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## **Hazardous Substance Risk Assessment Guide for the Smash Repair Industry**



Funded by a grant from  
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### **Hazardous substance risk assessments:**

Queensland Workplace Health and Safety law requires that the risks from using a hazardous substance at work be assessed and that a record of this assessment be made and kept. A hazardous substance risk assessment is a process of applying information about the substance to the way that you use it. The risk assessment will help you work out if the substance is currently being used safely, and if not – how to use it safely.

This guide has been designed for the Smash Repair Industry to provide:

- guidance on how to do hazardous substance risk assessments; and
- a risk assessment form that can be used.

The supplement to this guide 'Example Hazardous Substance Risk Assessments' provides example risk assessments on many hazardous substances used in the smash repair industry to assist smash repair operators. These risk assessments are examples only as circumstances are different in every workshop therefore your risk assessments may be significantly different. Note: There will be hazardous substances used at your workplace that are not included in this supplement such as some cleaning and bonding products.

## **When to do a hazardous substance risk assessment:**

- Now, if it has not yet been done.
- For a new hazardous substance: before using the substance or as soon as practicable after the substance is first used;
- For a hazardous substance already in use: no more than 5 years after the last risk assessment was done for that substance; or
- When:
  - The way the substance is used changes significantly;
  - New information about the substance is available;
  - Health surveillance or monitoring shows the control measures are inadequate;
  - Control measures are changed

## **Before doing your hazardous substance risk assessments:**

Before starting on your hazardous substance risk assessments, you will need a **current (less than 5 years old) Material Safety Data Sheet** (MSDS for short) for each hazardous substance used at your workplace. Ask your suppliers for these if you do not have them already.

Look at each MSDS for a statement about whether the substance is hazardous or not hazardous – for example look for wording like “**Hazardous according to the criteria of NOHSC**”. If the substance is not classified as ‘Hazardous’, it can still have effects on health and the obligation of making sure people’s health and safety are protected still applies. You therefore still need to assess and control the risks. The same process as for a hazardous substance risk assessment could be applied to do this.

Most smash repair businesses use hundreds of hazardous substances (numerous different colours of tinters, types of thinners / reducers etc. etc. etc.). It is possible to group substances that are similar in their ingredients and uses thereby performing one risk assessment to cover lots of similar substances.

In doing this, it is essential to carefully check the MSDSs for significant differences to make sure all potential exposures and ingredients are catered for. It may also be necessary to do multiple risk assessments for the one substance if it is used in different ways – mixing the substance may need to be a different risk assessment to using the substance if the exposures are different (such as mixing spray paint as opposed to spray painting – the exposures are different).

In the supplement for this guide, **many substances** commonly used in smash repair **have been put into groups**. There will still be many at your workplace that won’t fit these groups thus needing further risk assessments to be done. This list will however cover the majority of hazardous substances used in the smash repair industry. The groups are:

- Spray painting ‘Category 1’ paint systems (Higher risk paints such as 2 pack paints - base, solid and clear coats with thinners/reducers etc)
- Spray painting category 2 paint systems (paints such as single pack / enamel paints with thinners etc.)
- Mixing Category 1 and Category 2 paint systems
- Mixing and applying body fillers
- Sanding body fillers
- Using sealers
- Using degreasers
- Using cutting and buffing compounds

In addition, individual risk assessments have been done on:

- Using wax and grease remover
- Using gun wash
- Using window cleaner
- Using alloy wheel cleaner
- Using rust remover

Note for this guide and its supplement: **‘Category 1 paint system’** means: Higher risk paints mixed with thinners / reducers / hardeners etc. These paint systems pose a higher risk because they can cause cancer, poisoning, sensitisation of the respiratory system (asthma), or contain mutagens (causes mutations) or teratogens (causes birth malformations). This category includes 2 pack paints containing isocyanates and other paints if they contain Benzene, Cadmium, Chromium or Lead.

**‘Category 2 paint system’** means: Paint systems that do not contain the substances that make paints category 1 (Isocyanates, Benzene, Cadmium, Chromium, Lead) but still pose a high risk. These paint systems are generally single pack or enamel paint systems (mixed with thinners) etc. They contain organic solvents and are usually class 3 dangerous goods.

