

Tetrachloroethylene

Tetrachloroethylene is imported mainly for use in the dry cleaning industry. It is also used in car care products and the coal, aerospace, printing, textile and film industries. It is more commonly known as perchloroethylene or 'perc'.

NICNAS conducted a preliminary assessment of tetrachloroethylene in June 2001. The assessment found that there was no need to conduct a full risk assessment and the preliminary report will remain the most complete source of information on tetrachloroethylene available from NICNAS. Here are the main findings of that report.

Tetrachloroethylene can enter the body by being swallowed, breathed or by skin contact. Of these, breathing it in is the most likely way for health effects to occur.

Signs of tetrachloroethylene poisoning in the short term include dizziness, faintness, headaches and nausea. Longer-term exposure can cause the same effects at lower doses.

At high concentrations, seizures, collapse, coma and death have occurred. Kidney problems can result from an exposure that causes unconsciousness. Such an episode can also affect the liver.

Tetrachloroethylene causes skin and mild eye irritation.

There are some studies to suggest that tetrachloroethylene might cause cancer.

ENVIRONMENT

Tetrachloroethylene affects aquatic life forms and plants.

Tetrachloroethylene is listed on the National Pollutant Inventory. It should not be released into the air, drains and waterways.

Waste water containing tetrachloroethylene is classified as hazardous waste by most state and territory environmental agencies.

Waste contaminated with tetrachloroethylene must be disposed of by a licensed waste contractor.

RECOMMENDATIONS

Tetrachloroethylene is a category 3 carcinogen and use of the chemical should be avoided or reduced to the lowest possible levels.

Dry cleaners:

- should store tetrachloroethylene in banded areas away from other chemicals (for instance hydrogen peroxide) which may react to cause toxic gases.
- replace older machines as soon as possible.
- maintain machinery carefully, checking for leaks.
- use carbon absorbers and water separators where possible.

Coal testing:

- enclose the process.
- improve exhaust ventilation.
- airtight containers for density solutions should only be open when in use.
- operators should wear personal protective equipment, including respiratory protector.

Other users:

- MSDSs for industrial aerosol products should warn against repeated and regular use of the product.

Tetrachloroethylene is classified as a Hazardous Substance.

The national exposure standard has been set at 50 ppm (340mg/m³) TWA averaged over 8 hours and a short-term exposure limit of 150 ppm.

Australian Dangerous Goods Classification 6.1; UN Number 1897; Hazchem Code 2 [Z] and Poisons Schedule Number 5 for mixtures containing 5% or less and Schedule 6 for mixtures containing more than 5%.

More information on tetrachloroethylene can be found in the Material Safety Data Sheet available from the supplier. A comprehensive source of information is the preliminary assessment of tetrachloroethylene published by the National Industrial Chemicals Notification and Assessment Scheme (NICNAS). This is available free of charge on the NICNAS web site or by calling 1800 638 528. More information on the use of industrial chemicals can be found at the NICNAS web site: www.nicnas.gov.au