

## 2.7 GENERAL PROTOCOLS FOR SAFETY IN FIELD PRESERVATION OF SAMPLES

### Overview

Physical, chemical and biochemical reactions may take place in the sample container between the time of sample collection and laboratory analysis. Storing samples in a cool dark shipping container, such as a cooler, assists in minimizing or slowing down the changes. In some cases, the samples require a preservative before shipping to maintain the integrity of the sample. Strong acids or bases used for the preservation of water samples should be stored and handled with care. Always store preservatives in an upright position before use. Store in a location where the preservatives will not freeze or overheat.

### Sources

Environment Canada and B.C. WLAP (2005 c), EMAN-N (2005), Environment Canada (2006 b)

### At a glance

*Material  
Safety Data  
sheets*

**1** Care must be taken in the handling of preservatives. Experience has shown that minor drops of specific preservatives, such as acids, on clothing or permeable surfaces can create holes. It is possible that mishandling larger quantities of these substances can cause damage to skin and other parts of the body. During use and disposal, preservatives must be handled carefully. Unused or contaminated preservatives must be disposed of using the outlined procedures that the manufacture provided for each different preservative. Samplers should read the MSDS for each preservative to be used. When in doubt, you should contact the supplier.

*gloves and  
safety  
glasses*

**2** Gloves and safety glasses must be worn when preservatives are being used. If you already wear eyeglasses, then safety glasses are not necessary. For certain preservatives, a respirator mask may be necessary.

*dangers of  
sodium  
hydroxide*

**3** An example of the proper handling of preservatives is shown in Photo 4. The sampler wears latex gloves to protect exposed skin areas. Preservatives are stored and dispensed in individual portions. The vials of preservative are handled with great care and disposed of after use into a sealed plastic bag in the field, which is later disposed of according to supplier recommendations.

**4** Avoid the inhalation of preservative vapours or direct contact with the skin, eyes and clothing. Sodium hydroxide used for cyanide preservation is dangerous if it comes into contact with your skin or eyes. Sodium hydroxide has a soapy feel when rubbed between the fingers. If this sensation is noticed, immediately rinse your hands with plenty of water. Like other preservatives, it will cause damage to skin and clothing.

**5** Preservative spills should be tended to immediately by

dilution with a large amount of water followed by mopping up.

**6** If a preservative does come into contact with your skin, the affected area should **immediately** be flushed with large amounts of water. The area may have to be flushed for as long as fifteen minutes.

*seek  
professional  
treatment  
for eye  
injuries  
after first  
aid*

**7** If a preservative gets into your eyes, flush them and the outside of the eyes immediately with plenty of water. It may be necessary to hold the eyelids open during the washing procedure. Continue the rinsing for at least 15 minutes. After first aid, all eye injuries must be professionally treated as soon as possible.

### Other sources

International Standards Organization 2008 (c) Draft, Environment Canada Undated (a), Environment Canada (2008 draft), Saskatchewan (Undated), Environment Canada (2009), Environment Canada (2006 b)



Photo 4. Handling and preserving of samples using safety gloves  
(Source: Environment Canada and B.C. WLAP (2005))