

Automotive service and repair industry

Chemicals

Harmful chemicals used in automotive service and repair industry

Chemicals are used everyday in automotive servicing and repair and some of these have the potential to injure people, or make them sick. These chemicals are called hazardous substances. Some common hazardous substances used in automotive service and repair industry include:

- solvent cleaners, including substances like turpentine, kerosene etc., which may contain hazardous ingredients, such as xylene and others
- solvent degreasers, which may contain turpentine, methylene chloride
- acids, such as battery acid, containing sulphuric acid
- aluminium cleaners containing highly dangerous hydrofluoric acid
- brake pad dust, which may contain some asbestos fibres.

Used engine oil may be a concern, as the combustion by-products commonly found within the oil are known carcinogens.

These are only some of the chemicals you might be using. You need to identify and control all the harmful chemicals used in your business.

I have some hazardous substances ... what do I need to do about it?

If you store or use hazardous substances you need to:

- ensure all chemical containers have a label on them, clearly identifying what it is and the main safety information about the chemical (e.g. 'Flammable', 'Toxic if swallowed' referred to as risk and safety phrases). DO NOT use old drink or food containers to store chemicals
- obtain a material safety data sheet (MSDS) from your chemical supplier for all hazardous substances
- read the MSDS and do a written risk assessment to identify ways you can use the chemical more safely - this assessment is used to help identify what could go wrong and to allow solutions to be put in place to prevent or minimise risks to workers
- put a copy of the MSDS in a register with a list of all the chemicals at the front, as well as the written risk assessment
- put into place the decisions made, based on the risk assessment, to ensure the chemical is used safely
- train workers who use the chemicals in safe chemical use
- ensure the MSDS and risk assessments are available at all times, for reference, by the people using the chemicals.

Safe chemical use

When you do a risk assessment for each chemical, you need to decide on the safest way to use each chemical. Some questions to consider when making these decisions include:

- **Can I get rid of the chemical altogether?** If you do not need it, get rid of it. You may even be able to change some processes to make some chemicals unnecessary.



- **Can the chemical be substituted for something less harmful?** Chemical manufacturers are frequently developing new products that do the same job but are less harmful. Or there may be alternative processes that use less harmful chemicals.
- **Can I prevent people coming in contact with the chemical?** For example, it may be possible to have chemicals automatically pumped to where it needs to be used, eliminating the need for workers to do it by hand. Similarly, if chemicals need to be diluted or mixed, buying it pre-diluted or mixed will eliminate the need for your workers to do it by hand.
- **Do I have adequate ventilation to remove chemical fumes?** Some chemicals can give off fumes that people can inhale. This should be highlighted in the MSDS if it is likely to occur. If it is possible, you might be able to remove the fume from the workplace through an exhaust system, or by increasing the flow of fresh air into the area. **IMPORTANT:** Do not rely on being able to smell a chemical to know if people are breathing in fumes, as some chemicals have very little to no odour.
- **Do I have work procedures that limit people's exposure to the chemical?** Developing good work procedures can help minimise people's exposure to chemicals. For example, ensure:
 - equipment is properly maintained to prevent leaks
 - flammable chemicals are stored away from heat sources
 - chemical spill procedures are in place
 - work involving chemicals is done when there are no people around
 - people have been trained on how to use the chemical safely.
- **Have I provided people using the chemicals with the right personal protective equipment?** If you cannot prevent people being exposed to a chemical in any other way, you must provide people with the right personal protective equipment (e.g. gloves, masks, aprons). The right personal protective equipment for each chemical is set out in the MSDS for that chemical.

For further information on chemicals and other workplace health and safety issues, call 1300 369 915 or visit www.deir.qld.gov.au

Disclaimer: Any advice given to you as an obligation holder by Workplace Health and Safety Queensland Small Business Advisors is given only to assist you to discharge your obligations under the *Workplace Health and Safety Act 1995* (Qld). Compliance with this advice does not relieve you of your obligations under that Act. Any advice is given on the basis that you will make your own independent assessment of what action is necessary to ensure your compliance with the Act.

Whilst all care will be taken in providing advice to you, the Queensland Department of Employment and Industrial Relations and its inspectors or advisors will not be liable for any errors or omissions or for any loss or damage suffered by you or any person which arises (directly or indirectly) from your reliance on this advice or for any breach by you of your obligations under the Act

Hazardous substances risk assessment

Only required for chemicals that are listed as Hazardous substances.

The Material Safety Data Sheet (MSDS) will be needed to complete the risk assessment.

