

Frequently Asked Questions – HSE and Product Handling

How long will acrylonitrile stay stable?

6 months under normal conditions. The inhibitor system needs to be discussed.

How do I handle acrylonitrile safely?

The safety of use of acrylonitrile depends strongly on the conditions to which it is exposed during processing. Please consult the physical, chemical, and thermodynamic data on this website or contact BP's technical staff directly with specific questions.

What type of material should be used for PPE, to provide the best protection from exposure to acrylonitrile?

Impermeable protective clothing includes butyl rubber gloves, chemical boots and suits, and splash-proof safety goggles or face shields. These items, and other acrylonitrile protective clothing, must be made from materials specifically recommended for protection against acrylonitrile penetration. Also, the duration of the job task, the thickness of the protective clothing material, and the "breakthrough time" must also be considered in selecting appropriate protective wear. Breakthrough time is the amount of time the material will keep out acrylonitrile liquid before penetration and resultant skin contact takes place. Please refer to the Occupational Safety and Health data on this website for further information.

What type of employee exposure monitoring should be conducted for acrylonitrile?

Airborne concentrations of acrylonitrile in the workplace can be measured using direct reading instruments, such as the detector tube, or with instruments that monitor throughout a workday, such as the personal sampling pump and charcoal tube.

Monitoring to evaluate a worker's 8-hour exposure potential is performed using NIOSH Method 1604, issue 2 dated August 15, 1994. To perform this method, acrylonitrile vapor is collected on charcoal sorbent tubes. The collected vapor is then desorbed by solvent or thermal means and the amount of acrylonitrile present is determined by gas chromatography utilizing a flame ionization detector. Details of this method are available on the internet (<http://www.cdc.gov/niosh/nmam/pdfs/1604.pdf>).

The frequency of routine monitoring is determined with the results of initial exposure monitoring.

Regardless of the monitoring method used, the results must be at the confidence level of 95 percent. The confidence level must be accurate within plus or minus 35 percent for concentrations at or above the acceptable exposure limit, or within plus or minus 50 percent for concentrations below the acceptable exposure limit.

When and what type of a respirator should be used when handling acrylonitrile?

Please refer to the Acrylonitrile Respiratory Protection table in the Occupational Safety and Health link on this website.

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