

## Chemical safety and electronics: Industrial technology

### Answers

#### Activity

In *Electronics* a number of chemicals are used for soldering and etching circuit boards, such as ferric chloride, flux and even the lead/tin solder itself.

At the Redox Chemical web site <http://msds.redox.com.au/data/FECHLO.htm> you will see the MSDS for ferric chloride. Use the information to complete the table below.

Type of contact	Health effects	First aid measures	PPE to use
Swallowed	<ul style="list-style-type: none"> <li>• Irritation of the digestive tract.</li> <li>• Liver and kidney damage.</li> <li>• Severe pain, nausea, vomiting, diarrhoea, and shock.</li> <li>• Severe irritation of the mouth and throat.</li> <li>• Low blood pressure, rapid heartbeat, skin discolouration, and possible coma.</li> </ul>	<ul style="list-style-type: none"> <li>• Rinse mouth thoroughly with water and seek medical attention immediately.</li> <li>• Contact a doctor or the Poisons Information Centre.</li> </ul>	<ul style="list-style-type: none"> <li>• Disposable gloves to minimise risk of contact with mouth.</li> <li>• Always wash hands thoroughly after use even if gloves have been used.</li> </ul>
Eyes	<ul style="list-style-type: none"> <li>• Eye burns.</li> <li>• Contact causes irritation, tearing and burning pain.</li> </ul>	<ul style="list-style-type: none"> <li>• Hold eyes open and flood with water for at least 15 minutes.</li> <li>• Seek medical attention.</li> </ul>	<ul style="list-style-type: none"> <li>• Always use safety glasses and gloves.</li> <li>• Do not rub eyes.</li> <li>• Wash hands thoroughly after use.</li> </ul>

<b>Skin</b>	<ul style="list-style-type: none"> <li>• May be absorbed through the skin.</li> <li>• May cause severe skin irritation with possible burns, especially if skin is wet or moist.</li> </ul>	<ul style="list-style-type: none"> <li>• Remove contaminated clothing and wash skin thoroughly with water.</li> <li>• If irritation occurs seek medical attention.</li> </ul>	<ul style="list-style-type: none"> <li>• Use disposable gloves.</li> <li>• Wear appropriate clothing including apron and footwear.</li> </ul>
<b>Inhaled</b>	<ul style="list-style-type: none"> <li>• The dust is irritating to the respiratory tract.</li> </ul>	<ul style="list-style-type: none"> <li>• Move victim to fresh air.</li> <li>• If irritation or difficulty in breathing occurs seek medical attention.</li> </ul>	<ul style="list-style-type: none"> <li>• If handling ferric chloride dust wear a mask or respirator.</li> </ul>