### **How to do a hazardous substance risk assessment:**

Using the risk assessment form (see appendix A) is one way of keeping a suitable hazardous substance risk assessment record, however you can make your own record if you prefer (refer to the Workplace Health and Safety Regulation 1997 for what has to be in the record and for further details). **The following guidance is to assist in completing the provided form.** Each number relates to the question number on the risk assessment form.

#### **1. Name of substance.**

Write the name of the substance or substances if it is a mixture. If it is a group of substances, write the group name here and refer to an attachment where each substance’s name is listed. If you are doing more than one risk assessment for the one substance (perhaps one for mixing it and one for using it) – you can include this in the name of substance. For example, *“Mixing category one paints – refer to attached list for details”* and the attachment must list every paint / thinner / reducer / hardener this risk assessment applies to.

#### **2. How is the substance used?**

Briefly write how the substance or group of substances is used. For example *“the mixed paint, hardener and thinners are spray painted onto cars”*.

Note: A risk assessment cannot be done from behind a desk – you must observe what your employees actually do.

#### **3. How are people exposed to the substance?**

There are four ways (routes of exposure) a hazardous substance can get into a person:

- Skin - either affects the skin directly or is absorbed through the skin and affects other parts of the body:
  - Splashed straight onto the skin or onto clothes then soaks through to the skin;
  - Vapours / mists / fumes / dusts etc. in the air that come into contact with skin.
- Eyes – same as for skin – splashes, vapours / fumes / mists / dust etc. affect the eyes directly or can be absorbed through them.
- Inhalation – the most problematic – vapours / mists / fumes / dusts etc. are breathed in and either do damage where they hit a surface in the respiratory system or are absorbed by the body and cause health problems.
- Ingestion – the least common type of exposure – swallowing substances.

Refer to the MSDS and think about how the substance is used at your workplace. Tick or mark one or more of these routes of exposure – add notes if you need to.

**4. How much of the substance are workers exposed to during the task?**

Are they using a few millilitres/grams or several litres/kilograms?

**5. For how long are workers exposed to the substance?**

Do they use it every day for most of the day (eg: 5 hours per day, 6 days a week) or only occasionally (eg: once a month for about ½ hour).

**6. Briefly, what are the health effects of exposure to this substance?**

Read through the MSDS – in particular the Health Hazard Information section – summarise the relevant information from the MSDS on your risk assessment.

**7. What engineering control measures are recommended by the MSDS and/or label?**

Once again, refer to the MSDS, in particular the Precautions for Use section. Summarise the relevant information on your risk assessment.

**8. Currently, what engineering control measures are used at your workplace to control exposure to the substance?**

Engineering control measures are those that are a physical change to the work or machinery or workplace for example: ventilation systems (spray booths, extraction systems etc); isolation with barriers etc. Note: think about whether this is the same or better than what the MSDS recommends.

**9. If engineering controls are used, are they maintained and checked for effectiveness?**

For example: checking air flow rates, servicing and maintaining the spray booth.

**10. What personal protective equipment (PPE) is recommended by the MSDS and/or label?**

From the MSDS – Precautions for use section and the label of the substance.

Note: Be specific (for example “respirator and gloves” is not enough information -specify what type of respirator and gloves such as “½ face respirator with organic solvent filters and Nitrile Rubber gloves”). The MSDS sometimes doesn’t provide specific information – call the supplier of the product if you need further details.

**11. Currently, what PPE is actually used?**

Summarise what PPE employees currently use. Note: think about whether this is the same or better than what the MSDS recommends.

**12. Are any other control measures recommended by the MSDS and/or label?**

Other controls might include:

- Rotation of staff (to minimise the length of exposure to each individual employee);
- Using the substance out of hours to decrease how many people will be exposed;
- Writing procedures on how to do the task;

Training and supervision of employees (employees using hazardous substances must be trained).

### **13. Are any other control measures currently used at the workplace?**

Summarise any other controls that are already in place but have not been written down anywhere else on this risk assessment.

