



# BEST PRACTICE MANUAL FOR DRY-CLEANERS MANAGING DRY-CLEANING WASTE





## Disclaimer

This Manual has been developed to assist businesses understand the main Victorian Government regulations that apply to management of dry-cleaning waste, being the *Environment Protection (Industrial Waste Resource) Regulations 2009*. The Manual is intended to provide an easy-to-read summary of the key requirements that apply to dry-cleaning waste management in the state of Victoria, and can be used to identify regulations that may apply to you, your duties and areas where you can improve compliance.

Although the Manual was written to help businesses understand what the Victorian legislation for waste management requires, it is not a legal document nor a substitute for the regulations. It should not be viewed as a definitive guide to the law and does not contain, and should not be taken to be, legal advice. The Manual does not cover every requirement relevant to dry-cleaning businesses, and should not be used as your only source of information on environmental regulations.

It is important to note that this Manual covers waste management methods only. There are several other environmental regulations and legislation with which dry-cleaners must comply; the requirements of these are not covered in this Manual. This includes the State environment protection policies (SEPPs) which aim to protect the environmental values and human activities (beneficial uses) in the State of Victoria from pollution and waste; in particular the SEPP Air Quality Management, SEPP Waters of Victoria and SEPP Prevention and Management of Contamination of Land. Also, where chemicals and solvents are handled or stored on a site, it is important to follow the relevant requirements for chemical handling and spill management. There are also additional practices that should be undertaken specifically in relation to chlorinated solvents (e.g. perc) due to their toxicity.

Importantly, the Manual is not intended to replace proper occupational training, which is a requirement under Victorian Occupational Health and Safety (OHS) laws.

Whilst every effort has been made to ensure the accuracy of the information presented in this Manual, the advice presented may not apply in every circumstance. Accordingly, Hyder Consulting takes no responsibility for, and provides no warranty in relation to:

- the suitability of the information for any particular purpose; and
- actions taken or not taken by any user of the Manual or any third parties, as a result of information contained in this guide.

If you need help with any of the contents of this Manual or have additional questions, refer to the list of contacts and resources provided on page 26 of this Manual.

## Acknowledgements

This Manual was developed with funding from the HazWaste Fund. The HazWaste Fund, administered by EPA Victoria, was designed to support industry to accelerate reductions in the volume and hazard of hazardous waste (or prescribed industrial waste) generated in Victoria, and to increase remediation of contaminated soils.

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Reference material has also been drawn and adapted from the following major resources:

Environmental Protection Agency Office of Environmental Enforcement (OEE). (2013).

*Best Practice Guidelines for Dry Cleaning Issued to support European Union (Installations and Activities using Solvents) Regulations 2012 (S.I. 565 of 2012).*

Regional Source Control Program (2007) *Environmental Regulations and Best Management Practices*.

Drycleaning Institute of Australia. (1996).

*Code of Practice for the Safe Handling of Perchloroethylene in the Drycleaning Plant 1996.*



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### DIA Endorsement

The Drycleaning Institute of Australia (DIA) is the peak industry association for drycleaners in Australia with branches in every state and territory. The DIA has a prime responsibility of assisting its members in the various areas of small business and drycleaning industry related matters. These include the care labelling standards, environmental concerns, customer service, and training and education of drycleaners, the public and the manufacturing sector.

Waste management is a major concern for the DIA and its members. Mis-management of waste in many of our regions has led to major incidents, including illegal dumping and even fire. In at least one state of Australia, this has led to a serious response from the environmental regulator which had ramifications for many dry-cleaners. It is important that Victorian dry-cleaners work together and act now, so that future incidents can be avoided.

Fortunately, solutions are available to guide the industry towards improved compliance and best practice management of dry-cleaning waste. Hyder has produced this Manual outlining both the minimum and best practice methods for management of dry-cleaning waste, and DIA looks forward to working with Victorian dry-cleaners to maximise uptake of this Manual and its methods.

## Why should you read this manual

Dry-cleaners provide a valuable dry-cleaning service. The solvents and chemicals used by dry-cleaners offer much greater cleaning power than home laundries can achieve, but with this comes responsibility and, sometimes, liability. This is because, due to the chemicals and solvents used, most dry-cleaners produce wastes that are hazardous, and hazardous wastes are regulated by the Victorian Government.

This Manual has been developed to help dry-cleaning businesses understand and comply with the regulations and requirements relevant for managing dry-cleaning waste in Victoria. The Manual demonstrates the minimum requirements for complying with Victorian regulations, and also presents best practice methods to help businesses reduce waste and solvent loss, and save money.

This Manual will help you to:

- Understand Victorian environmental regulations
- Understand dry-cleaning wastes and why some are hazardous
- Understand how to properly store, transport and dispose of dry-cleaning wastes
- Learn best practice methods to reduce waste, solvent usage and business costs

## Additional Benefits

Reading this Manual will also help you to:

- reduce solvent loss
- increase recovery of solvent
- improve operating performance
- improve your workplace environment
- lower your risk of liability (e.g. for pollution, non-compliance)

## Important things to note

Every attempt has been made to ensure that this Manual is relevant to most dry-cleaning operations, however not all businesses are the same. There are a number of different dry-cleaning solvents available for use, and an even bigger range of dry-cleaning machines. In some parts of this Manual it was necessary to present more general advice, in order to provide a greater coverage of the industry. You should always refer to the information specific to your chosen solvent and chemicals (i.e. MSDS), as provided by your suppliers, and follow the recommendations of your machine's manufacturer.

