OpsPilot

Chemical Hazard Assessment — User Manual

SDS Review & Chemical Risk · AI Engineering Co-Pilot

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What this guide covers — what a chemical hazard assessment is, how the OpsPilot module turns an SDS into a task-specific assessment, what to have ready, and the document you receive.

1. What is a chemical hazard assessment?

A Safety Data Sheet (SDS) tells you about a chemical in general; a chemical hazard assessment tells you about the risk of using it for a specific task, in a specific quantity, in a specific place — and what controls actually match that hazard. The common failure is to read the SDS, note “wear gloves and goggles,” and stop — applying generic PPE instead of controls matched to how the chemical is genuinely used and how a person could be exposed.

2. What the OpsPilot module does

Role	Responsibility
🎯 **AI Coach (OpsPilot)**	Guides a complete SDS review and chemical risk assessment — extracting the critical information from each SDS section, assessing exposure risks for your specific task, and ensuring controls match the actual hazard classification rather than defaulting to generic PPE.
👷 **Safety / Operations Representative (you)**	Provide the specific task context — how the chemical is actually used, in what quantities, in what environment. Attach the SDS if you have it.

3. How it works — the process

#	Stage
1	Chemical identification — name, CAS number, supplier
2	SDS review — Sections 2, 3, 4, 7, 8, 9, 14
3	Risk assessment by exposure route — inhalation, skin/eye, ingestion
4	Controls — full hierarchy applied
5	Emergency procedures
6	Word report

The SDS sections it focuses on: *2 (hazards), 3 (composition), 4 (first aid), 7 (handling & storage), 8 (exposure controls / PPE), 9 (physical properties), 14 (transport)*.

4. What you will be asked — have this ready

- The chemical — trade name, chemical name and CAS number if known (and the SDS itself, if you have it).
- How it's actually used — the task, the quantity, the frequency.
- The environment — ventilation, confined or open, temperature.
- Who is exposed and how (the exposure routes that matter for this task).

5. What you receive — the output

A complete Chemical Hazard Assessment document (Word): the chemical identification, the key SDS extracts, a risk assessment by exposure route, controls applied down the full hierarchy, and the emergency procedures.

6. Worked example (illustrative)

A solvent used to clean parts. The generic answer is “gloves and goggles.” The task-specific assessment asks how it's used — wiped on by hand in a poorly ventilated bay, several litres a shift. SDS Section 8 gives an exposure limit; the inhalation route, not the skin route, turns out to be the dominant risk in that enclosed space. So the controls climb the hierarchy: substitute a less volatile cleaner if possible (elimination/substitution), otherwise local exhaust ventilation (engineering) comes before respiratory PPE — not gloves alone. The assessment matches the control to the real exposure, which generic PPE never would.

7. Getting the best result

- **Assess the task, not just the chemical.** The same solvent is low-risk in a fume hood and high-risk in a closed bay.
- **Identify the dominant exposure route.** Inhalation, skin or ingestion — the control follows the route.
- **Climb the hierarchy.** Ventilation or substitution beats relying on PPE for a volatile chemical.
- **Use the real exposure limit.** SDS Section 8 gives the number — match the control to it.

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