References: *Workplace Health and Safety Regulation 1997 Part 13; the Hazardous Substances Code of Practice 2003*

Name of substance: Brake fluid (or name of the substances if using a mixture)

How is the substance used? (i.e. describe the process). (If the chemical is used for a number of different processes, a risk assessment may be needed for each task. Also consider decanting, storage and disposal)	Bleed from vehicle's brake system. Pour from drum into smaller container, and then pour into master cylinder in vehicle.
How are people exposed to the substance? (Please tick all routes of entry)	Skin <input checked="" type="checkbox"/> Eyes <input checked="" type="checkbox"/> Inhalation <input type="checkbox"/> Ingestion <input type="checkbox"/>
How much of the substance are workers exposed to during the task? (e.g. in litres / millilitres)	1-2 litres per day
For how long are workers exposed to the substance? How often is the chemical used? (e.g. in hours per day and days per week)	Average of 1 hour per day, 6 days a week
Briefly, what are the health effects of exposure to this substance? (Refer to the MSDS and consider for all routes of entry)	Severe irritation if splashed into eyes – possible conjunctivitis for repeated exposure. Dermatitis on hands.
What engineering control measures are recommended by the MSDS? (e.g. extraction ventilation; dilution ventilation)	General exhaust ventilation for normal operating conditions (local exhaust ventilation may be needed in some circumstances).
What engineering controls are currently used to control exposure to the substance?	Natural ventilation only – door and windows open – there is normally some air movement through workshop.
If engineering controls are used, are they maintained and checked for effectiveness? (Give details)	Yes – a fan is used on those days that there is no breeze (more to keep us cool!).
What Personal Protective Equipment (PPE) is recommended by the MSDS?	Safety glasses/chemical goggles, chemical protective gloves (e.g. PVC), safety footwear.
What PPE is currently used? (Give details)	Safety footwear.
Are any other control measures recommended by the MSDS? (e.g. procedures, rotation of people, using substance after hours to minimise how many people are exposed)	Eye wash unit, skin cleansing cream, barrier cream.
Are any other control measures currently used at the workplace?	Barrier cream.
What is the risk from use of this hazardous substance? (tick one)	<input type="checkbox"/> Risks not significant now and not likely to increase in the future. <input type="checkbox"/> Risks are significant but effectively controlled (but could increase in the future). <input checked="" type="checkbox"/> Risks are significant and not effectively controlled. <input type="checkbox"/> Uncertain about the risks (conduct air monitoring and/or health surveillance or obtain further information and advice).

<p>Why did you suggest this risk level?</p>	<p>Risks are significant and not effectively controlled because we don't protect our skin and eyes from exposure.</p>																
<p>Does air monitoring need to be done? You can have air monitoring done to:</p> <ul style="list-style-type: none"> • find out how much your workers are being exposed to • find out if the controls being used are adequate to ensure worker's health and safety is protected. 	<p>No – inhalation of brake fluid vapours is not a problem because this brake fluid is not very volatile.</p>																
<p>What control measures will be implemented? <i>(The best type of control is by elimination; however other types of controls can be used).</i> Hierarchy of control measures</p> <ul style="list-style-type: none"> • elimination (Most effective) • substitution (with a less hazardous substance) • engineer out the hazard by isolation • engineer out the hazard by ventilation • administrative controls_ • PPE (especially respiratory protection) (Least effective) 	<p>Give details (if any):</p> <ul style="list-style-type: none"> • train workers on safe use of brake fluid • purchase and use PVC gloves and safety glasses to prevent exposure to eyes and hands from splashes, spurts and spills • supervise workers to make sure they are doing the task and using the glasses and gloves properly and that there are no new problems. 																
<p>Is health surveillance required? Health surveillance is required if there continues to be a significant risk and the substance contains (or is) one or more of the following:</p> <table border="1" data-bbox="153 1126 727 1406"> <tr> <td>4,4' Methylenebis (2-chloroaniline) (MOCA)</td> <td>Inorganic chromium</td> </tr> <tr> <td>Acrylonitrile</td> <td>Isocyanates</td> </tr> <tr> <td>Asbestos</td> <td>Organophosphate pesticides</td> </tr> <tr> <td>Benzene</td> <td>Pentachlorophenol (PCP)</td> </tr> <tr> <td>Cadmium</td> <td>Polycyclic aromatic hydrocarbons (PAH)</td> </tr> <tr> <td>Creosote</td> <td>Thallium</td> </tr> <tr> <td>Crystalline silica</td> <td>Vinyl chloride</td> </tr> <tr> <td>Inorganic arsenic</td> <td></td> </tr> </table> <p><i>(Refer to s 109 of the Queensland Workplace Health and Safety Regulation 1997)</i></p>	4,4' Methylenebis (2-chloroaniline) (MOCA)	Inorganic chromium	Acrylonitrile	Isocyanates	Asbestos	Organophosphate pesticides	Benzene	Pentachlorophenol (PCP)	Cadmium	Polycyclic aromatic hydrocarbons (PAH)	Creosote	Thallium	Crystalline silica	Vinyl chloride	Inorganic arsenic		<p>No – none of the ingredients are in the list of substances that require health surveillance and no workers have had any health problems from past use of the brake fluid.</p>
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Date: 08/08/2005

Review date: 08/08/2010

Person/s conducting risk assessment: Joe Bloggs

Hazardous substances risk assessment

Only required for chemicals that are listed as Hazardous substances.

