HAZARDOUS CHEMICAL SUBSTANCES

A Supervisor's Safety Guide | RK SAFETY Workplace Safety Series

This is Guide 2 of 5 in the RK SAFETY Workplace Safety Series — download the full series at ***https://rksafety.co.za/safety-resources/***

Why This Risk Matters

Hazardous chemical substances (HCS) are present in virtually every South African industrial, construction, and warehousing environment — from cleaning agents and solvents to adhesives, paints, fuels, and corrosives. The danger is not always obvious. Many of the most harmful substances are odourless, colourless, or appear no more threatening than a tin of paint.

The human cost of chemical exposure is often slow and invisible. Workers exposed to silica dust, asbestos fibres, organic solvents, or toxic fumes may not develop symptoms for years — only to face a devastating diagnosis of occupational lung disease, cancer, or organ damage. For families, watching a loved one deteriorate from a preventable occupational illness is a particular kind of grief. For employers, the liability is significant and long-tailed.

Here is an uncomfortable truth about occupational chemical exposure in South Africa: we do not fully know how bad it is, because the data does not exist in a form that allows us to measure it accurately. A peer-reviewed study published in the International Journal of Environmental Research and Public Health (Rikhotso, Morodi & Masekameni, 2022) confirmed that South Africa lacks a functional national occupational disease surveillance system — meaning chemical-related illnesses are significantly under-counted and under-reported. The absence of data is not the absence of harm. It is an argument for more rigorous workplace controls, not fewer. Organisations like RK SAFETY believe that better data and better training go hand in hand — and that waiting for a consolidated national figure is not a reason to delay protecting the people in your facility today.

Most Common Causes of Incidents

- Absence of Safety Data Sheets (SDS) at point of use
- Workers handling chemicals without adequate PPE
- **Chemicals stored incorrectly —** incompatible substances in proximity, poor ventilation
- No formal hazard identification or risk assessment for chemical tasks
- Inadequate or absent emergency eyewash and spill response equipment
- Unlabelled or poorly labelled containers
- Supervisor failure to enforce PPE compliance consistently
- Workers not trained to read or act on SDS information

What South African Law Requires

The Hazardous Chemical Substances Regulations (1995) under the OHS Act set out specific obligations for employers:

- Regulation 5 requires employers to assess the risk of exposure to every HCS in the workplace and implement controls based on the hierarchy of controls.
- Regulation 7 requires that Safety Data Sheets be obtained from suppliers for every HCS, kept accessible to workers, and reviewed when the substance changes.
- **Regulation 9 requires health surveillance for workers exposed to substances above occupational exposure limits (OELs) —** medical monitoring is not optional.
- **The Globally Harmonised System (GHS) of Classification and Labelling is now the required standard —** all containers must display GHS-compliant labels and pictograms.
- Employers must maintain a register of all HCS used on site and keep records of worker exposure.

Step-by-Step Prevention Checklist

1. **Compile a complete HCS inventory —** List every chemical substance on site. If you don't know what you have, you cannot manage the risk.
2. **Obtain and display Safety Data Sheets —** SDS documents must be in the language workers understand, physically accessible at the point of use, and updated whenever a product changes.
3. **Conduct a formal chemical risk assessment —** Assess each substance against its intended use, quantity, frequency of exposure, and the health risks involved. Review annually and after any incident.
4. **Implement the hierarchy of controls —** Substitution (replace the hazardous substance), engineering controls (LEV, enclosure), administrative controls (safe work procedures), and PPE as the last line of defence.
5. **Ensure correct chemical storage —** Store incompatible chemicals separately. Ensure adequate ventilation. Label all containers clearly with GHS-compliant labels.
6. **Issue and enforce correct PPE —** Gloves, respirators, eye protection, and chemical-resistant clothing must match the substance being handled. PPE must be in good condition and worn correctly.
7. **Install emergency response equipment —** Eyewash stations and safety showers must be accessible within 10 seconds of any chemical handling area. Spill kits must be stocked and workers trained in their use.
8. **Train all workers who handle HCS —** Training must cover hazard identification, SDS interpretation, safe handling procedures, emergency response, and PPE use.
9. **Implement health surveillance —** Workers exposed to HCS must be enrolled in a medical surveillance programme. Baseline, periodic, and exit medicals are required.
10. **Investigate and report all chemical incidents —** Spills, near-misses, and exposures must be reported, investigated, and corrective actions implemented and closed out.

> **KEY TAKEAWAY:** *The harm caused by hazardous chemical substances is largely hidden until it is too late to reverse. Protecting your team requires discipline, systems, and training — not just a cabinet full of SDS documents nobody has read. RK SAFETY's accredited chemical safety training equips your workers to understand what they are handling, why it matters, and how to protect themselves and their colleagues. That is the safe way forward.*

Book your Hazardous Chemical Substances training with RK SAFETY — visit rksafety.co.za/training or contact us today on 031 837 3461.

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