

BLEACH DIGESTION

This protocol will detail the laboratory processing of sieved water samples for low density MP analysis. The purpose of this step is to digest organic material in the sample to ensure isolation of MPs for analysis.

Materials

Prepared bleach reagent

Glass or stainless-steel cup/bowl

Disposable 5 mL pipette

Procedure

Don appropriate PPE and non-synthetic lab coat or clothing. Clear bench of possible MP sources. Pour aliquot of bleach needed for sampling into appropriate cup or bowl.

Uncap sample container and pipette appropriate amount of bleach into each sample.

a. Add 3mL of bleach for every 20 mL of sample.

Recap and invert to fully mix.

Allow sample to incubate for 72 hours at room temperature.

a. If there is still visible organic material after the initial 72 hours, consider a longer incubation time with an addition of 1-2mL of bleach.

Making the Bleach Regent

Materials

1 cup Bleach - Clorox or other bleach detergent 100% cotton cloth

1- 600 mL glass jar with lid

Rubber band

Procedure

Put on appropriate clothing and clean a flat benchtop (about 2 x 3 ft) of any possible MP sources. Lay down cotton or paper towels to work on incase of spills.

Fold the cotton cloth in half to create a two-layer cotton filter.

Use the rubber band to affix the cotton cloth filter to the mouth of the 600mL glass jar. Press cloth into the mouth of the jar and ensure it will not overflow when the solution is poured into it. Pour about 1 cup of bleach through the filter.

Remove and wash the cotton filter. Cover the jar with aluminum foil to prevent any contamination and gently place the jar lid over the foil.