



## Working safely with embalming products



Embalming products are hazardous and are regulated under the hazardous substances legislation (HSNO).

Embalmers need to be aware of the dangers of the products they use and how to safely manage them. In general, hazardous products should be handled by qualified people.

Embalming products are primarily solutions and mixtures containing:

- formaldehyde
- paraformaldehyde
- glutaraldehyde
- methanol
- phenol.

These products may be flammable, toxic or corrosive, which make them harmful to human health. They may also be toxic to the environment. Because of the dangers associated with using embalming products they must be used and stored with care.



This document has been written for an owner or manager of a funeral home and provides information about how to safely manage the embalming products you use at work.

It also gives you information about what you need to do under the Hazardous Substances and New Organisms Act (HSNO) in some general situations.

To work safely with embalming products you need to make sure that you comply with HSNO.

## Embalming products regulation

Embalming products with hazardous properties are regulated under HSNO based on the risks they pose to people and the environment. The hazardous properties of a product are classified (put into groups) to determine how the risks can be managed. Most hazardous products have more than one hazardous property and therefore have more than one classification. For example, embalming fluids containing formaldehyde have flammable, toxic and ecotoxic (damages the environment) properties.

Each new hazardous substance or product imported or manufactured in New Zealand must be approved and have its classifications defined. Most embalming products are approved under a group standard, which is an approval for a group of similar substances or products.

A HSNO approval sets out the rules (also called controls) based on the product's classification to manage the risks posed by that product.

To help you work out which key HSNO controls you need in place at your business, the EPA has developed a HSNO Calculator. The calculator is part of a multi-media toolbox, which has been developed to help small businesses work safely with hazardous substances. When discussing HSNO controls in this document we will let you know if the calculator can assist you.

The HSNO Calculator includes some commonly used substances as well as the group standards for embalming products.

You can access the HSNO Calculator through the Toolbox website: [www.hazardoussubstances.govt.nz](http://www.hazardoussubstances.govt.nz).

## Health effects of embalming products

Exposure to embalming products such as glutaraldehyde and formaldehyde can pose serious health risks to workers and can worsen existing health problems.

Formalin solutions contain formaldehyde, which is a highly hazardous substance. Paraformaldehyde, a powdered formaldehyde product, is also sometimes used in embalming processes.

Formaldehyde is highly toxic by inhalation, skin contact and by swallowing. Solutions containing formaldehyde give off formaldehyde gas, which is easy to breathe in, so effective ventilation at your funeral home is essential.



**Formaldehyde is known to cause cancer.**  
Protect yourself by having proper ventilation in place and wearing the right safety gear.

Breathing in formaldehyde can irritate nerves in the eyes and nose, while skin contact can cause rashes and allergic reactions.

Some embalming solutions may contain glutaraldehyde. Glutaraldehyde may be used in embalming products with or without formaldehyde.

Glutaraldehyde is also extremely toxic, can be fatal and must be handled with care.

Both formaldehyde and glutaraldehyde are harmful to human organs. Getting formaldehyde or glutaraldehyde-containing solutions in your eyes can cause serious damage including, in severe cases, blindness.

Acute effects on your health, such as eye, nose and throat irritation, can occur after single, large or repeated exposure. In some cases you may not notice an immediate effect but the effects may appear over a longer period of time. Long-term exposure to these embalming products can seriously damage your health and can lead to cancer or damage your internal organs.

Both formaldehyde and glutaraldehyde can cause sensitisation. When someone is sensitised to a hazardous substance, repeated exposure can lead to dangerous health conditions, such as asthma or dermatitis.

The chances of hazardous substances causing damage to your health depend on a number of factors, including:

- how toxic the substance is
- the amount of the toxic substance that you are exposed to
- the length of exposure
- how the substance enters your body (for example, skin absorption or inhalation)
- whether the substance is a liquid, vapour or powder.

It's essential that you and your staff understand the hazards associated with the products you use and protect yourself appropriately.



## What you can do to keep safe

### Prepare an inventory

The best way to manage your embalming products is to make a list (inventory) of all your hazardous products. What you need to do to comply with HSNO will depend on the embalming products and other hazardous products you use and how much you store at your funeral home. You also need to know the hazardous properties of each product.

The Hazardous Substances Toolbox provides you with a template and instructions for preparing an inventory – see [www.hazardoussubstances.govt.nz/workbook](http://www.hazardoussubstances.govt.nz/workbook).

