



## Cosmoline Removal!

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I am astonished that it has taken us this long to publish something on Cosmoline removal because of how fundamental a skill it is for mil-surp collecting. The problem is that there are so many different methods that I have read about or get submitted to us via email. Up until now everything I tried was either difficult or took days and literally pounds of rags and elbow grease to get the job done. I have decided to show what method I use as well as give you a list of reader submitted tips on breaking the back of our greatest nemesis: **Cosmoline**.

**Cosmoline:** A yellowish or light-amber colored ointment like mass, having a slight fluorescence, petroleum like odor and taste (*do not taste it please*). Similar to Vaseline in properties, appearance, and thickness. It is the residue obtained in the distillation of petroleum oils and then purified. Cosmoline is a homogenous mixture of oily and waxy long-chain, non-polar hydrocarbons. It can range in color from white to yellow and differ from one another in consistency and shear strength. **Cosmoline melts at 113°-125° F and has a flashpoint of 365° F.**

Removing cosmoline is not only the **most important skill** that a mil-surp firearm collector needs to learn but it is also a **rights of passage** event that welcomes and also initiates you into the world of curio and relic firearms. You are not really a mil-surp collector until you purchase a rifle and get it home to find that the amount of cosmoline on the firearm outweighs the actual weight of the firearm.

Cosmoline has been used for quite awhile by the world's military establishments as a firearm storage preservative. Actually cosmoline is still used by many commercial industries as a rust inhibitor for shipping and long term storage of vehicles, machine parts, and tools. You can purchase cosmoline from [MidwayUSA](#) as well as [Brownells](#).

I have spent many a Saturday in the back yard on a tarp, wearing goggles and thick rubber gloves with a piles of rags, nylon cleaning brushes, and a wide variety of cleaners and chemicals. It has always been a messy and long process but a winnable battle.

Prior to this article I used to send this as an answer to the cosmoline questions that would come in via email:

*I have found that hot water (heat) is really the best way to remove cosmoline and it is the least caustic to the wood and metal. I will usually boil a large quantity of water and then working outside I will pour it over the parts while they are laid out. The heat will melt the waxy, petroleum gunk and wash it away off of the firearm.*

*On smaller parts I will take a pan (one that will not anger my wife if I damage it) and place the bolt and other parts in and lightly boil. The cosmoline breaks up and comes off really fast.*

*Then you will want to wash everything down with a strong detergent and water. All the metal parts will need to be lightly oiled. On the wood there will most likely still be excess oil inside of the wood of the stock. If you place the stock in the sun over a period of a couple sunny days while wiping off the seeping oil every 15 to 30 minutes you should be just fine.*

The above method works very well and is better for the ecology and the human body than using some of the caustic chemicals that are available as cleaners.

My friend Charles Buckner who some of you may have known as **ARebelSon** in the [Surplusrifle.com message forums](#) spoke to me about the **best investment** he had ever made for cleaning newly acquired firearms that were caked in the **brown menace** (*cosmoline*). He purchased a portable hand steamer. He picked it up at a budget tool supply house. **Note:** Charles passed away in July of 2004 and leaves a void in all of the hearts of those who knew him.

I had not taken any heed to his advice until recently when I picked up a couple of rifles that were completely embalmed in cosmoline. I was almost afraid that the actual firearms had long since ceased to exist and what I brought home was just some sort of strange 3-D representation in petroleum. I wiped off as much as I could with shop towels but the SKS had cosmoline packed into every single orifice that was possible (*inside all gas tubes and assemblies*). I could not even pull the bolt back at first and when I finally did it would not close on its own without help. I am sure you know what I am talking about because you have probably had a similar experience in your collecting life. If not then you will, I promise.

I was walking by an end-cap display at a local Home Depot store and what did I see? A small hand steamer for less than \$40. I picked one up and made the dash for home. Charles had never steered me wrong before.



**A funny note:** The females in my family are wildly amazed by **cool** cleaning appliances. I still remember the cleaning competitions my wife and daughter had when they first purchased the vacuum cleaner. The vacuum is one where you can actually watch the dirt being sucked up into a see-through collection container. They wanted to see which one of them could suck up the most stuff off of the carpet. It was amazing to watch. The new steamer was no exception. My daughter spent at least a half an hour with me, making me clean the outside of the garage door and other cabinets while watching with a gleam in her eye as dirt just lifted right off of the surface. Even when I started cleaning off my SKS she hung around and let out quite a few **oohs** and **ahhs** as large clumps of cosmoline would just melt off the firearm and fall to the plastic bin I was using to collect the crud. I can't wait until we have to replace the washer and dryer!

