SAFETY SHEET
Chromatography of painkiller drugs

<table>
<thead>
<tr>
<th>Substance</th>
<th>Hazard</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica TLC plates</td>
<td>No hazard. However it is not good to inhale dust from the silica on plate, so avoid scratching the silica off, avoid creating airborne particles.</td>
<td></td>
</tr>
<tr>
<td>Ethanol</td>
<td>H225 Highly flammable liquid and vapour H319 Causes serious eye irritation</td>
<td>P210 Keep away from heat/sparks/open flames P280 Wear eye protection</td>
</tr>
<tr>
<td>Ethyl Acetate</td>
<td>H225 Highly flammable liquid and vapour H319 Causes serious eye irritation H336 May cause drowsiness/dizziness</td>
<td>P210 Keep away from heat/sparks/open flames P261 Avoid breathing in vapours</td>
</tr>
<tr>
<td>Painkiller tablets</td>
<td>H301 Harmful if excess is swallowed H315 Can cause skin irritation H319 Can cause eye irritation H335 May cause respiratory irritation</td>
<td>P260 Avoid breathing dust</td>
</tr>
<tr>
<td>Permanganate dip</td>
<td>H302 Harmful if swallowed H315 Can cause skin irritation H319 Can cause eye irritation H410 Toxic to aquatic life with long lasting effects</td>
<td>P280 Wear eye protection P273 Avoid release into the environment</td>
</tr>
<tr>
<td>UV TLC lamp</td>
<td>Do not shine directly into eyes Do not expose skin to the light for excessive periods of time</td>
<td></td>
</tr>
<tr>
<td>Glass micro-pipettes</td>
<td>These are fine tubes of sharp glass – dispose of them in a glass bin, and do not leave them where they cannot be seen</td>
<td></td>
</tr>
</tbody>
</table>

**Typical control measures to reduce risk**

- Keep volumes of ethanol and ethyl acetate used low
- Keep careful control of painkiller stocks and UV source to prevent theft
- Set up UV lamp in a specific area, pointing away from user to prevent looking directly at the UV rays.
- Provide TLC plates already cut to avoid forming airborne particles of silica
ChemBam

- Provide the permanganate dip already made up to prevent students having to handle KMnO₄ solid.
- Provide a glass bin to dispose of micro-pipettes

**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 drug solutions, solvents, or permanganate dip get 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 drug solutions, solvents, or permanganate dip are spilt on skin, remove contaminated clothing and rinse with water.

- **Swallowed**
  - If drug solutions, solvents, or permanganate dip are swallowed, do no more than wash the mouth with water. Do not induce vomiting. See a doctor.

- **Spilt on the floor, bench, etc**
  - Wipe any spilled ethanol solutions, ethyl acetate of permanganate dip up with absorbent cloths.

- **Ethanol or Ethyl Acetate catches fire**
  - Report immediately to a fire marshal. Trained personnel: use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.