### **14. What is the level of risk from use of this hazardous substance?**

Look at your answers in questions 4, 5 and 6 to work out how dangerous the substance is to your workers. Then, compare your answers from questions 8, 9, 11 and 13 with what the MSDS recommends (questions 7, 10 and 12) to work out if exposure to the substances is being controlled enough to make your employees safe.

Note: These options refer to whether the risk is significant or not significant. "Significant risk" means that the work with a substance is likely to cause health problems.

For example, there would be a "significant risk" if:

- the severity of the possible health effects from exposure to the substance are substantial; or
- there are no control measures in place or they are not adequate to protect people from the substance; or
- people are exposed to a large amount of the hazardous substance - i.e. the worker is exposed to a large amount or for a long time each day.

You can now choose one of the four following options which apply for your workplace based on the level of risk from use of the hazardous substance:

#### **1. Risks not significant and not likely to increase in the future**

- Choose this option if it is unlikely that the use of the substance will impact on someone's health and the risk is not likely to increase in the future.
- For example:
  - the amounts or rate of use of the substance are too small to be a risk, even if the controls fail
  - the use of the substance obviously and strictly conforms to the information in both the MSDS and label
  - similar assessments in the past found the risks were not significant, and work conditions are still the same

#### **2. Risks are significant but are effectively controlled (but could increase in the future)**

The risk of most uses of hazardous substances is significant and you must control the exposure effectively. This option is therefore the one you should be achieving for most of your hazardous substance risk assessments.

- Risks, while controlled effectively at the moment could increase in the future if for example:
  - control measures are not used / maintained properly or are faulty
  - human error
  - the amount of the substance used increases

#### **3. Risks are significant and not effectively controlled**

- Choose this option if the use of a hazardous substance is likely to cause health problems because exposure to it is not being effectively controlled – for example:
  - there are complaints of headaches, irritation, excessive odour (or other health effects)

- the substance gets splashed
- control measures are not adequate to protect people from the substance
- safe work practices are not being followed
- If risks are significant and not effectively controlled you may need to have some monitoring done so you can figure out how much and what type of extra controls need to be put into place.

#### **4. Uncertain about the risks**

- Choose this option if you cannot accurately estimate how much people are exposed to or if there is not enough information about the substance.
- If you are uncertain about the risks, consider having air monitoring done to help you find how much people are being exposed to. Also try to get more information about the substance (or if you can't get information, use a different substance that you can get information for). Then do a new risk assessment.

### **15. Does air monitoring need to be done?**

You may need to have air monitoring done if you don't know:

- how much employees are exposed to, or
- if the control measures in place are enough to protect their health and safety

If you choose to do monitoring, you can seek advice and assistance from a workplace health and safety consultant who has skills and qualifications in occupational hygiene.

### **16. What control measures will be implemented?**

Compare the relevant control measures recommended in the MSDS with those used at your workplace. Are the controls used at your workplace adequate to make sure employees' health and safety is protected? Consider your control measure options by working through the **hierarchy of controls** (as set out in the Workplace Health and Safety Act 1995) – starting at the top with “elimination” and working down to “personal protective equipment (PPE)”:

Note: The higher level control measures in the hierarchy of controls (elimination, substitution then engineering control measures) reduce the hazard at its source and therefore are more effective than the lower level control measures (administrative control measures and personal protective equipment), which just protect people from the hazard.

#### **➤ Elimination:**

If a hazardous substance isn't there it can't harm people. So if you can do without it, get rid of it.

#### **➤ Substitution:**

Chemical manufacturers are frequently developing new products that are less harmful but do the same job. Or there may be alternative processes that use less harmful chemicals.

#### **➤ Engineer out the hazard by isolation:**

For example, use of an automatic gun wash machine eliminates the need for workers to do it by hand.

#### **➤ Engineer out the hazard by ventilation:**

You might be able to remove vapours and fumes from the workplace through an exhaust ventilation system or by increasing the flow of fresh air into the area.

IMPORTANT: Don't rely on being able to smell a chemical to know if people are breathing it in. Some chemicals have no, or very little, odour.

➤ **Administrative controls:**

Can you minimise exposure through (for example):

- Rotation of staff (to minimise the length of exposure to each individual employee);
- Using the substance after hours (so fewer people are exposed);
- Writing procedures on how to do the task;
- Training and supervision of employees.