### Make sure all your products are labelled

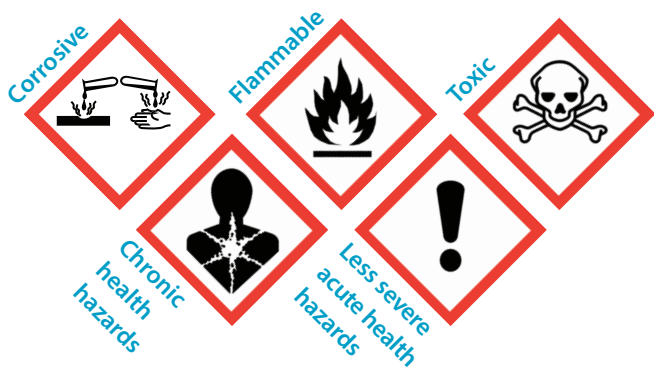
Every container holding a hazardous product must be labelled. The label will inform the user of the product's hazards and how to protect themselves.

Manufacturers and suppliers must sell products that are correctly labelled, but you must make sure that the label stays on the container and continues to be readable.

Unlabelled products may cause people to become confused about what product they are using resulting in them not taking the necessary safety precautions.

### Symbols on embalming product labels

An international system of product labelling has been introduced in a number of countries around the world. It is likely that more and more frequently you will see the following symbols on your products:



Less severe health hazards can include skin sensitisation, skin and eye irritation, respiratory irritation and drowsiness or dizziness.

Products with chronic health hazards can cause cancer or mutations, affect fertility, cause damage to an unborn child and cause allergies, asthma and breathing difficulties when inhaled.

If you would like a poster for your workplace that includes all of the symbols you may see on your hazardous products, you can order one on the Toolbox website. Click *Parts of the Toolbox* to order one at: [www.hazardoussubstances.govt.nz/toolbox](http://www.hazardoussubstances.govt.nz/toolbox).

### Get a safety data sheet from your supplier

The best way to learn about the dangers associated with the products you use is to check the safety data sheet for each one.

You need a safety data sheet for every hazardous product in your funeral home, not just embalming products. Ask your supplier for one if any are missing or if the safety data sheets you have are older than five years.

Safety data sheets include important information about first aid, safe storage, cleaning up spills and what personal protective equipment should be worn by people using that product.

Get a safety data sheet, learn about the dangers of using your products and talk to your staff about them. Let them know that taking shortcuts on safety puts themselves and their workmates at risk and simply isn't acceptable.



### Eliminate, isolate, minimise

As the business owner, you must identify the hazards in your workplace and take action to eliminate, isolate and minimise those hazards. The hazards from embalming products are no exception.

#### Eliminate hazardous products

Getting rid of hazardous products and replacing them with ones that aren't hazardous is the most effective way of protecting your health and the health of your staff.

Wherever possible you should replace very hazardous products with products that aren't hazardous. For example, you may be able to replace some products with ones that don't contain formaldehyde.

#### Isolate the use of hazardous products

It's generally difficult to isolate embalming practices away from people, so it's important that you take steps to eliminate hazardous products as discussed above, and minimise the risk as discussed on page 4.



If you can't eliminate formaldehyde-containing products you may be able to use products that have a lower concentration of formaldehyde.

## Minimise the risk from hazardous substances

### Clear the air

Many embalming products emit dangerous vapours and gases, which are harmful to your health.

Formaldehyde gas is heavier than air so it collects at the floor. Therefore, to protect embalmers working with embalming fluid or others who are in the surrounding area, ventilation systems must be installed below the embalmer's breathing zone.

Additionally, suitable respirators should also be worn to ensure exposure to embalming fluids is as low as possible.



Ventilation systems and respirators must be frequently maintained by someone with specialist knowledge – such as an occupational hygienist.

### Personal protective equipment (safety gear)

When you use or mix embalming products, you should always check the safety data sheet to find out what personal protective equipment (PPE) should be worn to minimise exposure as much as possible. Choose PPE that meets New Zealand and/or Australian Standards.

Typically, the type of PPE would include:

- chemical goggles or a face shield to minimise the risk of products splashing into the face or eyes
- overalls
- rubber boots
- a chemical resistant apron
- nitrile, neoprene or PVC gloves (latex gloves may not provide adequate protection against exposure to some hazardous chemicals, such as formaldehyde and/or glutaraldehyde - check your safety data sheet)
- respiratory protection specific to the type of vapour or gas (a dust mask does not protect against inhaling hazardous vapours).

