



Acrylamide – Guidance for Local Authorities

Description and Background

Acrylamide is an industrial chemical with the formula C_2H_5NO . It is mainly used to produce polyacrylamide which is used as a coagulant in water treatment. Some grouting agents used in well / borehole linings may also contain the substance. Human exposure to acrylamide can also occur through ingestion of foods cooked at high temperatures.

Acrylamide is highly soluble and does bio-degrade with time, although its use in well and borehole linings may contaminate groundwater.

Health Significance

The World Health Organisation (WHO) considers acrylamide to be a neurotoxin and a potential carcinogen. It has set a health based guideline value of $0.5\mu\text{g/l}$ in drinking water.

Risk Assessment and Monitoring

Acrylamide is only likely to be an issue where polyacrylamide coagulants are used in drinking water treatment. This is highly unlikely in most private water supplies. Its occurrence due to use in grouting is possible but should not be an issue where appropriate products have been used.

The Private Water Supply regulations require monitoring for acrylamide to take place where there is a risk it may be present, namely where it is used in coagulation or in known to be present in grouting. It can be quite difficult to analyse for, and it may be more practical to eliminate the risk and need for monitoring via careful control of any products used in coagulation in grouting.

What if it fails?

This parameter is highly unlikely to fail in a private water supply, and the source should be easy to identify if it does. Depending on concentration, health advice should be sought.

Check the following:

- Composition of any treatment chemicals used
- Composition of any grouting around wells and boreholes, especially if recently refurbished.
- Check for industrial contamination or point source contamination

Options for resolving at source

- Change treatment chemical or modify dosage. This should reduce the concentration of acrylamide to within acceptable limits relatively easily.
- Replace any grouting potentially containing acrylamide

Treatment

Not practical – control at source and through treatment product specification or approved grouting materials. Suitable approved products may be found here:

<http://dwi.defra.gov.uk/drinking-water-products/approved-products/index.htm>

FAQ Fact Sheet for Owners and Users

To be developed if necessary