## Manual structure: key steps to compliance and best practice

The Manual is structured around key steps to achieve best practice management of dry-cleaning waste.

There are five Steps to the Manual, which are shown in the diagram overleaf. Each Step includes a discussion of the minimum requirements under the regulations, and best practice methods where relevant.

### STEP ONE: Understand the regulations and requirements (refer to Pages 6 to 8 for more information)

*In brief:*

- Under Victorian law, you are required to understand the environmental regulations relevant to drycleaning waste.
- Consider opportunities for avoidance, reduction, reuse, recycling, treatment or reprocessing of waste BEFORE disposal

### STEP TWO: Understand your waste and whether it is hazardous (refer to Pages 10-12 for more information)

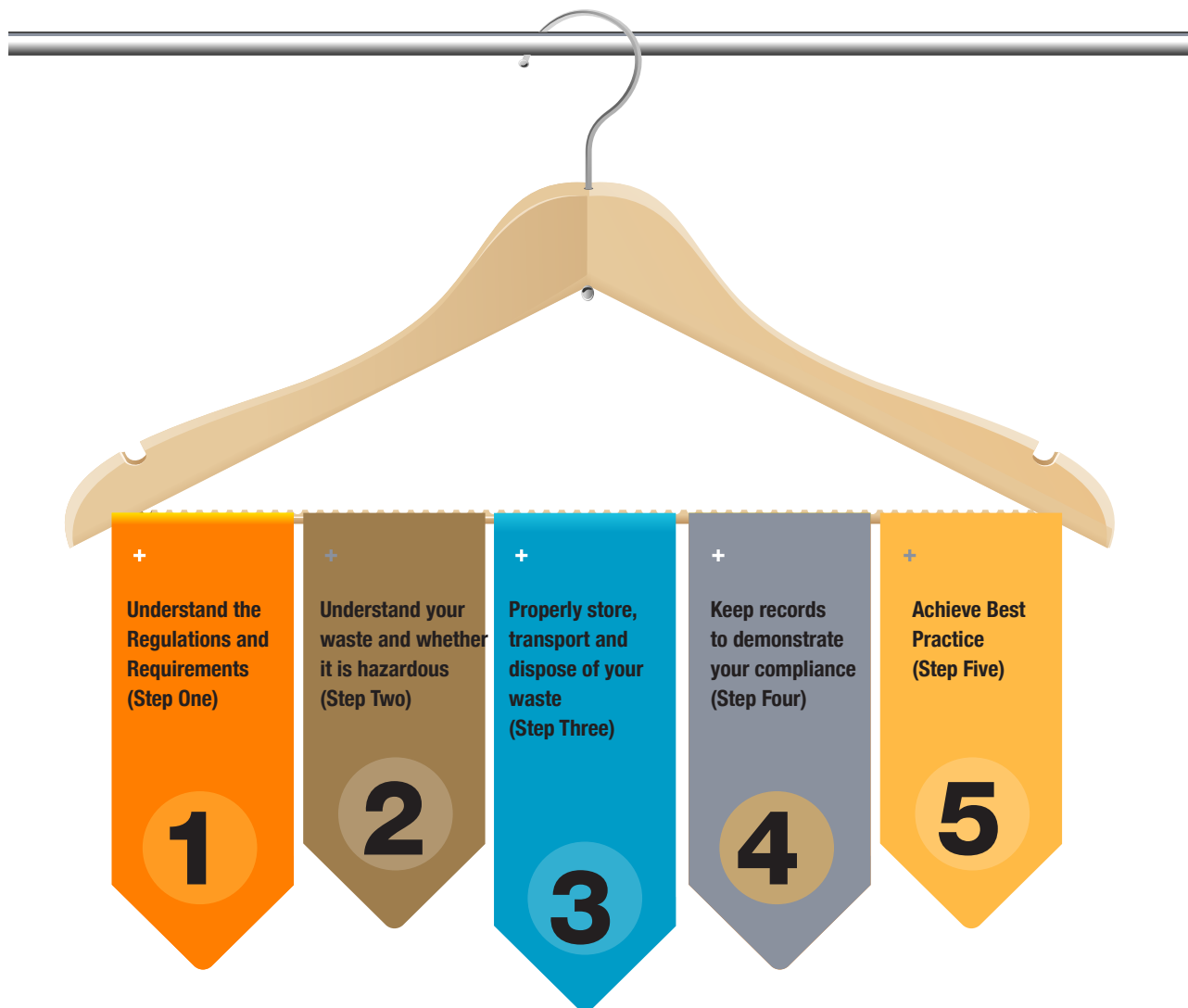
*In brief:*

- You must find out if your waste is hazardous, this is done by following the EPA Victoria guidelines for categorising solid industrial waste.
- If your waste is hazardous, there are specific requirements on how they should be managed.

### STEP THREE: Properly store, transport and dispose of your waste (refer to Pages 14 and 16 for more information)

*In brief:*

- Once you understand your waste, your options are:
- Category A waste must be treated (banned from landfill)
  - Category B or C waste may go to a landfill
  - Industrial waste may go to a landfill
- Pages 14 and 16 explain the minimum and best practice requirements for storage and management of dry-cleaning waste in Victoria.