The effectiveness of PPE is dependent on it being used correctly. If the wrong PPE is used, or it is not fitted correctly, it is unlikely to provide adequate protection.

You also need to make sure that staff are trained to use PPE and that it is maintained correctly and frequently, such as replacing respirator filters when they are due.



## Exposure management

Staff carrying out embalming procedures are frequently exposed to hazardous substances and therefore need to have their health monitored to make sure they don't suffer from temporary or permanent health damage.

Even funeral homes that have good ventilation in place and use the right PPE should make sure their staff undergo health monitoring.

Monitoring exposure helps you determine:

1. the controls and protective clothing needed
2. whether the control measures and personal protective equipment in place are sufficient.

Talk to an occupational health nurse or hygienist to help you do this correctly.

## Handling your products

### Approved handler test certificates

Because embalming products are highly hazardous, it's important that they are handled by people who have been trained to use them safely.

Many embalming products must be handled by, or under the supervision of, an approved handler who is responsible for them. An approved handler is someone who has specific knowledge and experience on how to use particular hazardous substances safely.

Whether you need an approved handler will depend on the type and amount of products stored at your funeral home.

### How to determine if you need an approved handler

To work out whether the products used at your funeral home need to be handled under the supervision of an approved handler, you can use the HSNO Calculator.

To use the calculator you need to prepare a detailed inventory of all of your hazardous substances using the Workbook found on the [www.hazardoussubstances.govt.nz](http://www.hazardoussubstances.govt.nz) website.

Once you have prepared your inventory the information can then be entered in the HSNO Calculator. The calculator will then work out whether or not you need approved handlers.

You can find the calculator on the [www.hazardoussubstances.govt.nz](http://www.hazardoussubstances.govt.nz) website.

Alternatively, you can check a product’s HSNO approval to determine whether it needs to be under the responsibility of an approved handler.

### Approved handler responsibilities

Products that are required to be under the supervision of an approved handler can be used by others as long as they have received guidance from the approved handler. In the case of highly toxic, carcinogenic or corrosive products, the approved handler must be present while the product is being handled. If the product is flammable, the approved handler does not need to be present but needs to be available to provide assistance, if needed.

The approved handler must also be present when hazardous products are being delivered to the funeral home unless the products are being delivered into a store that will be locked after delivery.

It makes sense to have at least two approved handlers available to cover for absence and sickness.

### How to become an approved handler

An approved handler test certificate is issued by a test certifier. A test certifier is an independent service provider who has been approved by the Environmental Protection Authority (EPA) to issue test certificates.

To obtain an approved handler test certificate, you must demonstrate to a test certifier that you have:

- practical skills (competency) to safely handle and use the products
- knowledge of the products you will be handling
- knowledge of the HSNO legislation.

The evidence for this is usually a written record from a training provider or an assessment of practical handling skills and experience from a work supervisor.



A test certifier is an independent service provider approved by the EPA to issue test certificates.

There is a register of test certifiers on the EPA website. To find a test certifier in your area, go to [www.epa.govt.nz](http://www.epa.govt.nz). At the top of the homepage is a tab called *Search our Records*. Place your cursor on that tab and click on *HSNO Test Certifiers*.

## Storing embalming products

Embalming products should be stored securely and any leaks or spills contained to avoid harm to people, property or the environment.

Flammable embalming products must be stored in an approved metal cabinet, which will reduce any fire risk. The cabinet must conform to the standard set out in section 4.9 of *AS 1940: The storage and handling of flammable and combustible liquids* – ask your safety supplier for help. You may hold a maximum of 250 litres in containers of not more than 20 litres capacity in these cabinets.

### Separating products

Hazardous substances with different properties can cause a fire or explosion if they come into contact with each other. These substances are said to be incompatible. You need to store incompatible substances separately. The safety data sheet for each substance should identify which substances a particular substance is incompatible with.

The table below provides some general guidance about which substances and materials a particular hazardous substance should be kept away from.

### Incompatible substances – general guidance

Hazardous substance type:	Keep away from:
Flammable gases (class 2.1.1)	Flammable aerosols (class 2.1.2); flammable liquids (class 3); class 4 substances; oxidising substances or organic peroxides (class 5).
Flammable liquids (class 3)	Flammable gases and aerosols (class 2); class 4 substances; oxidising substances or organic peroxides (class 5).
Oxidising substances (class 5.1)	All other types of hazardous substances (including organic peroxides).
Organic peroxides (class 5.2)	All other types of hazardous substances (including oxidisers).



