Hydrocarbons: aliphatic, saturated

Substance	Hazard	Comment
Methane (natural gas); **ethane**; **propane** (Calor gas, camping gas); **butane** (lighter fuel); **LPG** (mixture of propane & butane)	 FLAMMABLE	DANGER: Extremely flammable gases; asphyxiants. Mixtures with air between 6% and 12% methane by volume are explosive, others similar. Mixtures may ignite below 650 °C. **Butane** is easily liquefied under pressure (it normally boils at 0 °C). Propane and butane, the constituents of liquid petroleum gas (LPG) are denser than air. For a 15-minute exposure, the concentration of butane in the atmosphere should not exceed 1810 mg m^{-3}.
Pentane, **hexane**, **heptane**, etc; **Petroleum spirit 40-60°C, 60-80°C, 80-100°C, 100-120°C** (petroleum ether 40-60°C, 60-80°C, 80-100°C, 100-120°C); **cyclohexane**; **petrol** (gasoline); **paraffin** (kerosine);	 HIGHLY FLAMM.  HEALTH HAZARD  HARMFUL  ENVIRON. HAZARD	DANGER: (highly) flammable liquid & vapour; may be fatal if swallowed and enters airways. (Very) toxic to aquatic life with long-lasting effects. May cause drowsiness or dizziness. **Pentane**: repeated exposure may cause skin dryness/cracking. **Hexane**: causes skin irritation (also **heptane**, **cyclohexane**, **paraffin**); suspected of damaging fertility; may cause damage to organs through prolonged/repeated exposure. **Petroleum spirits** (ethers) 40-60, 60-80, 80-100; 100-120 °C and petrol are mixtures of alkanes of variable composition – assume similar hazards if similar boiling points.
Diesel fuel; **engine oil**	 CORROS.  IRRIT.  ENV. HAZ.	DANGER: **Diesel fuel** causes serious eye damage & skin irritation; toxic to aquatic life with long-lasting effects. Some oils may contain substances which cause cancer. After oil has been used in car engines, it may have broken down into more hazardous products.
Waxes; **oils**	**Currently not classified as hazardous**	Includes: paraffin wax, candle wax, petroleum jelly, Vaseline; medicinal paraffin, liquid paraffin, oil for oil baths.

Typical control measures to reduce risk

- Use smallest amount possible; wear eye protection; avoid skin contact; make sure room is well ventilated. Commercially available petrol and diesel contains various amounts of Benzene, so should not be used.
- Use fume cupboard or prevent escape of vapour, eg with mineral wool plug in test tube.
- Check gas supplies for leaks; store bottled gas in a cool place; use 'spirit burners' with care.
- Check equipment to put out fires, eg damp cloth, bench mat, fire blanket.
- Do not use the highly flammable liquids near naked flames; if heating is necessary, use an electrically-heated water bath or hot water from a kettle.

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 does hydrocarbon need to be heated? Could quantities of the vapour be breathed in?
- How serious would it be if something did go wrong? How can the risk(s) be controlled for this activity?
  eg can it be done safely? Does the procedure need to be altered? Should goggles or safety spectacles be worn?

Emergency action

In all emergency situations, alert the responsible adult immediately. Be aware that actions may include the following:

- In the eye — Irrigate the eye with gently-running tap water for at least 20 minutes. Call 999/111.
- Vapour breathed in — Remove the casualty to fresh air. Call 999/111.
- In the mouth/swallowed — Do no more than rinse and spit with drinking water. Do **not** induce vomiting. Call 999/111.
- Spilt on the skin or clothing — Remove contaminated clothing. Wash the skin with soap and water. Take contaminated clothing outside for the solvent to evaporate.
- Spilt on the floor, bench, etc — Open windows if large amounts are spilt. Consider the need to evacuate for large spills. Cover with mineral absorbent (eg, cat litter) and scoop into a bucket. Add washing-up liquid and work into an emulsion. Wash to waste with plenty of water.