When you are cleaning cosmoline caked firearms you really need a large commercial grade parts washing tub to contain the splatter and mess. I am talking **large 40 gallon capacity**. All right, all right that is the dream world! Since most of us don't have the resources or space to own something like that in our cramped workshops that most of us call **that corner in the garage my wife lets me use**. Instead I usually purchase large plastic storage bins that you can find at most large hardware or general purpose discount stores like Wal-Mart or Target. They are stackable and will usually run you less than \$10. If the project takes more than a couple days you can close the lids and come back later to continue making a mess. These things are a real marriage saver. Unless you forget to close the lid and the cat gets in and plays around and then comes into the house and rolls around on your wife's kitchen floors.



My first candidate firearm was a newly acquired Yugoslav model 59 SKS. No, not a Yugo 59/66 SKS with the grenade launcher. The Yugo 59 is the predecessor to the 59/66 and has a lot of similarities that I will cover in a later article and range report but for the most part except for the wood used in the stock this SKS looks like the original Russian SKS. As you can see in **figures 1 and 2** the carbine was caked in aging cosmoline that had taken on the characteristics of tile grout. I could not even move any of the components that make up the rear sight.



I hit the outside with steam and after about 5 minutes the cosmoline just dripped off into the large plastic storage bin.



Once I was able to break down the parts (*disassemble*), I blasted them all with steam and the cosmoline turned into a milky soap like substance and dripped away. Make sure you have thick gloves while handling the hot parts. Some parts, like the bolt, I used a pair of pliers to hold onto the part because of the intense surface temperature while steamed.

I have found that a bucket of [Ed's Red homemade bore cleaner](#) is fantastic and a cost effective means in soaking cosmoline coated parts as it just loosens everything up and makes running a nylon cleaning brush over the surface of everything short work. The components in Ed's Red are known to be some of the better and more successful chemicals in their individual rights in cleaning off cosmoline. It would stand to reason that in their combined form they would work even better. Make sure to wear protective clothing (*gloves*) and goggles when working with these harsh and dangerous chemicals.

### Warning

When working with **ANY** hazardous chemicals you should:

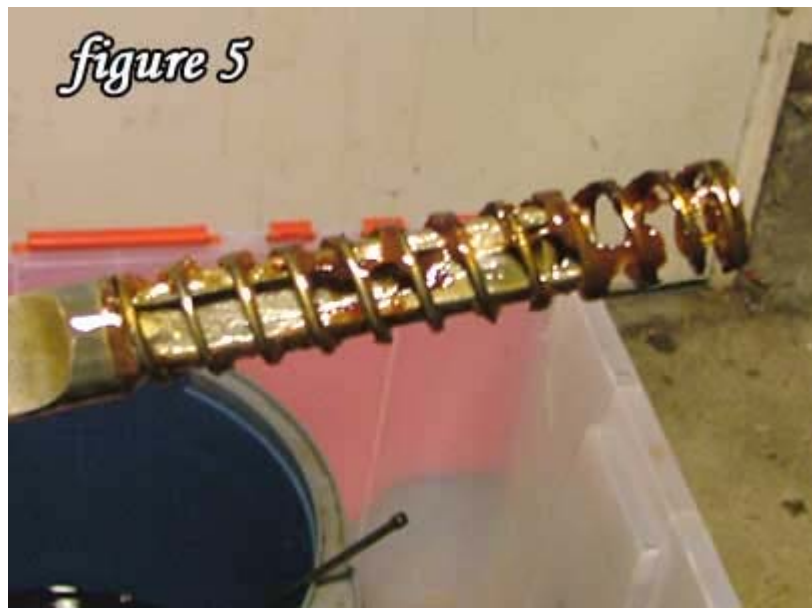
**Read:** All warnings on bottle labels or instruction sheets should be followed

**Use gloves:** Prolonged and repeated exposure to skin with out proper Personal Protective Equipment (PPE - I.e. correct chemical gloves) can cause irritation, defatting, or dermatitis.

**Inhalation:** Excessive inhalation of vapors can cause irritation or nasal and respiratory Passages. Work in a well ventilated area.