The Material Safety Data Sheet (MSDS) will be needed to complete the risk assessment.

References: *Workplace Health and Safety Regulation 1997 Part 13; the Hazardous Substances Code of Practice 2003*

Name of substance: Triple A X-tra Strong Aluminium Cleanser *(or name of the substances if using a mixture)*

How is the substance used? (i.e. describe the process) (If the chemical is used for a number of different processes, a risk assessment may be needed for each task. Also consider decanting, storage and disposal)	Diluted with water (1:10) and poured into spray bottle. Sprayed from the spray bottle onto aluminium bullbars/wheels and hosed off then buff clean parts with a cloth.
How are people exposed to the substance? <i>(Please tick all routes of entry)</i>	Skin <input checked="" type="checkbox"/> Eyes <input checked="" type="checkbox"/> Inhalation <input checked="" type="checkbox"/> Ingestion <input type="checkbox"/>
How much of the substance are workers exposed to during the task? (e.g. in litres / millilitres)	Concentrate – up to ½ litre per week. Dilute solution: up to 200 ml per day.
For how long are workers exposed to the substance? How often is the chemical used? (e.g. in hours per day and days per week)	Concentrate: 15 minutes, once a week. Dilute: 1 hour per day, up to 7 days a week.
Briefly, what are the health effects of exposure to this substance? <i>(Refer to the MSDS and consider for all routes of entry)</i>	Very corrosive – can cause severe burns to eyes and skin. Inhalation of vapours/spray can cause burns. This product contains 7% hydrogen fluoride (Hydrofluoric Acid - HF). HF easily penetrates the skin destroying tissue and bones and poisoning the body - can cause death if not immediately treated properly . There can be a delay of many hours before the onset of pain.
What engineering control measures are recommended by the MSDS? (e.g. extraction ventilation; dilution ventilation)	General exhaust ventilation is normally adequate, but local exhaust ventilation might be needed under some circumstances.
What engineering controls are currently used to control exposure to the substance?	Natural ventilation (used outside or in naturally ventilated area).
If engineering controls are used, are they maintained and checked for effectiveness? <i>(Give details)</i>	We rang the supplier and they said a respirator is necessary for both tasks (mixing and using).
What Personal Protective Equipment (PPE) is recommended by the MSDS?	Chemical goggles/face shield, gloves, footwear, eye wash unit, PVC apron or overalls, respirator.
What PPE is currently used? <i>(Give details)</i>	For decanting: chemical goggles and nitrile rubber gauntlet gloves. For use: none.
Are any other control measures recommended by the MSDS? (e.g. procedures, rotation of people, using substance after hours to minimise how many people are exposed)	Immediate response, first aid (have calcium gluconate gel readily available and people who know to use it and how to use it) and go to hospital immediately after first aid.
Are any other control measures currently used at the workplace?	We use it only in the shade and not on hot cars, to minimise how much vapours come off it.

<p>What is the risk from use of this hazardous substance? (<i>tick one</i>)</p>	<p><input type="checkbox"/> Risks not significant now and not likely to increase in the future.</p> <p><input type="checkbox"/> Risks are significant but effectively controlled (but could increase in the future).</p> <p><input checked="" type="checkbox"/> Risks are significant and not effectively controlled.</p> <p><input type="checkbox"/> Uncertain about the risks (conduct air monitoring and/or health surveillance or obtain further information and advice).</p>																
<p>Why did you suggest this risk level?</p>	<p>Risks are significant and not effectively controlled (for both mixing the cleanser and using the cleanser) because we don't have calcium gluconate gel or a respirator, therefore are at risk when pouring and mixing the concentrate and using the cleanser.</p>																
<p>Does air monitoring need to be done? You can have air monitoring done to:</p> <ul style="list-style-type: none"> • find out how much your workers are being exposed to • find out if the controls being used are adequate to ensure worker's health and safety is protected. 	<p>Yes – we need to check that the respirator is adequate protection against the spray droplets and vapours of Hydrofluoric and Sulphuric acids.</p>																
<p>What control measures will be implemented? (<i>The best type of control is by elimination; however other types of controls can be used</i>).</p> <p>Hierarchy of control measures</p> <ul style="list-style-type: none"> • elimination (Most effective) • substitution (with a less hazardous substance) • engineer out the hazard by isolation • engineer out the hazard by ventilation • administrative controls • PPE (especially respiratory protection) (Least effective) 	<p>Give details (if any):</p> <p>For use:</p> <ul style="list-style-type: none"> • use disposable nitrile gloves, PVC apron, goggles and half-face respirator (with acid gas filter) • train workers on safe use of the cleanser, immediate first aid and getting to the hospital • obtain and maintain a supply of calcium gluconate gel and eye wash unit • supervise workers to make sure they are using the cleanser, face shield, respirator and gloves properly and that there are no new problems. <p>For mixing/pouring into spray pack, implement all the above except use gauntlet style nitrile rubber gloves rather than disposable gloves.</p>																
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