



## CHEMICAL ALERT NOTICE 33- FURFURYL ALCOHOL

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This guide gives information on the health effects caused by exposure to furfuryl alcohol at work. It also gives advice on good practice, which suppliers, employers and users may find helpful in considering what they should do to reduce exposure.

### Is this guide for me?

Yes, if you use furfuryl alcohol at work. You may be using furfuryl alcohol as an ingredient in a product. If this is the case, it may be listed as one of the ingredients on the safety data sheet. The uses for products that contain furfuryl alcohol are:

1. In the manufacture of flavourings
2. As solvents for dyes and resins
3. In binding resins in foundry sand
4. As a laboratory reagent

If you use furfuryl alcohol in other applications that are not listed here, please let us know (contact details below).

### What is furfuryl alcohol?

Furfuryl alcohol is a colourless/yellow liquid with a faint burning odour. It is also known by the names: 2-Furanmethanol, 2-furylcarbinol, 2-furancarbinol and 2-hydroxymethylfuran. Its CAS number is: 98-00-0.

### Why issue a chemical alert notice (CHAN)?

Under the COSHH Regulations, furfuryl alcohol had the following Occupational Exposure Standards (OES):

8-hour time-weighted average (TWA)	5 ppm (20 mg.m <sup>-3</sup> )
Short term exposure limit (STEL)	15 ppm (61 mg.m <sup>-3</sup> )

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Recently, HSE has found that these OES's may not be adequate to protect your health at work. As a result, it has been decided to remove the limits. You should continue to control workplace exposure and this guide will give advice on the best ways to do that.

## How does it get into the body?

- By breathing in the vapour.
- By absorption of the liquid through your skin.
- By swallowing it. This can happen if you get it on your hands and then you put your hands, or something you have touched, to your mouth. For example, smoking or eating without washing your hands first.

## What are the key health effects?

We do not have very much information from humans about the effects of exposure to furfuryl alcohol. However, we can make some predictions, based on tests in animals.

The effects on your health will depend on how much you are exposed to, for how long and how often.

Short-term or immediate effects include:

- Irritation of the eyes and nose.
- Higher exposures can lead to toxic effects.

Long-term effects of repeated exposures include

- Damage to the air passages in the nose.
- Kidney damage.
- Cancer in the nose or kidney because of damage to these tissues.

Cancer due to exposure to furfuryl alcohol has not been proven to occur in humans. However, employers should treat the substance as though it did cause cancer.

## Reducing the risk

### What should suppliers do?

You should ensure that the information contained in this notice is passed on to your customers. This is a legal requirement under the Chemicals (Hazard Information and Packaging for Supply) Regulations 2002. You should take steps to review your safety data sheets to reflect the information in this CHAN.

### What should employers do?

The COSHH regulations require you to:

- Protect your employees and others who may be exposed to furfuryl alcohol.
- Assess the risks to your employees working with furfuryl alcohol.
- Prevent exposure to furfuryl alcohol, if it is reasonably practicable to do so.

To prevent exposure you might:

- Change the process or activity so that furfuryl alcohol is not needed or generated.
- Replace furfuryl alcohol with a safer alternative

If prevention is not reasonably practicable, you must adequately control exposure. To do this you should apply the principles of good practice.

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For this substance this means:

- You should control exposure very tightly as there is evidence that furfuryl alcohol can cause serious long-term effects
- This substance can get into the body by breathing it in, through the skin and by swallowing it. All these routes need to be taken into account.
- Your work activities should be designed to reduce the release of furfuryl alcohol so that it is as low as possible.
- You should consider a range of controls and choose the most effective and reliable ones. Your aim should be to reduce exposure to furfuryl alcohol so that it is as low as possible
- Where you cannot control exposure enough by other means (e.g. by using local exhaust ventilation) you should also provide suitable personal protective equipment. This is as well as providing the other control measures.
- Check and review regularly all your control measures to make sure they are still working as intended.
- Make sure that all your employees know about the hazards posed by furfuryl alcohol and the risks of working with it. Train them how to use the control measures properly.
- Make sure that the control measures you have introduced do not increase the overall risk to health and safety.

When considering how to control exposure to furfuryl alcohol you may find the following COSHH guidance sheets helpful:

1. For use in the manufacture of flavourings:

[Local exhaust ventilation](#) [33kb] 

[Fume cupboard](#) [31kb] 

[Selection of personal protective equipment](#) [36kb] 

2. For use as a solvent for dyes and resins:

[Local exhaust ventilation](#) [33kb] 

[Fume cupboard](#) [31kb] 

[Drum emptying using a drum pump](#) [38kb] 

[Mixing liquids with other liquids or solids](#) [32kb] 

[Selection of personal protective equipment](#) [36kb] 

3. For use in binding resins in foundry sand:

See Foundry control guidance sheet - furfuryl alcohol FD16 [in development]

4. For use as a laboratory reagent

[Local exhaust ventilation](#) [33kb] 

[Fume cupboard](#) [31kb] 

[Selection of personal protective equipment](#) [36kb] 

## What should employees do?

You must co-operate with your employer in using the control measures provided (such as ventilation and personal protective equipment). You should report any faults with the control measures to your employer.

You should wash your hands before eating, drinking or smoking. If you don't then furfuryl alcohol could get into your body through your mouth.

You may wish to seek the advice of your safety representative.

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## Other information

Further help: Contact HSE's InfoLine Telephone: 08701 545500

Feedback: Please send any comments to [ICUADMIN.HD@hse.gsi.gov.uk](mailto:ICUADMIN.HD@hse.gsi.gov.uk) using CHAN33 as the subject

Further copies of this CHAN, along with others in the series, can be found on the HSE website at <http://www.hse.gov.uk/pubns/chindex.htm>

COSHH Essentials is available at <http://www.coshh-essentials.org.uk/>

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**This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law.**

## Glossary

CAS Chemical Abstracts Service: A library system that gives code numbers to chemicals [\[back\]](#)

COSHH Regulations: The Control Of Substances Hazardous to Health Regulations [\[back\]](#)