**STEP FOUR: Keep records to demonstrate your compliance** (refer to Pages 14 to 16 for more information)

*In brief:*

- Maintaining records as recommended in the Manual will help you to:
  - Comply with the requirements of the Victorian waste regulations
  - Demonstrate your compliance, if inspected by an EPA authorised officer
  - Identify any significant changes in solvent use and waste generation (which may indicate problems such as leaks from your machine)

**STEP FIVE: Achieve best practice** (refer to Pages 18 to 21 for more information)

*In brief:*

- Best practice aims to produce superior outcomes, and means going beyond the minimum requirements, and taking steps to regularly improve management methods.
- Adopting best practice will help you to reduce overall waste quantities and improve recovery and will also help to minimise the risk of polluting the environment and impacting human and environmental health.



**"KEEP RECORDS" SYMBOL**

You will see this symbol throughout the Manual, wherever we recommend that you keep records. Keeping records will assist you to demonstrate compliance, if you are inspected (refer to Step Four for further information).

# STEP 1:

## Regulations and Requirements



All drycleaners produce waste. Many of the chemicals and solvents used by dry-cleaners have characteristics which make them capable of harming humans and the environment, for instance some are toxic or combustible. Because dry-cleaning wastes contain solvent, this means that many dry-cleaning wastes are hazardous.

If hazardous dry-cleaning wastes are not sent to the right place, they can end up in the environment, where they can cause harm to humans and damage soils and water supplies. Due to the nature of many drycleaning solvents, they can be very difficult (and expensive) to clean up.

It is for this reason that the Victorian Government regulates hazardous waste (called *Prescribed Industrial Waste*). Environmental regulations (specifically the *Environment Protection (Industrial Waste Resource) Regulations 2009*) are just one of many measures that the Government uses to protect our environment. Hazardous wastes are regulated to ensure that these harmful materials are strictly controlled, to minimise the risk of them harming human health and the environment.

## Why is this important?

As a dry-cleaner, you have a responsibility to understand the environmental regulations relevant to drycleaning waste. This is a requirement under Victorian law, and understanding the regulations will help you ensure that you fulfil all of your obligations under the regulations.

Mis-management of hazardous waste is a serious problem. Businesses that do not manage their waste properly are at risk of:

- **Polluting the environment** – which can harm humans, animals and the environment, and lead to expensive clean-up costs
- **Non-compliance** – which can lead to large fines and criminal convictions

## Cleaning up your act - toward best practice

If you are a dry-cleaner, it is your responsibility to understand EPA Victoria's regulations, to find out if your waste is hazardous and to ensure that you comply with the regulations. The sections below will help you understand the key requirements relevant to management of dry-cleaning waste in Victoria.

## Your duty of care

All businesses, organisations, governments and individuals have a responsibility to comply with the law, which includes environmental regulations. Everyone has a duty of care to protect the environment and human health to ensure that their activities do not impact the environment, to ensure that we pass a clean and safe world to future generations.

Dry-cleaners share this duty of care to protect the environment and human health and to not cause harm. Businesses also have a responsibility to ensure that they act ethically and do not have a negative impact on society.

## Summary of Victorian hazardous waste Regulations

In Victoria, hazardous wastes are regulated under the *Environment Protection (Industrial Waste Resource) Regulations 2009* (refer to page 26), referred to as 'the regulations' throughout this Manual.

In simple terms, the regulations require dry-cleaners (and any other business that creates waste) to:

- Consider opportunities for avoidance, reduction, reuse, recycling, treatment or reprocessing of waste BEFORE disposal (see below)
- Decide if the business produces hazardous waste, and what category of hazardous waste
- If the business produces hazardous waste, manage it in accordance with the Victorian hazardous waste regulations, including:
  - Arrange for the removal of hazardous dry-cleaning waste by a permitted transporter (permitted vehicle and licenced facility)
  - Ensure the hazardous dry-cleaning waste is treated by an appropriate facility

The best way to approach this is to assume that your waste is hazardous, unless you can prove otherwise.

These are only the key, minimum requirements which may be relevant to dry-cleaners. You can see the regulation requirements in full in the EPA Victoria Industrial waste resource guidelines (see page 26).

Steps Two and Three will help you decide if your waste is hazardous and where it should be sent for treatment or disposal.

## Avoiding waste

The easiest way to reduce the costs associated with dry-cleaning waste is to avoid or reduce waste, and you are obliged to do this where possible under the regulations (see the EPA Victoria Industrial waste resource guidelines on page 26). This may seem like an impossible task, but you would be surprised at how many things you can do to avoid and reduce your waste. Some methods of reducing wastes include:

- Installing new equipment or upgrading fixtures on your machine can greatly improve your solvent recovery, and reduce the waste you produce.
- Improving other business practices, such as cleaning of stills, can also greatly improve efficiencies and reduce wastage (refer to Step Four for further information).
- Avoid mixing non-hazardous waste with hazardous ones. For example, do not put rags in the same container as your still waste, as the entire contents then must be treated as hazardous (which will increase your waste costs).

For any waste that cannot be avoided, you should follow the waste hierarchy to manage your waste. The waste hierarchy is shown below and shows the preferred order of steps you should follow to manage your waste (i.e. avoid, reduce, reuse, recycle, treat THEN dispose).

