



Chemicals and
Waste Management

Waste Management and Associated Impacts of Air Quality



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA



Introduction

- DEA has a heightened focus on the NWMS and waste hierarchy.
- DEA is moving away from end of pipe solutions to prevention, waste minimisation, cleaner production and recycling.
- The Waste Classification and Management Regulations (WC&MR) is a tool used to achieve the above by focusing on the responsibilities of the generator as opposed to the treatment and disposal facilities
- A bold step in terms of the WC&MR is the restrictions/prohibitions to landfill specific waste streams

Waste prohibited or restricted in terms of disposal

| Waste Prohibited or Restricted in terms of Disposal | Compliance Timeframe |
|--|-----------------------------------|
| Waste which, in the conditions of a landfill, is explosive, corrosive, oxidizing, or flammable (according to SANS 10234). | Immediate |
| Waste with a pH value of <6 or >12. | Immediate |
| Flammable waste with a closed cup flashpoint lower than 61 ⁰ C | Immediate |
| Reactive waste that may react with water, air, acids or components of the waste, or that could generate unacceptable amounts of toxic gases within the landfill. | Immediate |
| Waste compressed gases (according to SANS 10234 or 10228). | Immediate |
| Untreated Healthcare Risk Waste (HCRW). | Immediate |
| (i) POPs pesticides listed under the Stockholm Convention. (ii) Residue pesticides and pesticide containers. | Eight (8) years Four (4) years |
| Lead acid batteries. | Immediate |
| Other batteries | Eight (8) years |
| Reusable, recoverable or recyclable used lubricating minerals oils, as well as oil filters, but excluding other oil containing wastes. | Four (4) years |
| Reusable, recoverable or recyclable used or spent solvents. | Five (5) years |
| PCB containing wastes (>50 mg/kg or 50 ppm). | Five (5) years |
| Hazardous waste electric and electronic equipment (WEEE) – Lamps. | Three (3) years |
| Hazardous waste electric and electronic equipment (WEEE) – Other. | Eight (8) years |

Waste prohibited or restricted in terms of disposal

| Waste Prohibited or Restricted in terms of Disposal | Compliance Timeframe |
|--|--|
| Waste tyres: Whole. | Immediate |
| Waste tyres: Quartered. | Five (5) years |
| Liquid waste– (i) Waste which has an angle of repose of less than 5 degrees, or becomes free-flowing at or below 60 °C or when it is transported, or is not generally capable of being picked up by a spade or shovel; or (ii) Waste with a moisture content of >40% or that liberates moisture under pressure in landfill conditions, and which has not been stabilised by treatment. | Six (6) years |
| Hazardous waste with a calorific value of: (i) > 25 MJ/kg. (ii) > 20 MJ/kg. (iii) > 10 MJ/kg. (iv) > 6% TOC. | Four (4) years Six (6) years Twelve (12) years Fifteen (15) years |
| Brine or waste with a high salt content (TDS > 5%), and a leachable concentration for TDS of more 100 000 mg/l. | Eight (8) years |
| Disposal of garden waste: (i) 25% diversion from baseline at a particular landfill of separated garden waste. (ii) 50% diversion from baseline at a particular landfill of separated garden waste. | Five (5) years Ten (10) years |
| Infectious animal carcasses and animal waste. | Immediate |

Link with NEM:AQA

- NEM:AQA seeks to improve the air quality for the protection of environment and health
- Emission standards are provided for in S21 of NEM:AQA
- Ambient air quality standards are provided in S9 of NEM:AQA
- Sulphur is listed as priority pollutant



Link ...cont

- South Africa is a major user of coal for energy and electricity generation and this coal has a high sulphur content
- For a number of industries using coal for energy have had install scrubbers and desulphurization equipment to remove the sulphur from the air emissions is in a gas form into a solid form which needs to be disposed



Link ...cont

- This has increased the volumes and the concentrations of sulphur in wastes going to landfills
- Sulphur is normally a stable chemical which is not highly reactive
- The practice of co-disposal in South African landfills has seen the sulphur waste streams being disposed in landfills where anaerobic bacterial can convert the sulphur in to H₂S



Link..cont

- There has been observed trend of more and more hazardous landfills being accused of causing nuisance conditions for surrounding communities
- It is expected that as more companies comply to the AQA we will see more sulphur containing waste streams going to landfills
- In terms of the Waste Act the landfills can refuse to accept waste that can cause nuisance conditions which in turn returns the problem to the generator
- An alternative may be the construction of mono-cells for specific waste streams

Way Forward

- Industries that are designing for improved air quality must take into consideration what impacts the improvements may have on the resulting waste streams
- A discussion on the holistic management of wastes emanating from the implementation of the AQA and how they can be managed without impacting on sound management of waste and air quality

Thank You



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