comply with the new printing industry activity limits in five years after the date on which the Notice takes effect.
- (iii) Facilities with VOC abatement must achieve a 90% availability of the abatement equipment during printing operations.

ANNEXURE A: MEASUREMENT METHODS**1. International Organization for Standardization**

- (a) ISO 10396: Stationary source emissions – Sampling for the automated determination of gas emissions concentrations for permanently-installed monitoring systems.
- (b) ISO 10780: Stationary source emissions – Measurement of velocity volume flow rate of gas streams in ducts.
- (c) ISO 14164: Stationary source emissions – Determination of the volume flow-rate of gas streams in ducts - Automated method.
- (d) ISO 11338-1: Stationary source emissions – Determination of gas and particle-phase polycyclic aromatic hydrocarbons Part 1: Sampling.
- (e) ISO 11338-2: Stationary source emissions – Determination of gas and particle-phase polycyclic aromatic hydrocarbons Part 2: Sample preparation, clean-up and determination.
- (f) ISO 13199: Stationary source emissions – Determination of total volatile organic compounds (TVOCs) in waste gases from non-combustion processes – Non-dispersive infrared analyser equipped with catalytic converter.
- (g) ISO 10849 Stationary source emissions - Determination of the mass concentration of nitrogen oxides. Performance characteristics of automated measuring systems.
- (h) ISO 11564: Stationary source emissions – Determination of the mass concentration of nitrogen oxides – Naphthylenediamine photometric method.

2. United States Environmental Protection Agency

- (a) USEPA Method 1 – Traverse Points
- (b) USEPA Method 1A – Small Ducts
- (c) US EPA Method 2–Determination of stack gas velocity and volumetric flow rate
- (d) US EPA Method 2A–Direct measurement of gas volume through pipes and small ducts
- (e) US EPA Method 2B–Determination of exhaust gas volume flow rate from gasoline vapour incinerators
- (f) US EPA Method 2C–Determination of stack gas velocity and volumetric flow rate in small stacks or ducts
- (g) US EPA Method 2D–Measurement of gas volumetric flow rates in small pipes and ducts
- (h) USEPA Method 3 – Molecular Weight
- (i) USEPA Method 3A – CO₂, O₂ by instrumental methods

- (k) USEPA Method 3C – CO₂, CH₄, N₂, O₂ by determined by thermal conductivity
 - (l) USEPA Method 4 – Moisture Content
 - (m) US EPA Method 7–Determination of nitrogen oxide emissions from stationary sources
 - (n) US EPA Method 7A–Determination of nitrogen oxide emissions from stationary sources–Ion chromatographic method
 - (o) US EPA Method 7B–Determination of nitrogen oxide emissions from stationary sources (Ultraviolet spectrophotometry)
 - (p) US EPA Method 7C–Determination of nitrogen oxide emissions from stationary sources–Alkalinepermanganate/colorimetric method
 - (q) US EPA Method 7D–Determination of nitrogen oxide emissions from stationary sources–Alkaline-permanganate/ion chromatographic method
 - (r) US EPA Method 7E–Determination of Nitrogen Oxides Emissions From Stationary Sources (Instrumental Analyzer Procedure)
 - (s) USEPA Method 18 – VOC by Gas Chromatography (GC)
 - (t) USEPA Method 21 – VOC Leaks
 - (u) USEPA Method 25D – Volatile Organic Concentration
3. **British Standards Institution**
- (a) BS EN 15259: Air quality. Measurement of stationary source emissions. Measurement strategy, measurement planning, reporting and design of measurement sites.
 - (b) BS EN 14181:2004 Stationary source emissions. Quality assurance of automated measuring systems.
 - (c) BS EN 15267-1: Air quality. Certification of automated measuring systems. General principles.
 - (d) BS EN 15267-2: Air quality. Certification of automated measuring systems. Initial assessment of the AMS manufacturer's quality management system and post certification surveillance for the manufacturing process.
 - (e) BS EN 15267-3: Air quality. Certification of automated measuring systems. Performance criteria and test procedures for automated measuring systems for monitoring emissions from stationary sources.
 - (f) BS EN 14792 Stationary source emissions - Determination of mass concentration of nitrogen oxides (NO_x). Reference Method: Chemiluminescence.
 - (g) BS EN 12619 Stationary source emissions - Determination of the mass concentration of total gaseous organic carbon. Continuous Flame Ionisation Detector Method.

- (h) BS EN 13526 Stationary source emissions - Determination of the mass concentration of total gaseous organic carbon in flue gases from solvent using processes. Continuous Flame Ionisation Detector Method.
- (i) BS EN 13649 Stationary source emissions - Determination of the mass concentration of individual gaseous organic compounds. Activated Carbon and Solvent Desorption Method.

ANNEXURE B: TEMPLATE FOR REPORTING EMISSIONS

Emission Measurements Report for Printing Industry Activity

Name of Enterprise: _____

Declaration of accuracy of information provided:

I, _____, declare that the information provided in this report is in all respects factually true and correct.

Signed at _____ on this _____ day of _____

SIGNATURE

CAPACITY OF SIGNATORY

1. Enterprise Details

Enterprise Name	
Trading as	
Postal Address	
Telephone Number (General):	
Fax Number (General)	
Industry Type /Nature of Trade	
Land Use Zoning as per Town Planning Scheme	
Land Use Rights if outside Town Planning Scheme	

2. Contact details

Responsible Person Name	
Telephone Number	
Cell Phone Number	
Fax Number	
E-mail address	

3. Serial number, product name and model of the appliances

Serial Number	Product Name	Product Model	Capacity

4. Point source parameters

Unique stack ID	Point source name	Height of release above ground [m]	Height above nearby building [m]	Diameter at stack tip / vent exit [m]	Actual gas exit temperature [°C]	Actual gas volumetric flow (m³/h)	Actual gas exit velocity [m/s]

5. Point source emissions

Unique stack ID	Pollutant name	Daily Average Values [µg/Nm³]		Emission hours [e.g. 07H00 - 17H00]	Type of emission [continuous/intermittent]

ANNEXURE C – SAMPLE SOLVENT CONSUMPTION RECORD

1. COMPANY CONTACT DETAILS				
1.1 Enterprise Name				
1.2 Physical Address				
1.3 Phone				
1.4 Email				
1.5 Responsible Person				
2. OPERATIONAL DETAILS				
2.1 Main Printing Processes Used:				
2.2 Number of Employees:	1-50		51-100	101+
2.3 Raw Material Containing Organic Solvent:	Volume per year: (tons)		MSDS Attached	
2.3.1			Yes	No
2.3.2			Yes	No
2.3.3			Yes	No
2.3.4			Yes	No
2.3.5			Yes	No
3. Organic Solvent Waste				
3.1 Estimate of Organic Solvents Disposed (tons/annum):				
4. Vents				
4.1 How many vents does your facility have that could contain organic solvents?				
4. Recycling				
What quality of solvent, if any, is recycled (tonnes per annum)?				