

[Return to Index](#)**Milkiness after "dichromate " bleach**[Jeff](#) (no login)

May 1 2004 at 2:46 AM

Response to [milkiness](#)

Just adding to what Tony said.

"Dichromate" bleaching usually means a "reversal bleach" or one that removes developed up silver as SOLUBLE silver dichromate/sulfate salt, leaving behind your holographic fringes in the form of virgin silver halide grains that didn't get developed up. So it is essential to prevent dissolved up silver from redepositing itself as a crude precipitate all over your hologram as a white scattering layer. The chief cause of this milkiness is actually the soluble bromide ions in the developer and even if you make your developer without any potassium bromide added initially, (which I personally prefer) you still get bromide and iodide ions released in the developer that were originally partnering the released silver. So to prevent this form of milkiness without using large quantities of distilled/deionized water I recommend a very thorough TAP water wash after the developer step. This is to remove all traces of those soluble bromide/iodide ions. The chloride ions in the tap water form a silver halide which is more than 10 times more soluble than those, so you can simply wash them out with a moderate amount of deionized water before you go into the dichromate bleach bath. But you must remember that AFTER bleaching it is essential to first wash the hologram again in deionized water because the gelatin is "full" of dissolved silver ions longing to redeposit themselves by partnering up with soluble bromide ions. Once you have cleared out all that dissolved silver you can wash with tap water if you want.

Just a note about the Non reversal bleach systems such as the copper sulfate one on :

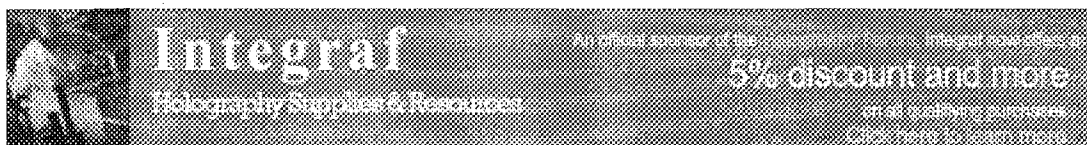
<http://cabd0.tripod.com/holograms/id1.html>

In this the whole system is packed full of bromide ions and deionized water is irrelevant, tap water is quite good enough in my neck of the woods.
Jeff

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Responses

- [Re: Milkiness after "dichromate " bleach](#) - Martin on May 1, 2004, 5:04 AM
 - ["solve" the problem? --a post dichromate treatment.](#) - Jeff on May 1, 2004, 12:15 PM
 - [Re: "solve" the problem? --a post dichromate treatment.](#) - Martin on May 2, 2004, 12:41 AM
- [Re: Milkiness after "dichromate " bleach](#) - Tom B. on May 1, 2004, 8:09 PM

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