




SAFETY SHEET

Gold standards for sensing

| Substance | Hazard | Comment |
|-------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ethanol |  | H225 Highly flammable liquid and vapour H319 Causes serious eye irritation P210 Keep away from heat/sparks/open flames P280 Wear eye protection |
| 0.1 mM ethanolic dodecanethiol solution |  | H225 Highly flammable liquid and vapour H319 Causes serious eye irritation TREAT AS TOXIC P210 Keep away from heat/sparks/open flames P280 Wear eye protection |
| Glucose solution | None | |
| Tollens' Solution (from a 0.1 M solution of AgNO ₃ solution) |  | This MUST be made in situ by staff and dispose of within 30 min down sink with lots of water – there is a risk of forming explosive silver fulminate Eye and skin irritant – wear goggles and avoid skin contact |

Typical control measures to reduce risk

- Keep volumes of ethanol used low
- Keep careful control of stocks
- Keep concentration of ethanolic dodecanethiol solution low (<mmolar)
- Teaching staff / technician must make up Tollens' solution
- **MUST DISPOSE OF TOLLENS' SOLUTION 30 MIN AFTER MAKING**

Assessing the risks

- What are the details of the activity to be undertaken? What are the hazards?
- What is the chance of something going wrong? *Eg, Is there the possibility of theft or foolish behaviour?*
- How serious would it be if something did go wrong?
- How can the risk(s) be controlled for this activity?

Emergency action

- **In the eye** If ethanol, Tollens' or dodecanethiol solution gets in the eye, rinse for several minutes. Remove contact lenses if present and easy to do so and continue rinsing. If eye irritation persists see a doctor.
- **On skin** If ethanol, Tollen's or dodecanethiol solution is spilt on skin, remove contaminated clothing and rinse with water.
- **Swallowed** Do no more than wash the mouth with water. Do **not** induce vomiting. See a doctor.
- **Spilt on the floor/bench** Wipe any spilled ethanol solutions up with absorbent cloths.
- **Ethanol catches fire** Report immediately to a fire marshal. Trained personnel: use water spray, alcohol-resistant foam, dry chemical or CO₂.