## Location test certificates

A location test certificate certifies that the place where hazardous products are used and stored is safely managed, according to the rules. Test certificates are issued by test certifiers.

If you hold more than a certain amount of embalming products that are classed as having a medium to high flammable hazard (such as cavity products, arterials and accessories), a location test certificate is required.

Given the regulatory requirements for the storage of flammable and toxic substances, your funeral home should take advantage of quick turnaround on deliveries and keep only the minimum quantities you need on site. This will reduce your compliance needs and costs.

You can check whether you need a location test certificate by using the HSNO Calculator.

## Controlled zones

A controlled zone is an area around a flammable substance where ignition sources must be controlled to prevent unintended ignition. Access within the controlled zone must also be limited to authorised people.

Generally, embalmers won't need to establish controlled zones beyond storing their flammable products in an approved metal cabinet.

However, if you have more than 250 litres, then more complex controlled zones will be required. Talk to your test certifier if you are unsure about what to do.

## Tracking embalming products

Very hazardous substances must be "tracked". Tracking means keeping a record of what happens to, and who is responsible for, an embalming product from when it is imported or manufactured, through to its distribution and transportation, use or disposal.

Your hazardous substance supplier will let you know if your substances need to be tracked and will ask if you are an approved handler. Tracked substances can only be sold to an approved handler. Alternatively, you can check the approval for your hazardous substance to determine whether it needs to be tracked.

## Approved handler responsibilities

A tracked substance must always be either under the personal control of an approved handler or secured under lock and key.

If a tracked product is transferred to a different place, the conditions and circumstances for the transfer must be recorded and an approved handler at the new place identified.

## Keeping tracking records

The employer of a site where tracked substances are used and stored is responsible for keeping tracking records.

Tracking records must be made available to an enforcement officer and must be written in a way that is easy to understand.

The records must be kept for 12 months after the substance has been transferred to someone else. When the substance is used, discharged into the environment or disposed of, the record must be kept for three years.

The tracking record must contain:

- the name and amount of the substance
- the exact location of the substance
- the name, position in the organisation and contact details of the approved handler in control of the substance
- details of any transfers of the substance to another location
- details of any use or disposal of the substance.

After each embalming, you should update your records to show how much tracked product was used. You also need to update your records every time there is a new delivery of a product so that you know how much is on site at any one time. Keep your records in a safe place where they can be easily accessed.

For further information about tracking, see the information sheet on our website: [www.epa.govt.nz](http://www.epa.govt.nz).

## Emergency management

Because of the flammable and toxic nature of embalming products, it's important that you are prepared for an emergency. To prepare, you need to know what hazardous products you have on site and how much of those products you have.

You must also make sure that your staff are trained to safely use hazardous products and know what to do in a hazardous substances emergency. They also need to know where any emergency equipment is kept and how to use it.

You can use the HSNO calculator to work out whether you need fire extinguishers, signs or a HSNO emergency response plan.

Alternatively, you can check a product's HSNO approval to determine whether you need any of these emergency management provisions in place.



Explosives 1	Hazard Symbols	Risk Number
Flammable Gas 2.1 including 2.1A & B	Flammable Gas	4
Flammable Aerosol 2.1 including 2.1.2A	Flammable Gas	4
Flammable Liquid 3.1 including 3.1A, B & C	Flammable Liquid	4
Liquid Desensitized Explosive 3 including 3.2A, B & C	Flammable Liquid	4
Flammable Solid 4.1 including 4.1.1 A, B & C - 4.1.2 A, B, C, D, E, F & G - 4.1.3 A, B & C	Flammable Solid	4
Spontaneously Combustible 4.2 including 4.2A, B & C	Flammable Solid	4
Dangerous When Wet 4.3 including 4.3A, B & C	Flammable Solid	4
Water Sensitive 5.1 including 5.1.1 A, B & C - 5.1.2 A	Water Sensitive	4
Organic Peroxide 5.2 including 5.2A, B, C, D, E & F	Organic Peroxide	4
Toxic 6.1 including 6.1A, B & C	Toxic	4
Toxic Corrosive 6.1 including 6.1A, B & C	Toxic Corrosive	4
Infectious Substances	Infectious Substances	3

## Fire extinguishers

HSNO requires you to have fire extinguishers when you have certain amounts of flammable or oxidising products. However, it is recommended that you always have at least one fire extinguisher available at your funeral home.