**Hygiene:** Smoking or eating after working with a chemical should only be done after the correct hygienic practices are followed. Smoking and eating right after creates a huge potential for ingestion of any hazardous substance.

**Safety goggles:** If the product sprays all over everything or when working with any hazardous chemicals you should wear eye protection.



It only takes around 130° F to melt cosmoline and steamers spray out steam at around 180° F. This is the perfect temperature to break down and melt cosmoline but does not exceed the threshold of flashpoint so the cosmoline does not ignite. I also prefer the steam method over boiling water because there is not as much of a mess to clean up. Also, you do not want cosmoline being poured down your drainage pipes. It would not take long for the cosmoline to cool down and then solidify, adhering to the inside of your drainage pipes. Talk about repelling water and an impenetrable clog!



Note in **figure 7** the cosmoline dripping out of the SKS receiver into the bottom of the storage tub.



Compare the bayonet in **figure 8** with the same bayonet in **figure 1**. All of the years of built up grime and caked cosmoline just melted right off.



I found that the steamer when used on the stock also leaches out a good amount of the cosmoline build up leaving a dry and clean surface. You can really direct the jets into nooks and crannies that are really hard to get at.

**Conclusion:** The steamer does not take everything off. It works **really** well to loosen up the really hardened stuff and it softens up the cosmoline making it really simple to remove with a standard cleaner. I now start out with the steamer to blow everything out, loosen up everything, and then I go to work with either Ed's Red or Goo Gone and I am done in half the time as before.

**A note on the bolt:** When you buy an SKS that is caked with cosmoline make certain to check the bolt and you will most likely find the firing pin frozen in place. Cosmoline is everywhere! It is imperative to disassemble the bolt and remove the build up. I have a simple and effective way of cleaning any cosmoline caked bolt. Just take an old cooking pot that you no longer use and fill it with water. Place it on the stove and drop in the parts of the bolt. Bring the water to a boil for a short period. You will see a dark and smelly pool of oil rise to the surface. Once this happens remove the pot from the stove top and drain off the water and cosmoline. Be very careful as the the bolt parts will be very hot. Wipe down the surfaces with oil and place a small amount of oil inside the bolt. The oil will displace the water and prevent corrosion. This is a surefire way of removing cosmoline and get your bolt in top working order.

#### **SKS Bolt Note from Ben Murray:**

*Be sure you disassemble breech bolt/firing pin assembly and clean thoroughly, at the least, to avoid slam fires and uncontrollable full auto.*

So, this is my latest methodology that I have grown into and found to work for me. Read on and find out what works for others as well. I just wish Charles were around so I could thank him.

jlm;



## Miscellaneous Reader Submitted Cosmoline Removal Tips

### *Stock:*

*I took a bag of oil absorbent and a plastic wall paper paste tray. Packed the stock in with the oil absorbent in the tray and wrapped with a black plastic trash bag. Left it in the sun for a couple days.*

*Then removed the stock and brushed the caked on oil absorbent off with an industrial strength toothbrush. Then used a mineral spirit soaked rag and toothbrush for final cleaning. I repeated this three times over a week. Did a great job in sucking the oil out of the stock.*

### *Metal:*

*Typically I used mineral spirits and a toothbrush in a disposable baking pan for the small parts. This works for the small parts you can almost wipe clean. I tried to do the barreled action of one SKS in with Mineral spirits, but found that the cosmoline would just gunk up my nice and clean mineral spirits. The solution was to take the barreled action into the kitchen sink and use very hot water (180F) to melt the cosmoline out of the tight areas. Another toothbrush and some orange type de-greaser and it came out clean!*

*Side note: When I installed a real recoil pad on my SKS I trimmed about 1/2 inch from the Yugo's stock to install the pad. You could see how the cosmoline, oil and original stain had soaked into the wood. Penetration was approximately 1/4 to 1/3 of an inch.*

*zepadoba (Forum Moderator)*

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*Tried something tonight that worked well for removing cosmoline from a barrelled action. The ingredients are:*

- 2 cup pyrex measuring cup*
- water*
- microwave oven*
- old toothbrush*
- dish towel (to hold hot stuff)*
- beer*

*What I did was put a couple cups of water in the measuring cup & heat it to boiling in the microwave. Then pour it over the barrelled action. You need to do several containers of boiling water, so it would be a good idea to have lots of beer handy.*

*Use the toothbrush to cut up any resistant grease. What is nice is that the heat makes the water evaporate quick.*

