



Working with Organic Solvents



Organic solvents (e.g. toluene, white spirits) and products containing solvents are used in many workplaces. Because they may damage both physical and mental health, everyone who uses solvents should understand the hazards and the care needed in their use.

Most organic solvents are also highly flammable, and it is important that extra precautions are taken when working with solvents to ensure that sources of ignition are safely managed.

HOW DO SOLVENTS ENTER THE BODY?

Solvents can enter the body in three ways:

- Solvent vapour can be breathed into the lungs
- Liquid solvent can be absorbed through the skin
- Solvents can be ingested and cause poisoning.

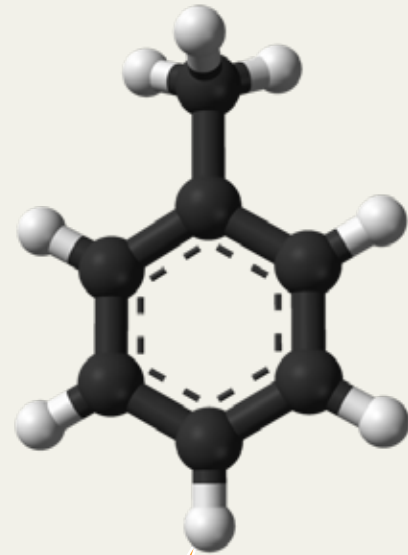
HOW DO SOLVENTS AFFECT YOUR HEALTH?

Different people react differently to solvents. Not all solvents have the same effects, but common effects are:

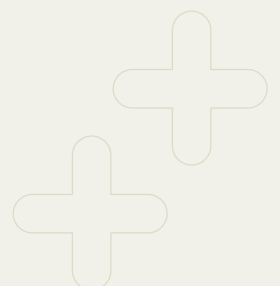
- Headaches
- Drowsiness
- Forgetfulness
- Damage to the skin and eyes
- Weakness
- Irritability and mood changes
- Giddiness, balance disturbance
- Nausea
- Abnormal tiredness.

These effects may disappear once you stop working with solvents, but long-term or high exposure increases the risk of permanent damage to your health.

- Long-term exposure can damage the nervous system, resulting in:
 - Lack of concentration
 - Loss of memory
 - Depression
 - Blunting of mental skills.



Chemical Formula of Toluene
• $C_6H_5-CH_3$





SKIN

Skin contact often causes drying, cracking, reddening and soreness – a condition known as dermatitis. It increases the absorption of solvents and encourages skin infection. Dermatitis caused by solvents may last a long time, even if you stop using the solvent.

RESPIRATORY TRACT

Many solvent vapours irritate the lining of the respiratory tract, affecting the nose, throat and lungs. In certain conditions, some solvents may cause an asthma-like attack.

EYES

Solvent vapours or liquids may cause eye irritation. This is usually reversible and permanent damage is rare. Solvent splashes to the eyes are dangerous and must be treated immediately. Exposure over a period of time has also been shown to cause damage to other body organs including the liver, kidneys and heart.

ORGANIC SOLVENTS ARE COVERED BY HSNO LEGISLATION

The Environmental Risk Management Authority New Zealand has issued a Group Standard for Solvents. This means that there are certain storage, use and disposal requirements that must be complied with when working with organic solvents. For further information on how to comply with the Group Standard for Solvents, go to www.ermanz.govt.nz/hs/groupstandards/standards/solvents.html

DEPARTMENT OF LABOUR ADVICE

It is the Department's advice that you:

- determine that there is no suitable alternative to the solvent which poses a lower level of risk
- check the name of the solvent before using it for the first time. Solvents often have several names and many solvents have similar names – this can be confusing
- read the solvent container's label carefully and note all health warnings
- obtain an up to date Safety Data Sheet from the solvent supplier. Safety Data Sheets are an important source of information for health hazards, safe handling procedures, disposal requirements, and what to do in an emergency involving the solvent
- use the solvent in a well-ventilated area to avoid the build-up of solvent vapours
- wear the appropriate personal protective clothing in order to minimise skin, eye and respiratory tract exposure
- store and handle solvents in areas that are safe from sources of ignition.

Note: This material has been prepared using the best information available to the Department of Labour at the time of publication. Information may change over time and it may be necessary for you to obtain an update. This material is also only intended to provide general advice and does not constitute legal advice. You should make your own judgement about action you may need to take to ensure you have complied with your workplace health and safety obligations under the law.

WHICH INDUSTRIES/SECTORS OR MATTERS WILL THIS INFORMATION BE RELEVANT TO?

Manufacturers, chemical industry