### The waste hierarchy





## What is PIW?

In Victoria, hazardous waste is called *Prescribed Industrial Waste* (PIW). These wastes need a higher level of control because they are potentially hazardous to humans or the environment. They must be managed in accordance with the regulations.

The term hazardous is used throughout this Manual for simplicity. Refer to Step Two for help deciding if your waste is hazardous.

## Dry-cleaning waste and liability

Under Victorian law, the business that creates hazardous waste is responsible for making sure that it goes to the right place once it leaves the business' premises (whether that is for recovery, treatment or disposal). This means that even if you have paid a contractor to transport and manage your waste, you (the producer) are still liable for the waste even after it leaves your store. If your waste is not managed appropriately (for instance, dumped illegally), you could be liable. As well as following the other requirements detailed in this Manual and under the regulations, it is very important that you:

- research your waste transporter (to understand their environmental record)
- ask your waste transporter where your waste goes
- ask to see your waste transporter's permit to transport hazardous waste

## It is against the law!

NEVER dispose of hazardous dry-cleaning waste (including separator water)

- To general waste (rubbish bin)
- To the sewer (sink or toilet)
- To stormwater (drain)
- To an unpermitted vehicle or unlicensed facility

Disposing of waste in these ways can lead to pollution of the environment, which will have serious social and economic impacts because this can be very difficult to clean up.

EPA Victoria can investigate dry-cleaners and can fine or prosecute businesses and/ or individuals where non-compliance is identified, and if you are found to have polluted the land you would be liable for clean-up costs. Refer to Step Three for further information on proper storage and disposal methods.

## Penalties apply!

Example offence	Current penalty (2014-15)
Illegal dumping	Up to \$738,050 (continuing offences can incur a daily penalty of \$177,132)
Pollution of land	Up to \$354,264 (continuing offences can incur a daily penalty of \$177,132)
Illegal transport of PIW (hazardous waste)	Up to \$354,264

Note that penalties are set by the Treasurer of Victoria for each financial year and are likely to increase. Refer to the link on Page 26 for updated information.





## STEP 2:

# Dry-cleaning solvents and wastes



As outlined in Step One, all dry-cleaners are required to find out if their waste is hazardous, and then ensure that the waste is managed appropriately. Depending on your operations, there is potential for any and all of the wastes that you produce to be hazardous, and, if they are, then there are specific requirements on how they should be managed. This section will assist you in deciding whether your waste is hazardous, based on the solvent that you use.

## Why is this important?

Although there are a number of alternative solvents on the market, most dry-cleaners still use perc<sup>1</sup> as their primary solvent. Dry-cleaners using perc produce hazardous waste. There is evidence that some drycleaners do not dispose of their waste safely and may not be complying with the Victorian Government's laws and regulations.

Also, some dry-cleaners may understand that their still waste is hazardous, but may not realise that many other wastes they produce are also hazardous. Therefore, even if you believe that you are already doing the right thing, it is important that you read this section, as there may be additional wastes which you have not considered before.

In addition, several alternative solvents (the most common solvents are listed in the Table on page 11) have become available over the past few years. Not all users of these newer solvents understand whether their waste is hazardous, and therefore are at risk of not complying with the regulations.

## Cleaning up your act - toward best practice

If you are a dry-cleaner, it is your responsibility to understand the solvent that you use, and whether the waste you produce is hazardous.

In Victoria, certain industrial wastes are determined to be hazardous for a number of reasons, and drycleaning wastes tend to be hazardous for the following main reasons:

- The waste is liquid (there are no landfills in Victoria licenced to accept liquid waste)
- Because the waste shows a certain hazardous characteristic (e.g. explosive, flammable, corrosive, toxic)
- The waste contains concentrations of contaminants above certain limits

EPA Victoria has guidelines which producers of industrial waste must follow to determine if their waste is hazardous and all dry-cleaners are required to follow these guidelines (refer to page 26).

The table on the following page has been prepared as a quick reference guide, to assist you in deciding if your waste is hazardous. If your waste is not listed in the table, it may still be hazardous. In this case, you should follow EPA Victoria's guidelines for categorisation of industrial waste (EPA Victoria Publication IWRG631, refer to page 26). Once you have decided whether your waste is hazardous, refer to Step Three for advice on how to store, transport and manage your waste.

<sup>1</sup>Perc is an industry term for Tetrachloroethylene, also known as Perchloroethylene or tetrachloroethene.



# Is your waste hazardous?

All dry-cleaners produce waste that is potentially hazardous, and are required to assess their waste according to EPA Victoria's guidelines. There are four waste categories: hazardous (categories A, B, C) and industrial waste (IW) – and the category decides where your waste should go for treatment or disposal. The safest way to approach this is to assume that your waste is hazardous, unless you can prove otherwise. The following table is intended to act as a guide on how to decide whether your waste is hazardous and where it should go.