➤ **Personal Protective Equipment (PPE)**

Is personal protective equipment and clothing needed to protect the employee from the substance? (this is the least effective way to control exposure)

Note: People using personal protective equipment have to be trained in how to use and maintain the equipment properly. Types of PPE include:

- Eye protection such as goggles or safety glasses
- Skin protection such as gloves, coveralls, shoes
- Respiratory protective equipment (respirator / air supplied hood)

Note: Normally a combination of two or more types of control measures will be necessary to achieve adequate protection.

**17. Is health surveillance required?**

You must arrange and pay for health surveillance for your employee if:

- They have had an adverse reaction or illness due to exposure to a hazardous substance at work and there is a way of doing health surveillance for it; or
- The level of risk (from question 14) is “significant” and the substance is or contains one of the substances shown below (refer to the ingredients list on the MSDS):

- |  |                              |  |
|--|------------------------------|--|
| • 4,4' Methylenebis (2-chloroaniline) (MOCA) | • Creosote                   | • Pentachlorophenol (PCP)                |
| • Acrylonitrile                              | • Crystalline silica         | • Polycyclic aromatic hydrocarbons (PAH) |
| • Asbestos                                   | • Inorganic arsenic          | • Thallium                               |
| • Benzene                                    | • Inorganic chromium         | • Vinyl chloride                         |
| • Cadmium                                    | • Isocyanates                |  |
|  | • Organophosphate pesticides |  |

**18. Date:**

Date the risk assessment is done.

**19. Review date:**

Risk assessments have to be reviewed at least every five years (or sooner if there is a change in the substance or the way it is used).

**20. Person(s) conducting risk assessment:**

The names of the persons who conducted the risk assessment.

## **Risk assessment attachments:**

You can attach information to your risk assessments such as lists of substances on that risk assessment; or any other details that are important.

## **Where to from here?**

- Put the material safety data sheets somewhere your employees can easily access them; and
- Put into place the control measures (decided on in the risk assessment) that will make use of the product safe; and
- Train the people who will be using those products how to use them safely; and
- Supervise them to make sure they are doing what they should be doing.

## **For full details of Queensland workplace health and safety hazardous substance laws:**

Refer to the legislation:

- *Queensland Workplace Health and Safety Act 1995;*
- *Queensland Workplace Health and Safety Regulation 1997;*
- *(Workplace Health and Safety Queensland) Hazardous Substances Code of Practice 2003.*

**Disclaimer:** Any advice given to you as an obligation holder by MTAQ 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. The risk assessments provided are examples only – your risk assessments will need to cater for specific hazardous substances and circumstances in your business.

Whilst all care will be taken in providing advice to you, MTAQ and its staff 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.

**Appendix A:**  
**Risk assessment form**

(You can use this form or make up your own)



**Business name:** \_\_\_\_\_

## Hazardous Substances Risk Assessment

The chemical's label and Material Safety Data Sheet (MSDS) will be needed to complete the risk assessment.  
References: Workplace Health and Safety Regulation Part 13; the Hazardous Substances Code of Practice 2003

**1. Name of Substance:** \_\_\_\_\_  
(or name of the task and substances if appropriate)

<b>2. How is the substance used? - i.e. describe the task?</b> (If the chemical is used for a number of different tasks a risk assessment may be needed for each task).		
<b>3. How are people exposed to the substance?</b> (Tick or mark applicable routes or entry)	Skin (splashed onto or absorbed through):	
	Eyes (splashed onto or absorbed through):	
	Inhalation (breathed in):	
	Ingestion (swallowed):	
<b>4. How much of the substance are workers exposed to during the task?</b> (eg: in litres / millilitres, kilograms/grams)		
<b>5. For how long are workers exposed to the substance?</b> (How often is the chemical used. eg: in hours per day and days per week)		
<b>6. Briefly, what are the health effects of exposure to this substance?</b> (Refer to the MSDS)	Skin:	
	Eyes:	
	Inhalation:	
	Ingestion and chronic:	
<b>7. What engineering control measures (eg: extraction ventilation; dilution ventilation) are recommended by the MSDS and/or label?</b>		
<b>8. Currently, what engineering controls are used to control exposure to the substance?</b>		
<b>9. If engineering controls are used, are they maintained and checked for effectiveness?</b> (Give Details)		
<b>10. What Personal Protective Equipment (PPE) is recommended by the MSDS and/or label?</b>	Skin:	
	Eyes:	
	Inhalation:	
<b>11. Currently, what PPE is used?</b> (Give Details)	Skin:	
	Eyes:	
	Inhalation:	

