

Safe Com – anchor corrosion group

UIAA Wall Sulphate Test Kit

Purpose:

It has been a striking feature of all crags with a history of anchor corrosion that the levels of free sulphate have been elevated in the wall-wash samples we have taken from them. The levels can vary considerably over a distance of just a few metres, and likewise, corroded bolts can exist alongside ones that are in perfect condition. However, it seems likely that in that the groundwater draining from cracks in the rock will give a truer indication of the potential for sulphate exposure. We wish to investigate whether the presence of elevated sulphate at seepage points along the cliff line will serve as a reliable indicator of hostile corrosion conditions.

This simple test kit allows for rapid, on-site testing for sulphate at groundwater seepage points. A large number of tests are possible from one kit.

Kit Contents:



1. Two test reagents
2. Black spotting plate

Not supplied: Small stainless steel blade to scrape sample from rock surface, and mix it into the reagent.

Sampling Process:

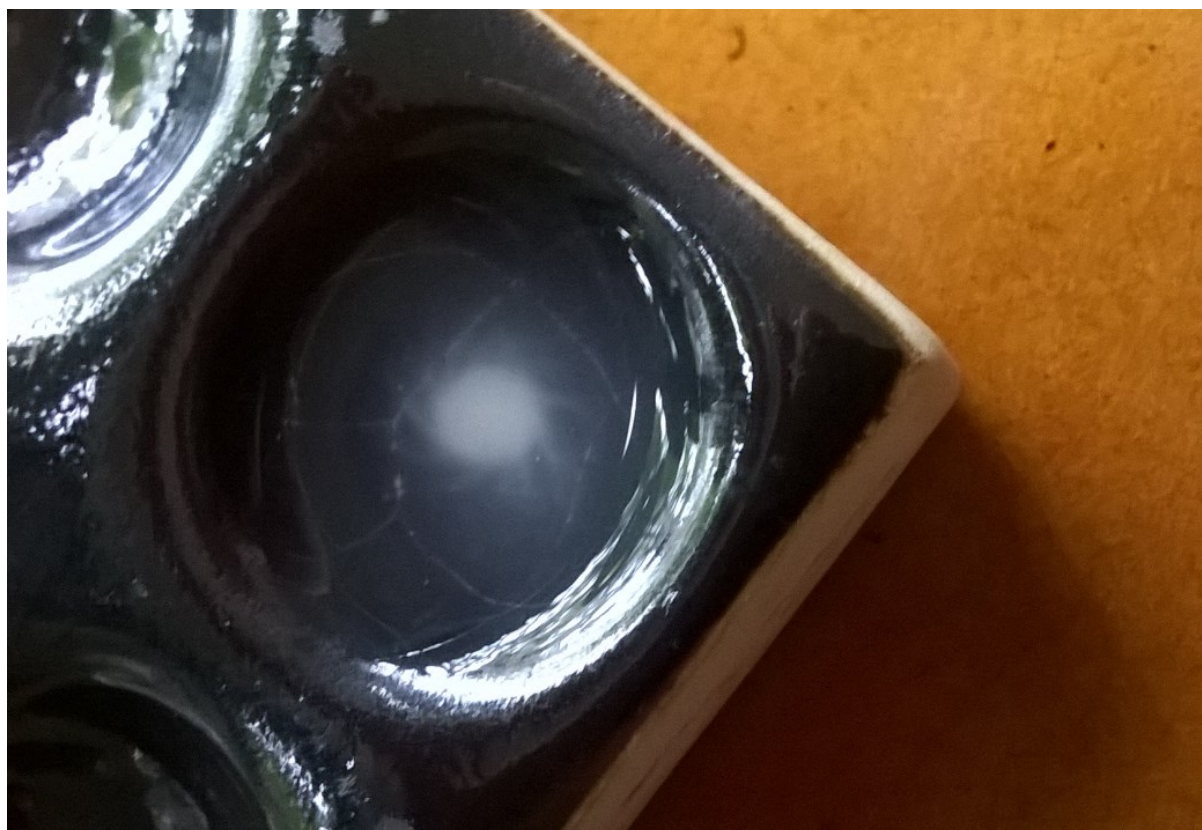
1. Locate places along the cliff line where ground water seeps to the surface. Some typical efflorescence points are shown below.



2. Use the stainless steel blade to remove a small sample and place it in one of the wells of the spotting plate.
3. Add three drops of reagent No 1, and stir/breakup the sample with the blade.
4. Leave to stand for approximately 5 minutes.
5. Add three drops of reagent No 2 and stir with the blade.

6. Wait for approximately 10 minute, and inspect for the formation of a white precipitate that sinks to the bottom of the well of the sampling plate.





The result shown is typical of a strong positive response for sulphate.

Precautions For Use:

Reagents are both moderately toxic and corrosive. It is recommended that disposable gloves be worn and a generous supply of clean water be available for washing spills, and cleaning the spotting plate.

Contact with climbing equipment should be avoided.

Reagent 1:

	H315 H316	3.6% Hydrochloric Acid
	Do not get in eyes, on skin, on clothing	
	Wash spills with copious water	

Reagent 2:

	H301	4.9% barium chloride dihydrate
	Toxic if swallowed. Do not eat, drink or smoke when using this product	
	Wash spills with copious water	