**Table 1 - Is your Waste Hazardous?**

Waste that is likely to contain residues of:	What characteristics can make this waste hazardous?	What you should do
<ul style="list-style-type: none"> <li>• Perc<sup>2</sup></li> <li>• Hydrocarbon solvent</li> <li>• Siloxane (e.g. GreenEarth®)</li> <li>• Acetal (e.g. Solvon K4)</li> <li>• Other solvents</li> <li>• Oil, grease, dirt, other residues (from garments)</li> </ul>	<ul style="list-style-type: none"> <li>• Potential contaminant concentrations above EPA Victoria thresholds</li> <li>• Toxic substance</li> <li>• Waste may be liquid</li> </ul>	<p>For all waste types:</p> <ol style="list-style-type: none"> <li>1 Avoid or reduce your waste as much as possible, then follow the waste hierarchy (see page 7)</li> <li>2 Determine the hazard category (see p.12) – or assume a “worst-case” scenario and treat your waste as Category A</li> <li>3 Refer to Steps Three and Four</li> </ol>

## Important

If your waste is identified as hazardous, the following waste materials may therefore be hazardous. Refer to Step Four for acceptable methods of transport and disposal of hazardous waste.

Likely hazardous wastes:	<p>ALL materials that contain or may have contacted solvent, including:</p> <ul style="list-style-type: none"> <li>• Distillation residues (still waste, sludge)</li> <li>• Cooked powder residue (muck cooker residues)</li> <li>• Spent filter cartridges</li> <li>• Spent activated carbon or carbon filters</li> <li>• Empty containers</li> <li>• Lint, contents of filters</li> <li>• Contents of button trap</li> <li>• Waste from clearing out stills (e.g. rags – unless cleaned, refer to Step Three)</li> <li>• Spent (out of date) solvent</li> <li>• Untreated separator water (refer to Step Three)</li> <li>• Waste from water separator cleaning</li> </ul>
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<sup>2</sup>Perchloroethylene, tetrachloroethylene



## Determining the hazard category of your waste

There is a process to determining the hazard category of your waste, which will help you decide if it is Category A, B, C or Industrial Waste. You can assume a “worst-case” scenario and treat your waste as Category A. Category A has the highest potential to contaminate, the highest level of control and therefore the highest associated waste management costs.

To be more certain of the hazard category of your waste, there is a process to follow which is detailed in EPA Victoria guidelines for categorising solid industrial waste (see page 26). While there are costs involved in completing this process (e.g. laboratory costs), there is potential for the hazard category to be lower than Category A. There are a greater number of options for treatment and disposal of Category B and C wastes, which tend to have lower fees. It is possible for a group of similar dry-cleaners (e.g. that use the same solvent, and have similar operational conditions) to work together to categorise their waste. You should contact EPA Victoria for advice on this; the DIA may also be able to provide assistance on the process, and liaise with EPA Victoria on your behalf.

### Spotting agents



## Separator water

All separator water contains small amounts of solvent. If your waste is hazardous, your separator water is also hazardous, and must be either treated on-site or removed by a permitted transporter (refer to Step Three).

## Spotting agents

Most dry-cleaners use spotting agents as a pre-treatment or post-treatment to aid in stain removal. It is important to note that some of these spotting agents contain chemicals which could make your waste hazardous (e.g. perchloroethylene).

This means that, even if you have proven your waste to be nonhazardous, use of these spotting chemicals could cause your waste to be hazardous. If you use spotting agents, you should either assume your waste is of the highest hazard category, or follow EPA Victoria's guidelines for categorisation of industrial waste (refer to page 26).

Best practice is to minimise as far as possible the amount of spotting chemicals you use prior to drycleaning.



Poor practice - waste is not contained



Best practice - waste is stored within a bund/ spill tray



## STEP 3:

# Waste storage, transport, recovery & disposal

Once you understand your waste, it is important to know what options there are for treating, recovering or disposing of your waste and, importantly, how you should store the waste before you send it on to its next destination. This section outlines proper storage practices and management options for dry-cleaning waste.

## Why is this important?

All wastes have the potential to pollute our environment. Improper storage, transfer and disposal of waste can lead to spills and discharges, which can pollute not only your own property, but also neighbouring properties. This would have a big impact on the people that live or work there. Contamination of land can lead to millions of dollars of clean-up costs and legal fees. There are also additional social costs in the loss of reputation amongst the community, not just for you but also for the wider dry-cleaning industry.

It is important to follow proper procedures for storing, handling and transporting wastes. Risks can be reduced by following the practices described in this manual.

## Cleaning up your act - toward best practice

The waste management requirements you need to comply with depends on whether your waste is hazardous and the hazard category of your waste (see Step Two). As shown in the Table on page 11, many dry-cleaning wastes are

Category A hazardous waste in Victoria, which means they are banned from landfill. These wastes must be treated by a licenced facility capable of treating them. The sections below explain the minimum and best practice requirements for storage and management of dry-cleaning waste in Victoria.

## How should waste and separator water be stored?

Almost all liquids can cause pollution if they are not properly stored, and dry-cleaning wastes and separator water can be particularly dangerous.

The minimum requirements for storage of all dry-cleaning wastes and separator water storage are:

- closed, sealed containers
- separate from other chemicals
- under cover, to prevent rusting
- away from drains and sewers
- away from extreme heat
- clearly labelled (see below)

Some dry-cleaning solvents and chemicals, such as perc, are classified as dangerous goods. If this is the case, you should follow the relevant requirements of the *Dangerous Goods (Storage and Handling) Regulations 2012* (see page 26) for storage of your solvent and wastes.





As solvents (particularly perc) can seep through concrete use of bunding (storage of solvents and chemicals within a solid, impermeable container or tray) is considered best practice (see below).