*DJL*

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*Everybody was kinda shocked when I took my SKS out of my truck and started blowing it off. It was the first cleaning.*

*That hot soapy water really dose a nice job on cosmoline. I already had it apart so I could stick the nozzle up against the breech end and really clean it out. And it also blew out the gas port. It worked very well. The bore is gorgeous. Of coarse I got a little wet. I went ahead and washed my p/u while I was there. I came home and ran a few patches thru the bore to dry it out. I highly recommend the car wash method.*

*Bigdog (Forum Moderator)*

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*I have always used Naptha. It will clean both metal and wood, dries quickly, will not harm the finish of the wood or take off any color. Must be used outside though and don't rub too hard because it can ignite if too much static electricity builds up on the rag you use. Can be purchased at any hardware store or home center type store.*

*Oldmaster (Forum Submission)*

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*The method involves kitty litter, a box, and either sunlight or your vehicle's trunk. The idea is that after burying the gunstock in kitty litter (without any odor-absorbing chemicals), you put the box in a place that gets very hot, the heat causes the oils and cosmoline to seep out of the stock and they are immediately absorbed by the kitty litter. This method may take a week or two.*

*Unknown Author*

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*I have finished at least 12 military stocks from C&R rifles. Every time I have used the dishwasher. I completely disassemble the rifle and if the stock will fit, like a Garand, then I put it thru the Hi temp pots and pans cycle. Most of the dings and dents get raised, the cartouches are still in order, and the stock is completely stripped. No harsh chemicals, no inhaling fumes, no elbow grease. In about 1 hour its done.*

*I just did my IHC stock today in the dishwasher. I did this to dispel all the bunk that people say that this method of cleaning a stock is bad. I have never had a problem doing stocks this way. After the dishwasher cycle was done and it dried, I sanded the stock with 400 grit sandpaper. I then used Watco Danish oil and have already put 5 coats on. The stock is not complete yet.*

*LTCBOY (Article Submission)*

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*I fill the bath tub with hot water, enough to cover the stock and add dish soap (one table spoon). I then take a scrub brush and scrub the stock. Do not soak the stock because you do not want it to get water logged. I will then drain the tub and rinse the stock of any soap. This is usually the last step before sanding and prep the stock for any stain or sealer. I feel that this cleans the stock of any cleaner you use and the hot water will take some of the smaller dents out. Wipe the stock down good and let dry inside on a rack.*

*Travis*

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*Three or four applications of foaming tub & tile cleaner (aerosol) works rather well for light cosmoline and dirt removal. Super Purple degreaser works very well on caked on dirt and cosmoline. Not as good as putting some heat source to the wood, but works well enough. I've also used a heat gun on some thoroughly soaked Enfield parts. The tub & tile cleaner nor the Super Purple did the job. The heat gun made the cosmoline run right off.*

*Another idea is to place the parts on a aluminum foil covered cookie sheet in a 200° F oven until the cosmoline melts away.*

*Hopper1*

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*Cleaning the Cosmoline from your rifle is a critical item. It is not hard, but you want to ensure you remove all of it. Cosmoline is more of a preservative than a grease. Take your time and make sure you have plenty of ventilation.*

*Start with field striping the rifle, removing all the cosmoline from the receiver, the barrel, the gas tube and piston, the small gas piston and spring under the sight block.*

*Then move on to the small parts. Here a tooth brush and mineral spirits works wonders. A can of break cleaner/gun scrubber is an amazing help on blasting the gunk out of the small parts. Proceed to clean all the gunk from the trigger assembly, the bolt, the bolt carrier, the recoil spring and tube. You will want to*

*ensure the magazine does not have cosmoline in the nooks and crannies.*

*If you use a tooth brush and get into all the little areas, you should not have to break down the trigger group. I have never needed to.*

*An important note is cleaning the firing pin. The pin should rattle when the bolt is lightly shaken. This is to ensure all the gunk and junk has been removed. This is a safety issue, as with all free floating firing pin designs, you do not want the pin getting stuck in the forward position. Blasting the firing pin and firing pin channel with gun scrubber/break cleaner/WD-40 will help ensure there is nothing left.*

*Some people will completely break down the bolt and take the firing pin out to clean it, but if you blast it clean with break cleaner and it rattles freely, you will be good to go.*

*There are several dozen post on cleaning and refinishing stocks. Everything from a simple clean to a complete strip and refinish. Poke around and see what you find.*

