



CHEMICAL ALERT NOTICE 33- FURFURYL ALCOHOL

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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.

This guidance provides information on the health effects associated with exposure to furfuryl alcohol at work. It also gives advice on good practice, which employers, users and suppliers may find helpful in considering what they need to do.

Why issue a chemical alert notice (CHAN)?

Since the implementation of the COSHH Regulations in 1989 furfuryl alcohol has had Occupational Exposure Standards (OESs) of 5 ppm (20 mg.m⁻³), 8-hour time-weighted average (TWA), and 15 ppm (61 mg.m⁻³) short term exposure limit (STEL). Recently, HSE has identified evidence that these OESs may not be adequate to protect occupational health and the Health and Safety Commission has therefore decided to withdraw them from EH40 as from April 2003.

What is furfuryl alcohol?

Furfuryl alcohol is a colourless-yellow liquid with a faint burning odour.

Where is it used?

Furfuryl alcohol is used as a flavouring agent and as a solvent for dyes and resins. Furfuryl alcohol-based resins are used as binding agents in foundry sand, as corrosion inhibitors in mortar, grout and cement, and in the manufacture of fibreglass reinforced plastic equipment.

What is the key health hazard?

The vapour of furfuryl alcohol causes irritation to the eyes and nose. There is very little information from observations in humans on the effects of exposure to furfuryl alcohol. Long-term inhalation of the vapour in rats and mice caused damage to the nasal passages at airborne concentrations of 2 ppm and above. A small number of rats also developed nasal cancers at 2 ppm and above. These exposures also caused kidney damage, and a small number of rats and mice developed kidney cancer.

How does it get into the body?

Furfuryl alcohol is absorbed into the body by breathing in the vapour. Furfuryl alcohol is also well absorbed into the body if the liquid comes into contact with the skin. If the hands get contaminated with furfuryl alcohol then it can be swallowed following hand-to-mouth contact.

This guidance provides advice and information to suppliers, employers and users.

For substances where no exposure limit is set, employers should determine their own working practices and in-house standards for control so that repeated exposure does not cause ill health.

What should suppliers do?

You should ensure that the information contained in this notice is passed on to your customers as required by the Chemicals (Hazard Information and Packaging for Supply) Regulations 2002. You should take steps to review your safety data sheets to reflect the new findings..

What should employers do?

- You should give priority to preventing your employees being exposed to furfuryl alcohol.
- Where preventing exposure to furfuryl alcohol is not reasonably practicable (e.g. by using a different substance), then you should adequately control exposure by a combination of engineering and process control measures. **Now that the OESs have been withdrawn, your legal obligation under COSHH remains to achieve adequate control. HSE's assessment of the toxicity information on furfuryl alcohol shows that it most closely matches COSHH Essentials hazard group D. This has a target airborne concentration range of 0.05 - 0.5 ppm. HSE recommends that exposures do not exceed 0.5 ppm (8-hour TWA). Employers are advised to use the COSHH Essentials system to obtain advice on suitable controls. Furfuryl alcohol has low volatility if used below 24°C, medium volatility between 24 and 80°C, and high volatility above 80°C. At room temperature (25°C), furfuryl alcohol requires Control Approach 3 (containment) for small amounts, and Control Approach 4 (expert advice) for other amounts.**
- In dealing with exposure after the OES is withdrawn you should try to reduce the number of people exposed and the length of time each is exposed as required by good hygiene practice.
- You must give all your employees who are, or who may be, exposed to furfuryl alcohol sufficient information, instruction and training to understand the potential problems and the precautions they need to take.
- You should make sure that employees, safety representatives or representatives of employee safety are aware of this information and are consulted on any action that you propose to take as a result.

What should employees do?

- You must co-operate with your employer in using the control measures (such as ventilation and personal protective equipment) provided and reporting any defects found in the control measures.
- Wash your hands before eating, drinking or smoking in the workplace, otherwise furfuryl alcohol could enter your body through your mouth.
- You may wish to seek the advice of your safety representative or representative of employee safety.

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