

Sodium Ethyl Xanthate (liquid)

Sodium ethyl xanthate is used as a flotation agent in the mining industry. It is part of the family of xanthates that produce carbon disulphide as they decompose. Sodium ethyl xanthate is used in liquid and solid forms. Liquid sodium ethyl xanthate behaves differently and poses different hazards from the same chemical as a solid.

NICNAS assessed solid sodium ethyl xanthate in May 1995. The manufacture of liquid sodium ethyl xanthate in Australia prompted a second assessment in February 2000. Both assessments also briefly covered carbon disulphide, which is a by-product of sodium ethyl xanthate. These are the main findings of the assessment of liquid sodium ethyl xanthate. Solid sodium ethyl xanthate is discussed in Safety Info No. 3.

A product containing more than 20% sodium ethyl xanthate is classed as a Hazardous Substance. Liquid sodium ethyl xanthate is not classified under the Australian Dangerous Goods Code. The assessment found that sodium ethyl xanthate in a liquid form met the criteria for a Class 9 substance because of the environmental hazard and as a 6.1 substance due to its acute toxicity.

Under normal conditions of use and transport, liquid sodium ethyl xanthate decomposes slowly to form carbon disulphide. Carbon disulphide is a toxic gas that is readily absorbed through the skin and is highly flammable under normal atmospheric conditions.

Sodium ethyl xanthate is extremely toxic in the water system. Spills should be contained and cleaned up with minimal amounts of water.

Sodium ethyl xanthate is poisonous but there is a lack of information about its health effects. Sodium ethyl xanthate is readily absorbed by the skin and is a skin and eye irritant.

Animal studies on other xanthates show that repeated exposure to sodium ethyl xanthate may cause damage to the central nervous system, liver and kidneys.

Sodium ethyl xanthate forms carbon disulphide. Carbon disulphide is extremely poisonous when absorbed by the skin or breathed in.

Signs of high exposure are dizziness, tremors, difficulty breathing, blurred vision, headaches, vomiting and death. It causes severe skin, eye and respiratory irritation. Repeated exposure to carbon disulphide can cause reproductive and nervous system damage.

The main health risk from sodium ethyl xanthate is from skin contact with the liquid and from inhaling carbon disulphide.

RECOMMENDATIONS

Air monitoring for carbon disulphide should be conducted during the manufacture and end use of sodium ethyl xanthate.

Workers using sodium ethyl xanthate should be trained in the safe use, transport and storage of the chemical and also carbon disulphide.

Emergency procedures should be prominently displayed and workers should be trained to implement them.

There is no current national exposure standard for sodium ethyl xanthate. The current national exposure standard for carbon disulphide is 10 ppm TWA, however, this is listed for review.

More information on sodium ethyl xanthate can be found in the Material Safety Data Sheet available from the supplier. The most comprehensive source of information is the detailed assessments of sodium ethyl xanthate published by the National Industrial Chemical Notification and Assessments Scheme (NICNAS). These are 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