



Cluett Consulting Management Alert

Topic: 'Phase-out of PCB Materials and PCB Contaminated Materials'

Actionable	Level of Action	Urgency	Implementation Date	Reporting			Cost Implication
Yes	Group	Immediate	Registration: 10 October 2014 None in units: 2023. None on site: 2026.	Authority	Hard	DMR	Yes
No	Operational	6 Months			Electronic	DEA	
Information Only	Department	>1 Year		Internal	EMS H&S	DEA:AQ DEA:WM	
				Group	Finance Legal	DWS Province	

Requirement: Registration, Monitoring and Reporting
Action Required: Registration of PCB inventory with Authority
Applicable Legislation: National Environmental Management Act (107 of 1998)
 National Environmental Management: Waste Act (59 of 2008)

Background: Polychlorinated biphenyls (PCB)

Polychlorinated biphenyls (PCBs) are synthetic organic compounds that were added to cooling oils in electrical capacitors and transformers because they enhanced the properties of the cooling oils. However, PCBs have been identified as a probable carcinogen in humans entering the body through skin contact, ingestion and/or inhalation of vapours. PCBs may cause a variety of health complications in humans, including dermatitis (inflammation of the skin) and some cancers. A further concern is that when PCB, or PCB-containing oils, burn at low temperatures (around 600°C) they may produce dioxanes and furans that if inhaled in small quantities are lethal to humans. In addition, PCBs are classed as Persistent Organic Pollutants (POPs), causing serious environmental pollution. They build-up in the food chain and are ultimately ingested by humans.

The sale of PCB-containing oils has been prohibited in various parts of the world, including most of Europe, North America and Japan. They are, however, still commonly found in South Africa in electrical capacitors, transformers, oil-bath switchgear and, possibly, old welding equipment.

On the 10 July 2014 **GN R549** was published in GG 37818, under NEMA (107 of 1998). This Regulation deals with the 'phase-out' the use of PCB materials and PCB-contaminated materials throughout South Africa.

GN R549 sets the **classification limits defining PCB contamination**. The Regulation defines PCB contamination under the following three categories:

1. PCB level below 50 mg/kg (about 50ppm) is **Non-PCB**;
2. PCB from 51 mg/kg (>50ppm) to 500mg/kg (500ppm) is **PCB Contaminated**;
3. PCB greater than 500mg/kg (>500ppm) is considered **PCB material**.





Summary of GN R549 requirement:

GN R549 requires that:

- 🌿 No person may use any PCB materials or PCB-contaminated materials after the **year 2023**;
- 🌿 No person may have any PCB materials, PCB-contaminated materials or PCB waste in their possession after the **year 2026**, excluding disposed PCB waste (applicable to licenced waste handlers);
- 🌿 Any person who possesses “articles”, which include dielectric fluid, dielectric fluid containers, electrical equipment or other equipment or materials that contain PCBs or that came into contact with materials that contain PCBs, **must register** with the Director-General, within 90 days of the promulgation of these Regulations, i.e. **by 10 October 2014**, as described in GN R549 Regulation 5 and must follow the requirements as described in Regulation 5, 6, 7, 8 and 9.

The penalties for non-compliance with these regulations are severe and include fines of up to R10 million and/or imprisonment of up to 10 years for the individual/individuals responsible.

Additional Legislation:

Additional legislation, regulations and standards that may apply include:

- 🌿 GN R1179 (GG 16596 of 25 August 1995) Regulations for Hazardous Chemical Substances;
- 🌿 SANS 290- the South African National Standards for Mineral Insulating Oil: Management of polychlorinated biphenyls (PCBs);
- 🌿 MHS Act (29 of 1996) S11: “the employer is to assess and respond to risk”, i.e. where PCBs are present a Risk Assessment must be conducted;
- 🌿 OHS Act (85 of 1993): As required in terms of Section 103 of MHS Act;
- 🌿 NEMA (107 of 1998) S28: Duty of care and remediation of environmental damage by every person who causes, has caused or may cause significant pollution or degradation of the environment;
- 🌿 NWA (39 of 1998) S19: S19- Responsibility of owner, occupier, user or person responsible for land must take all reasonable measures to prevent any pollution of a water resource from occurring, continuing or recurring;
- 🌿 NEM:WA (59 of 2008) S14, S16, S19, S21 and S26.

Recommendation:

It is recommended that all operations obtain a copy of these documents and that responsible persons are familiar with their content.

It is essential that companies and especially the responsible persons

- 🌿 Understand the legal requirements associated with PCBs;
- 🌿 Understand the risks associated with PCBs and PCB-containing products;





- 🌿 Identify PCB-containing equipment and know the extent of contamination;
- 🌿 Comply with the requirements of GN R549 and other applicable legislation;
- 🌿 Complete risk assessments (in terms of the MHS Act) including an assessment of the hazard and subsequent necessary training and PPE;
- 🌿 Label PCB-containing equipment appropriately, including hazard warning signs;
- 🌿 Set up emergency preparedness procedures and plans, for example a special fire-fighting procedure;
- 🌿 Train employees accordingly and allow only trained personnel to work with transformers etc.;
- 🌿 Treat all oils removed from transformers as hazardous compounds, especially regarding their storage and disposal. Safe Disposal Certificates must be obtained and kept on record by any company or person disposing of PCB-contaminated products;
- 🌿 Update both the operations EMS and S&H Management System documentation as required.

Where to look for PCB

Whilst more recent electrical equipment or components from reputable suppliers in the US, UK, Europe and Australia are unlikely to contain PCB it must be confirmed that all new purchased equipment is PCB free.

PCBs may be found in the following equipment:

- 🌿 Older models and makes of transformers, capacitors and 'oil-bath' switch-gear;
- 🌿 Old oil bath welding units;
- 🌿 Oil Circuit Breakers (OCBs)
- 🌿 Service provider oil stocks and servicing equipment;
- 🌿 Electrical equipment in new company acquisitions. Due diligence must include PCB and Asbestos.

This document is amended from the original 2000 Institute of Quarrying presentation by Alan Cluett titled "The Do's and Don'ts of PCB". Copies of the presentation may be obtained from the Institute of Quarrying SA, or are available to Members of ASPASA through the About Face Audit Aid Package.

Cluett Consulting can assist you regarding PCBs and Independent Audits required in terms of the Regulation

