

# Acrylonitrile

**Acrylonitrile is a liquid chemical mainly used in the manufacture of polymers.**

NICNAS conducted a preliminary assessment of the use of acrylonitrile in February 2000. These are the main findings of the preliminary assessment. The assessment concluded that the use of acrylonitrile in Australia is well controlled and that a full assessment was not required at this stage.

Acrylonitrile is classified as a Hazardous Substance.

It is a notifiable carcinogen in Category 2.

Acrylonitrile is in class 3 under the Australian Dangerous Goods Code (Subsidiary risk 6.1 and Packing Group 1). It is explosive and highly flammable.

Acrylonitrile poisoning happens quickly and can cause death. Poisoning can occur through the skin, swallowing or by breathing in fumes.

There may be no symptoms of acrylonitrile poisoning at levels slightly above the exposure standard. Over the longer term, headache, insomnia, irritability and fatigue may be noticed.

At higher concentrations the symptoms of acrylonitrile poisoning are eye, nose, throat and airway irritation, headache, vomiting, nausea, dizziness and weakness.

At very high concentrations, acrylonitrile can cause convulsions, unconsciousness and death.

Splashes with liquid containing acrylonitrile can cause serious eye damage.

Skin contact can cause irritation and dermatitis.

Acrylonitrile may cause cancer.

## RECOMMENDATIONS

The assessment noted that the use of acrylonitrile is tightly regulated and that the necessary safety precautions are observed at all sites.

- The Industry Code of Practice should be updated to include new information and regulations which have been developed since 1992.
- In particular, the Industry Code of Practice should specify adequate and consistent atmospheric monitoring programs.
- All laboratory personnel should be adequately trained in the hazards of the chemical and included in atmospheric monitoring programs.

The exposure standard for acrylonitrile is 2 ppm (8 h TWA).

More information on acrylonitrile can be found in the Material Safety Data Sheet available from the supplier. The most comprehensive source of information is the preliminary assessment of acrylonitrile published by the National Industrial Chemical Notification and Assessments Scheme (NICNAS).

This is available free of charge by calling 1800 638 528. More information on the use of industrial chemicals can be found at the NICNAS website: [www.nicnas.gov.au](http://www.nicnas.gov.au)