



## Background

Vehicle spray painting involves the use of hazardous substances (solvents, two-pack paints containing isocyanates). These substances can cause occupational asthma, skin sensitisation/allergic dermatitis and affect the central nervous system. Many vehicle spray painting workplaces are small businesses and may have limited occupational safety and health resources.

## What we did

WorkSafe visited approximately 50 spray painting workshops to assess and improve compliance with the occupational safety and health legislation, and in particular the hazardous substances requirements such as the use of correct respiratory protection and provision of health surveillance. A limited amount of air monitoring for isocyanates and urine testing for isocyanate metabolites was conducted.

## What we found

Common issues requiring improvement included:

1. Air supplied respirators not provided when spraying two-pack paints or primers containing isocyanates;
2. Breathing air quality not checked;
3. Respirators not stored in clean conditions or not maintained;
4. Some spray-painters lifted the visor to inspect work before fumes had dispersed;
5. Workers were often not aware that the isocyanates in 2-pack paints can cause occupational asthma and skin sensitisation (allergic dermatitis);
6. Inadequate training and information provided to workers;
7. Health surveillance (respiratory and skin medical checks) was not usually provided to spray painters who used two-pack paints;
8. Spray booths not maintained or with low airflow in parts of the booth;
9. Workers and employers were unaware of booth clearance time (time taken for fumes to clear after spraying);
10. Material safety data sheets (MSDS) were not available for paints, thinners and other hazardous substances or not up to date (older than five years);
11. Risk assessments for hazardous substances had not been conducted; and
12. Urine tests for some spray painters were consistent with exposure to isocyanates. We noted that urine tests were better than air monitoring for identifying low level exposure.

## Obligations

Employers should check their compliance with safety and health legislation by referring to the checklist overleaf, with a particular focus on provision of air supplied respirators and health surveillance. If unsure about the requirements, contact WorkSafe on 1300 307 877 or email [safety@commerce.wa.gov.au](mailto:safety@commerce.wa.gov.au) .

# Spray painting: WORKING SAFELY WITH HAZARDOUS SUBSTANCES

Checklist is for hazardous substances related issues – checklists on other matters are available at [www.worksafe.wa.gov.au](http://www.worksafe.wa.gov.au)

	Check and take action on items where “No” is checked.	Yes	No	NA
Personal Protective Equipment	Air-supplied respirators used when spraying 2-pack paints (not cartridge style)			
	Breathing air is tested annually or more often and results are available (test oxygen, carbon monoxide, carbon dioxide, oil and temperature)			
	Respirators are stored in sealed, clean containers and cleaned before and after use			
	Respirators are cleaned, checked and maintained regularly			
	Chemical resistant gloves (eg nitrile) and coveralls are worn when spraying/mixing			
Storage & handling	Spill procedure and spill cleanup equipment are available			
	Paints and thinners are stored in closed containers, the storage area is ventilated, and they are not stored in the spray booth			
	Containers earthed during decanting of flammables from drums			
Spray booth and ventilation	Good extraction ventilation in mixing/pouring area			
	A spray booth is used when spraying with any hazardous paint or primer (except small amounts of touch up work)			
	Spray booth is inspected regularly (Check for cracked or damaged light fittings, heavy paint build up on filters or surfaces, exhaust air filters not fitting correctly or missing, low airflow)			
	Booth is regularly maintained (filters, lights and cleanliness) and maintenance records are kept			
	Spray booth is made of non-combustible materials			
	Spray booth has smooth, easy to clean interior			
	Lighting in spray booth does not present an ignition source (eg lights are in a sealed enclosure)			
	No ignition sources in or near spray booth			
	Emergency exits are easy to open and have signage			
	Signs are on spray booth doors that say: “Warning: Toxic and/or flammable vapours may be present”			
	Spray booth exhaust stack at least 3m above roof and vertical			

	Check and take action on items where “No” is checked.	Yes	No	NA
Spray booth	Air filtered or scrubbed before entering exhaust system and filters replaced regularly			
	Airflow regularly checked with an anemometer and meets requirement of Australian Standard AS4114 (down draft or semi down draft booth > 0.25 m/s in vertical; semi down draft 0.5 m/s in the horizontal, cross flow booth >0.5 m/s)			
	Written operating instructions displayed on spray booth			
	Employees using spray booth are trained in booth operation			
Emergencies	Evacuation procedure displayed and practiced			
	No smoking indoors or near flammable materials.			
	Fire extinguishers inspected and maintained			
	Eye wash present where required by risk assessments			
Facilities	Reasonable facilities for washing hands (sink, cleanser, paper towel)			
	Hands not washed in thinners			
	No food/drinks in spray booth or mixing or chemical storage areas			
Information and training	Register of material safety data sheets (MSDS), including contents list, is readily available			
	MSDS are current (less than 5 years from issue date)			
	Risk assessments for hazardous substances have been completed and recorded			
	Workers have been trained (preferably face to face) in the hazards and controls for hazardous substances – including that 2-pack paints containing isocyanates can cause occupational asthma and allergic dermatitis - and training records are kept			
	Hazardous substances are labelled – including jars and any other containers which contain hazardous substances.			
	Health surveillance/medical checks are provided at least every 6 months, for workers who use isocyanates (all workers who regularly spray-paint with 2-pack vehicle paints). Health surveillance should focus on the skin and the respiratory system, and urine testing is also available to check exposure.			
	Any other safety or health issues noted (list):			