Containers should be inspected regularly for leaks, and it is a requirement under the regulations that hazardous waste be provided to permitted transporters in a container that will not spill or leak. It is considered best practice to maintain detailed records that track waste quantities and condition of the containers (see Step Four).

**IMPORTANT: There are manual handling issues associated with large (200L) waste storage drums. If using these drums, collectors prefer them to be a maximum of ¾ full. Best practice is to use smaller (e.g. 10-15L containers).**

## Bunding

It is considered best practice to store all solvents and wastes in a contained spill tray or banded area, to prevent any leaks or spills from escaping. EPA Victoria has Bunding Guidelines (see page 26) which you can follow. For storage of small amounts of waste, the following bunding is recommended:

- Plastic tray or tub (chemically resistant polyurethane)
- Metal tray (stainless steel)

Trays or tubs used for bunding should be as large as the solvent or waste stored in them.

**IMPORTANT: Some solvents (for instance perc) can seep through concrete, therefore storing solvents and**

**waste in a concrete area is not enough to contain leaks or spills. Best practice is to store all wastes in a bund, in addition to a concrete floor surfacing.**



## Managing your dry-cleaning waste

If you follow EPA Victoria's guidelines for categorising waste (see Step Two and page 26) and find that your waste is not hazardous, it may be disposed with general waste.

However, dry cleaning wastes that are found to be hazardous waste must be managed appropriately as per the requirements below. This includes still waste and sludges, lint, filters and all items listed in the Table on Page 11.

As outlined in Step Three, the hazard category of your waste decides where your waste should go for treatment or disposal.

The management options for each category are summarised as follows (also refer to EPA Victoria's *Solid Industrial Waste Hazard Categorisation and Management*, see page 26):

- Category A waste cannot go to landfill (must be treated by a facility licenced for that type of waste)
- Category B or C waste may go to a landfill (must be licensed for that type of waste)
- Industrial waste may go to a landfill (must be licensed for that type of waste)



Example of bund/ contained spill tray

The minimum requirements for on-site storage, transport and management of hazardous dry-cleaning waste are:

- Ensure all waste containers are stored in accordance with the requirements listed above
- Ensure all staff are properly trained and familiar with this manual
- Ensure that you have a spill kit on site and that all staff are trained on how to use it
- Ensure all wastes are transported by an EPA permitted transporter
- Ensure all wastes are treated, recovered or disposed of at a licenced facility that is capable of processing your waste stream

As outlined on page 8, you are liable for your waste even after it has left your store. Make sure your waste contractors are permitted or licenced to receive your waste. Ask for and keep a copy of your waste collector's EPA permit, to help you demonstrate your compliance.

Best practice is to employ techniques to maximise your solvent recovery and minimise your waste, these are further detailed in Step Five. It is also best practice to maintain detailed records tracking solvent purchases and waste quantities removed from your dry-cleaning store (see Step Four). These records will help you demonstrate your compliance, should you be inspected by an EPA authorised officer.

**IMPORTANT: Cleaning rags and other objects should not be included with your still waste. They can interfere with processes at the facility that treats your waste, and you may be charged additional fees if rags or foreign objects are discovered in your waste. Best practice is to clean these rags in your machine, in the last load prior to cleaning out your still. The rags can then be reused, or disposed with the general waste.**



## Managing Your Separator Water

Separator water comes from various parts of the dry-cleaning process (from cleaned garments, still cleaning, liquid detergents). Even if your machine has two water separators, your separator water will contain a small amount of solvent (if using perc, it will be approximately 150 mg/L), which will usually be above the limit allowed by local water authorities (for instance, most water authorities have a limit of 1 mg/L for perc).

There are three main options for managing your separator water:

- Removal by an EPA permitted waste transporter for treatment as a hazardous waste (Best Practice)
- Treatment with a water treatment unit (e.g. carbon filter) and then discharge via sewer to a wastewater treatment plant (this requires a trade waste agreement)
- Evaporation – this method requires use of an activated carbon system or equivalent, prior to evaporation.

You should NEVER discharge separator water to an on-site septic system, to stormwater (outside drain), to the ground or to the public sewer system (without obtaining a trade waste agreement and abiding by that agreement).

If you have a trade waste agreement with your local water authority, then you may be able to discharge your separator water to sewer. You will most likely need to implement on-site waste water treatment equipment to reduce solvent concentration in your separator water prior to discharge. You should operate and maintain the machine in accordance with the manufacturer's recommendations. Regular analysis of the solvent content of your separator water may be required.

You should operate and maintain the machine in accordance with the manufacturer's recommendations. Regular analysis of the solvent content of your separator water may be required.

Best practice is not to discharge separator water to sewer and instead to collect it and send for treatment by a facility capable of treating hazardous waste.

## How should waste and separator water be Labelled?

Some dry-cleaning solvents are classified as toxic, this includes perc. Where this is the case, your waste must be handled as toxic, and all drums or containers storing solvent waste must be labelled as required by *Australian Standard: The storage and handling of toxic substances* (AS/NZS 4452:1997, see page 26).

If your waste is hazardous, it is recommended that all waste containers be labelled, clearly indicating the nature of the contents. Your permitted waste transporter will be able to assist you with this, they will generally have a preferred labelling method and may provide you with these as part of their service.





Separation water is shown here stored outside of the machine's bunding. Best practice is to store separation water inside a bund or spill tray.