## Spills

Your funeral home needs to be prepared to clean up any spill of hazardous products.

You will need to identify what equipment and training will be needed so staff can safely and quickly contain, clean up, recover or dispose of spilled products.

To clean up a spill you should have a spill kit available. The spill kit should contain:

- personal protective equipment to protect the person cleaning up the spill
- spill handling equipment
- spill containment equipment like drip pans and drain guards or barriers
- absorbent material like absorbent pads
- a leak-proof disposal container to put the waste in once the spill has been cleaned up.

It's important that you check with your local and regional council to make sure that you are also complying with any resource management rules specific to your region.

## Spill response

➤ Until you know what you are dealing with, treat all spills as highly flammable and toxic.

**Raise the alarm** – It's important that you let your colleagues know about the spill before attempting any clean-up. If the spill is beyond your ability to clean up, call emergency services.

**Safety** – Before entering the contaminated area consider your safety. Address any obvious hazards such as turning off the power before cleaning up a flammable product to prevent sparks.

**Know your products** – Before cleaning up the spill read the safety data sheet for the spilled product. Look for warnings of flammability and toxicity.



**Assessing the spill** – Make sure someone has been alerted to your plans. Respond to the spill and if necessary, evacuate the area. Have safety data sheets available.

### Dealing with the spill –

- If it is safe, put on appropriate personal protective equipment and use your spill kit to contain the spill.
- Spread neutralising absorbent material from the spill kit on and around liquid spills.
- Sweep up powder or absorbent materials and place in a plastic bag.

## Signs

Whether you need signage will depend on the types and amounts of substances held.

Signs must be made out of a durable material and clearly show in plain English or in pictograms:

- that hazardous substances are present
- the type of hazard of each substance present
- precautions such as 'keep away' or 'no smoking'
- emergency actions such as "Call Emergency Services – Dial 111".

## Emergency response plan

Funeral homes are unlikely to need a HSNO emergency response plan. However, for the safety of your staff it's important that everyone knows what to do in an emergency.

A template of an emergency response plan, the *Emergency Procedures* flipchart, is available from the EPA. This flipchart helps you to have a basic emergency response plan with all of the necessary information kept in one place. You can order a free copy of the flipchart by calling 0800 376 234.



## How to check a product's HSNO approval

The *Controls for Approved Hazardous Substances* database on the EPA website gives information about the specific controls assigned to each approved hazardous substance.

Go to the EPA at [www.epa.govt.nz](http://www.epa.govt.nz). Hover over the last tab at the top of the homepage entitled *Search our Records*. At the bottom of the middle column click on *Controls for Hazardous Substances*.

In the box type in the HSNO approval number from your safety data sheet (often found in section 15).

If the substance has an individual approval the database will list all of the controls applicable to that substance. If the substance is approved under a group standard it will let you know which group standard to look up.



## Contacts for further information

### Your supplier

If you have questions about any of your products, check the safety data sheet and talk to your supplier.

### New Zealand Embalmers Association

Phone 06 877 1254, [www.nzembalmers.org.nz](http://www.nzembalmers.org.nz).

### Funeral Directors Association of New Zealand

Phone 04 473 7475, [www.funeralsnewzealand.co.nz](http://www.funeralsnewzealand.co.nz), email [info@fdanz.org.nz](mailto:info@fdanz.org.nz).

### Environmental Protection Authority

For information on complying with HSNO call our compliance information line during business hours on 0800 376 234, or email [hsinfo@epa.govt.nz](mailto:hsinfo@epa.govt.nz).

### Ministry of Business, Innovation and Employment

Phone the Ministry's contact centre on 0800 20 90 20 during business hours, or search the Frequently Asked Questions database at <http://dol.govt.nz/workplace/knowledgebase/healthandsafety>.

## Disclaimer

The Environmental Protection Authority (EPA) has made every endeavour to ensure the information in this document is accurate and current. However, this information sheet is a summary only and does not specify all of your compliance requirements. You need to check the controls that apply to the hazardous substances that you are responsible for.

For a full list of the controls that apply to embalming products refer to the relevant group standard approvals on the EPA website [www.epa.govt.nz](http://www.epa.govt.nz). The HSNO approval number (HSR) on your product's safety data sheet should tell you which group standard it belongs to.

If you find any information in this document that you believe may be inaccurate, or you would like to provide any feedback, please email [hsinfo@epa.govt.nz](mailto:hsinfo@epa.govt.nz).



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