

Hazardous Substances and Fumes

Exhaust fumes, brake dust, solvents, welding fume and paint

Scope and limitations — read before use

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1. Exhaust fumes — carbon monoxide kills quietly

- Running an engine indoors produces carbon monoxide, which is colourless, odourless and fatal. It also produces diesel engine exhaust emissions, which cause cancer.
- Vehicle exhaust extraction must be connected and used EVERY time an engine runs inside, including a quick start to move a car or run an MOT emissions test.
- Check the extraction actually works — hoses split, fans fail, and nobody notices because you cannot see the fumes.
- Keep doors open for general ventilation, but do not rely on that instead of extraction.
- Consider a carbon monoxide alarm in the workshop. They are inexpensive.
- Never run an engine in a closed workshop, even briefly, and never leave one idling while you work elsewhere.

2. Brake and clutch dust

Assume asbestos in brake and clutch components on older vehicles until you know otherwise. Even where asbestos free, the dust is hazardous and should never be blown out with an airline.

- Never use compressed air to blow out brake drums or clutch housings.
- Use a proprietary brake cleaning spray and catch tray, or a dedicated H class vacuum.
- Dispose of the waste and the cloths as controlled waste.
- Very old vehicles, classics and some imports may still have asbestos-containing friction materials. If you work on them regularly, get advice — this may be work with asbestos requiring specific controls.

3. COSHH assessment — the substances in a typical garage

Substance	Main risk	Controls	Assessed? Y/N
Engine oil and used oil	Dermatitis, and used oil is a carcinogen	Gloves, barrier cream, wash properly, no oily rags in pockets	
Brake fluid	Skin and eye irritation	Gloves, eye protection	
Antifreeze / coolant	Toxic if ingested, skin irritation	Gloves, secure storage away from drinks containers	

Degreasers and solvents	Skin, respiratory, fire	Ventilation, gloves, lids closed, flammables cabinet	
Brake cleaner aerosols	Respiratory, fire	Ventilation, no hot work nearby	
Paint, primer and thinners (isocyanates)	ASTHMA — isocyanate paints are a leading cause of occupational asthma	Spray booth with LEV, air-fed breathing apparatus, health surveillance. Do not spray 2K paint without proper equipment	
Body filler and sanding dust	Respiratory, skin	On-tool extraction, RPE	
Welding fume	CARCINOGEN — all welding fume is now treated as carcinogenic	LEV at source plus RPE where LEV cannot control it. General ventilation is not enough	
Battery acid	Chemical burns	Eye protection, gloves, eyewash available	
Air conditioning refrigerant	Asphyxiation, frostbite, pressure	Trained operator, correct recovery equipment, ventilation	
Petrol and diesel	Fire, skin, vapour	Correct storage, no smoking, bonding when decanting	
Adhesives and sealants	Respiratory, skin	Ventilation, gloves, follow the safety data sheet	

4. Welding fume — the position has changed

All welding fume, including from mild steel, is now treated as capable of causing cancer. General ventilation is no longer accepted as adequate control for welding indoors. You need local exhaust ventilation at the point of welding, and where LEV cannot control exposure adequately, RPE as well. LEV requires thorough examination at least every 14 months.

5. LEV register and examination

LEV system	Serves	Last thorough examination	Next due (max 14 months)	Condition	Actions

6. Health surveillance in a garage

Trigger	Surveillance
Isocyanate paint spraying	Respiratory questionnaire and lung function testing — this is a specific and well-known asthma risk

Welding	Respiratory surveillance where exposure is significant
Regular wet work, oils and solvents	Skin checks for dermatitis
Vibrating tools above the action value	HAVS surveillance — see the construction pack CON-03
Noise above the upper action value	Audiometry

Assessed by	Signature	Date	Review date