## STEP 4:

### Record Keeping

Maintaining records is an important aspect of all businesses, however it is even more important if you produce hazardous wastes.

This section outlines the minimum and best-practice record-keeping procedures for all dry-cleaning operations.

### Why is this important?

Maintaining records as recommended in the Manual will help you to:

- Comply with the requirements of the Victorian waste regulations
- Demonstrate your compliance, if inspected by an EPA authorised officer
- Identify any significant changes in solvent use and waste generation (which may indicate problems such as leaks from your machine)

### Cleaning up your act - toward best practice

You should maintain records of all solvent purchases and all disposal and recycling services you use to collect and transport your waste and separator water.

Your solvent and waste records should include (at a minimum):

- Date of solvent purchase/ waste transfer
- Type of material
- Volume of material
- Details of the company collecting the material

Machine maintenance is closely related to solvent recovery and waste production – the better maintained your machine is, the better your solvent recovery will be. It is therefore important that you regularly maintain your machine (at least to the manufacturer's recommendation) and keep maintenance records.

Maintenance records should include (at a minimum):

- Inspection date
- Inspection notes
- Repairs conducted or components replaced

The following pages present some generic templates for these records. If necessary, these can be modified to suit your operation.

Victorian waste regulations require that all documentation relating to hazardous waste transport is kept on site for at least 2 years to help you to demonstrate your compliance, should you be inspected by an EPA authorised officer. It is considered best practice to maintain all records of solvent purchases, maintenance, waste generation, transport and disposal for 7 years or more.



## Record keeping templates

### Table 2. Solvent purchase/ Waste Collection Example Form

[illegible]

## Record keeping templates

### Table 3. Waste Collection Example Form

[illegible]



## Record keeping templates

### Table 4. Inspection & Maintenance Records example form

[illegible]

## STEP 5: Achieve Best Practice

Best practice represents the current 'state-of-the-art' and aims to produce superior outcomes. Best practice means going beyond the minimum requirements, taking all possible steps to prevent pollution of land and groundwater, taking steps to regularly improve management methods, and replacing ageing technology with more efficient and effective equipment.

When considering dry-cleaning waste management, there are a number of best practice methods which can be implemented which will help you to reduce overall waste quantities and improve recovery. Adopting best practice will also help to minimise the risk of polluting the environment and impacting human and environmental health.

### Why is this important?

Adoption of best practice dry-cleaning waste management can:

- minimise the risk of prosecution
- reduce your emissions and usage of solvent
- reduce waste quantities and costs
- reduce environmental and social risk
- improve operational efficiencies

Businesses that adopt best practice waste management methods now will be better prepared to demonstrate compliance, by showing that they have gone above and beyond the minimum regulatory requirements. Additionally, many of these methods will help minimising your solvent usage and reduce costs.

### Cleaning up your act - toward best practice

The techniques and procedures described below are considered best practice for dry-cleaning waste management. There are no requirements to implement these methods, but they may help you reduce your waste and improve your consumption of solvent. This may in turn reduce your business costs.

As time passes, there will be advances in available solvents, technology and methods and it is important to keep yourself informed of new developments because continuous improvement is part of best practice.

### Machine type

You are under no obligation to change to a newer machine. However, if you are on the point of replacing your machine, there are a number of things you should consider which may help you reduce your solvent use and waste generation, and your business costs in the long run.

Consider the following when selecting a new machine:

- **Solvent type** – there are a range of alternatives to perc on the market, each have advantages and disadvantages. Ensure that you inform yourself on all aspects (cleaning power, toxicity, waste management requirements, emissions etc) before making a decision.



- **Machine type** –newer models are now closed-circuit machines (fourth and fifth generation machines), which means that the solvent is condensed from the drying air inside the machine, using refrigeration and often carbon adsorption. There is no venting to the atmosphere. The latest dry-cleaning machines (fifth-generation) are now equipped with additional solvent recovery measures including an inductive fan, internal solvent vapour monitoring devices and lockout devices that will not allow access to the machine until solvent vapour concentrations are below a certain level. This means that upgrading to a newer machine can help you reduce the amount of solvent lost to air emissions.

## Cleaning of stills

The following steps are considered best practice for cleaning of stills:

- Still residues should be cleaned out at least twice a week. This frequency is recommended so that modern detergents, which are biodegradable, are removed after a short period.
- Ensure that the still has been allowed to dry for at least one hour
- Ensure that the still has been cooled as much as possible prior to cleaning – overnight if possible
- Transfer the still residue into a closed container, ideally via a closed circuit fitting

## Changing filters

Another source of waste is disposable filters. There are two main types of filters used on dry-cleaning machines: disc filters or cartridge filters. Most older machines use cartridge filters, which either use filter aid (diatomaceous earth or silica) or paper or carbon. Modern disc filters do not need any filter aid and can be cleaned (or regenerated) without opening.

Best practice is to use filters that can be regenerated rather than disposable filters.

However, if your machine uses cartridge filters, the following steps are considered best practice for changing spent filter cartridges:

- Ensure that your machine's pressure has reached the value recommended by the manufacturer, before changing the filter
- Remove the filter contents to your machine's still
- Leave the filter to drain overnight
- Remove the filter, place into your machine and run through a drying cycle (must be a manual cycle for drying without mechanical action)
- Remove the filter, store in a sealed, labelled plastic bag.
- If your waste is hazardous, dispose of your filter to a facility licenced to treat hazardous waste.

