

Purchasing Microscope Objective Lens on eBay

Again I do not claim to be an expert in microscope optics; however I try to purchase microscope objective lens at an affordable price (on retirement funding). For this reason I have purchased these lens on eBay; “as used” to keep the price down. When I initially began my new hobby collecting microscopes a few years ago; it didn't take me long to realize that light scattering made the image have poor contrast. For this reason I decided to carefully read the seller's description regarding the optical condition of the used optics. Some gave relatively good image and some poor contrast. Eventually I would stay away from “as is” and go for “good clear image.. Etc” . But even so I was disapointed about some of my purchases.

Eventually I decided to examine the objective lens using the microscope eyepiece (backwards) to get a magnified view of the tiny optics. Under the magnification I was able to see what was scattering the light and sometimes was able to lightly clean and remove what was causing the scattering. As time went on I eventually decided to use my low power stereo microscope:



When I started using this microscope to examine the objective, a whole new world opened up to me; I could really see what was going on. Even the 100X lens front end optics is magnified quite a bit allowing me to carefully clean somewhat selected areas of the lens optics; using great care. I could even see contamination on the rim of the front end optics. Probably due to its previous history of not being cleaned properly after use. At times I could do a relatively good cleaning; but the gunk on the outer rim tended to smear the AR coating making it very difficult to clean. So I have had some success and some failures. But I could only know this from using the above examination microscope. There has been times when I observed using the above microscope scattering particles behind the optics (inside the lens container); would have to remove the lens to get rid of the scattering particles. NEED A CLEAN ROOM to do this!!

Now to my point. I have purchased many objective lens from eBay vendors claiming the optics is VERY CLEAR, used the flash light test, etc. Yes using examining the lens with the naked eye; they look very clear as is claimed; however when I first get them in the mail I check them using the above microscope; most of the time revealing a very different story than that claimed.. Sometimes I have been very surprised.. I still purchase objective lens but realizing that I am taking a gamble. But being fair I have been able to get a good percentage of very useable lenses.