<p><b>12. Are any other control measures (eg: procedures, rotation of people, using substance after hours to minimise how many people are exposed...) recommended by the MSDS and/or label?</b></p>																			
<p><b>13. Are any other control measures currently used at the workplace?</b></p>																			
<p><b>14. What is the level of risk from use of this hazardous substance (select one)?</b></p> <ol style="list-style-type: none"> <li>1. <b>Risks not significant and not likely to increase in the future</b></li> <li>2. <b>Risks are significant but effectively controlled (but could increase in the future)</b></li> <li>3. <b>Risks are significant and not effectively controlled</b></li> <li>4. <b>Uncertain about the risks</b> (<i>Conduct air monitoring and/or health surveillance [see below] or obtain further information and advice</i>)</li> </ol>	<p><b>Level of risk: .....</b>  <b>Explanation of why this risk level is chosen:</b></p>																		
<p><b>15. Does air monitoring need to be done?</b>  You can have air monitoring done to:</p> <ul style="list-style-type: none"> <li>• find out how much your employees are being exposed to</li> <li>• find out if the controls being used are adequate to ensure employee's health and safety is protected</li> </ul>																			
<p><b>16. What control measures will be implemented?</b>  (The best type of control is by elimination; however other types of controls can be used).</p> <p style="text-align: center;"><b>Hierarchy of Control Measures</b></p> <p>Elimination (MOST EFFECTIVE)  Substitution (with a less hazardous substance)  Engineer out the hazard by isolation  Engineer out the hazard by ventilation  Administrative controls (rotation, procedures etc)  Personal Protective Equipment (LEAST EFFECTIVE)</p>	<p><b>Give details (if any):</b></p>																		
<p><b>17. Is health surveillance required?</b>  Health surveillance is required if:</p> <ul style="list-style-type: none"> <li>• Someone has an adverse effect from a hazardous substance at work and there is a way to detect signs of the health effect; or:</li> <li>• The level of risk (from question 14) is significant and the substance contains (or is) one or more of the following:</li> </ul> <table border="0" style="width: 100%;"> <tr> <td>• 4,4' Methylenebis (2-chloroaniline) (MOCA)</td> <td>• Creosote</td> <td>• Pentachlorophenol (PCP)</td> </tr> <tr> <td>• Acrylonitrile</td> <td>• Crystalline silica</td> <td>• Polycyclic aromatic hydrocarbons (PAH)</td> </tr> <tr> <td>• Asbestos</td> <td>• Inorganic arsenic</td> <td>• Thallium</td> </tr> <tr> <td>• Benzene</td> <td>• Inorganic chromium</td> <td>• Vinyl chloride</td> </tr> <tr> <td>• Cadmium</td> <td>• Isocyanates</td> <td></td> </tr> <tr> <td></td> <td>• Organophosphate pesticides</td> <td></td> </tr> </table> <p><small>(Refer to section 109 of the Queensland Workplace Health and Safety Regulation 1997)</small></p>	• 4,4' Methylenebis (2-chloroaniline) (MOCA)	• Creosote	• Pentachlorophenol (PCP)	• Acrylonitrile	• Crystalline silica	• Polycyclic aromatic hydrocarbons (PAH)	• Asbestos	• Inorganic arsenic	• Thallium	• Benzene	• Inorganic chromium	• Vinyl chloride	• Cadmium	• Isocyanates			• Organophosphate pesticides		
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**18. Date:** \_\_\_\_\_ **19. Review Date:** \_\_\_\_\_

**20. Person/s conducting risk assessment:** \_\_\_\_\_

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