Some machines use powder filtration systems, these machines produce wastes referred to as cooked powder residues, or "muck". These wastes may be hazardous, refer to Step Two for how to decide this.

Best practice is to store still waste within a bund (such as that shown below) at all times.





## Maintenance

Waste storage areas should be inspected regularly to:

- ensure that all waste containers are in good condition (no cracks, leaks, seals/ lids are intact)
- ensure that all areas where wastes are stored are in good condition (floor or bund surfaces are free of cracks)

Dry-cleaning machines should also be maintained on a regular basis – improper machine maintenance may reduce your machine's ability to recover solvent and may increase your waste, increasing your overall business costs. Follow the manufacturer's instructions on recommended frequencies for each required maintenance task.

## Containment

Containment measures are actions that you can take to prevent solvent and waste being released to the environment. The following are considered best practice:

- Ensure that there are no drains near your machine, your solvent and waste storage areas or any area where you handle solvent.

- Keep all containers closed when not in use and particularly when moving containers. This includes containers holding solvent, waste and separator water, even if only partially full. Spent cartridge filters (where used) should be stored in sealed bags or containers.
- Do not store large quantities of waste or solvent, this increases your risk of spillage. Keep the number of solvent and waste drums stored to a minimum.

## Solvent recovery and recycling

There are a number of operations incorporated into the dry-cleaning process aimed at maximising the recovery and recycling of solvent, including:

- Condensing units
- Carbon adsorption units

If your machine does not incorporate these units, there may be an opportunity to install add-on units. These can greatly improve your solvent recovery, which will reduce your waste and solvent use in the long run.

Speak to your machine supplier for further information.







04-33970

02-34801

02-33991

Item: 04-33970  
Description: Pattern: 2  
FR

DO NOT REMOVE  
THIS LABEL  
FROM SMALL CHILDREN'S  
CLOTHING  
ITEMS TO BE ATTACHED TO  
CLOTHING



# CONTACTS AND RESOURCES

## Additional Information



If you have questions or need help on anything covered in this Manual, the following organisations are able to provide assistance.

### **Industry Association**

Drycleaning Institute of Australia (DIA)  
<http://www.drycleanersweb.com.au/>  
1300 134 511

### **EPA Victoria Enquiries**

<http://www.epa.vic.gov.au/>  
1300 372 842

### **Occupational Health & Safety**

<http://www.vwa.vic.gov.au/>  
1800 136 089

## Reference documents and websites

### **EPA Victoria Industrial Waste Regulations**

<http://www.legislation.vic.gov.au/>

Relevant Acts and Regulations (including the Environment Protection Act 1970 and the Environment Protection (Industrial Waste Resource) Regulations 2009) are available for viewing and download.

### **EPA Victoria Industrial Waste Resource Guidelines**

<http://www.epa.vic.gov.au/business-and-industry/guidelines/waste-guidance/industrial-waste-resourceguidelines>  
Includes guidance on how to comply with EPA Victoria regulations for industrial waste.

### **Introduction to the Environment Protection (Industrial Waste Resource) Regulations 2009**

<http://www.epa.vic.gov.au/our-work/publications/publication/2009/july/iwrg100>

### **EPA Victoria Waste Categorisation**

<http://www.epa.vic.gov.au/our-work/publications/publication/2010/december/iwrg600-2>

Includes guidance on waste types and hazard categorisation for both solid industrial waste and soils.





#### **EPA Victoria Prescribed Industrial Waste (PIW) Classifications**

<http://www.epa.vic.gov.au/business-and-industry/guidelines/waste-guidance/prescribed-industrial-wasteclassifications>

Includes guidance on classification of hazardous waste (PIW).

#### **EPA Victoria Solid Industrial Waste Hazard Categorisation and Management (IWRG631)**

<http://www.epa.vic.gov.au/our-work/publications/publication/2009/july/iwrg631>

Guidance on categorisation of solid industrial waste.

#### **EPA Victoria Bunding Guidelines**

<http://www.epa.vic.gov.au/our-work/publications/publication/1992/december/347>

Guidance on secondary containment systems for liquids which, if spilt, are likely to cause pollution or pose an environmental hazard.

#### **EPA Victoria Fees and Penalties**

<http://www.epa.vic.gov.au/our-work/compliance-and-enforcement/fees-and-penalties>

The value of fee and penalty units is set by the Treasurer of Victoria for each financial year, and can be found here on the EPA Victoria website.

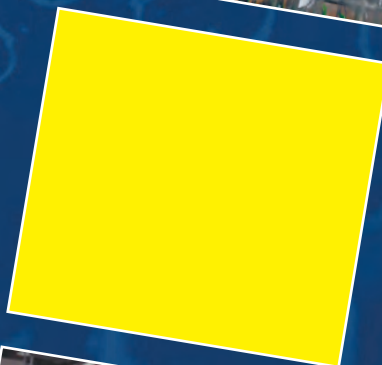
#### **Victorian Workcover Authority: Dangerous Goods**

<http://www.vwa.vic.gov.au/safety-and-prevention/health-and-safety-topics/dangerous-goods>

Includes guidance on how to comply with the Dangerous Goods (Storage and Handling) Regulations 2012

#### **Australian Standards: SAI Global**

<http://infostore.saiglobal.com/store/>



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