*After cleaning everything, reassemble with a light coat of oil (except the long gas tube and piston, they stay dry) and take her to the range and let us know how you do!*

*zebadoba*

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*Cosmoline is one tough mother,two ways i've found to clean it from rifles are brake parts cleaner or carb cleaner Carb cleaner. Both are very good to use in tight spots. It just melts away just lay the parts in an oil drain pan works good and is cheap and easy no soaking in solvent.*

*Shemp56*

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*I used Hoppes 9 with the aid of a toothbrush, along with some Break Free Powder Blast to clean my Yugo SKS and Mausers. It may take a while depending on the amount of cosmo you are dealing with.*

*Jake45*

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*My personal favorite is to buy a stretch of 4" PVC, cap it at one end, and then just dump mineral spirits into it. Take the barreled action, insert, and let sit for a bit. When it comes out, a lot of cosmoline should be gone, and you can nylon-brush/rag-wipe the remainder off.*

DoniTzu

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*Whenever I clean firearms I make sure to wear Nitrile gloves, use adequate ventilation, and wear eyeglasses.*

*To take off Cosmoline I like to use automotive engine degreaser and follow-up with plain kerosene. It takes about a half gallon to do a rifle. It's OK to soak metal parts in kerosene; but, you only want to wipe the wood down. If the kero is allowed to soak into the wood it will soften it, and make quality re:finishing next to impossible.*

*After using the kerosene I switch to a milder household degreaser. My current favorite is, 'Simply Green'; but many household products will do including Windex or Fantastic. You'll need one or two large rolls of paper towels for all the wiping your going to be doing; and I like to keep a large plastic garbage bag next to the table to catch and immediately dispose of all the stinky flammable stuff.*

*The last step in the process is to give the wood a liquid detergent and hot water bath, followed by a thorough towel drying. I'm a fanatic about wood finishing, so if the wood shows any evidence of retaining Cosmo, I wrap it in paper towels and masking tape and bake it for 2 hours in a 200 degree PREHEATED oven. When you remove the warm stock from the oven and unwrap it, check the nooks and crannies for little Cosmo bubbles – Wipe them all off.*

War\_Angel

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*I have used mineral spirits on all three of my surplus rifles. Pour about an inch or two into a bucket. Swirl often, and the cosmo just melts away.*

harmank

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*The lazy man's and poor man's clean up is putting your rifle in the car and rolling the windows up on a nice hot sunny day, but make sure something is under it or your dash will be puddled with cosmoline, after a day in the car i could no longer get any cosmoline out of the gun, it was nice!*

kevin917z

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*A few years ago I bought three of the No4 Enfields new in the "Mummy Wrap". They were brand new in the factory wrap when they were released and were made in the early 50s. I used a can of silicone spray and rags ( my wife's new bag of handi wipes, LOL she was pissed) to clean off the cosmo on one. It was done in a few hours. The other two are still mummified. I figured silicone wouldn't hurt the wood.*

*Tony Morano*

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*My current practice is to simply buy two cans of .99 cent brake cleaner whenever I buy a milsurp. After that I do heat the stock in the oven at 135 degrees, wiping down every 10 minutes until no more cosmo weeps out. The brake cleaner does no damage at all to the metal or wood and melts the cosmo into a black plastic garbage bag in the garbage can. 20 minutes and 95% is a puddle in the bottom of the bag that will evaporate over night. The balance of 5% is stuck between the gas tube and hand guard and is inside the wood. This stuff has to be baked out.*

*I have 7 SKS rifles now and believe me, I have blasted, boiled, and baked the bolts and there is NO WAY to guarantee that they are clean without removing the retaining pin and disassembling the bolt. Ben Murray is absolutely correct, the bolt MUST BE DISASSEMBLED FOR SAFETY. And if the keeper pin is too tight then it should be taken to a machine shop and pressed out.*

*Tom Boucher*

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*Pure lacquer thinner is as a good stock cleaner. It evaporates, won't leave any film on the wood. Will clean off old finish, grime, gun oil and human body oils.*

*I use spray brake cleaner on small parts and bolts. the little straw can shoot it in tiny places etc.*

*Mark Trope*

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*I always use Coleman fuel (for regular Coleman backpacking stoves) to remove cosmoline. I fill the deep end of a steel paint roller pan (about an inch from the top) and soak parts for an hour or so in our backyard. The cosmoline ends up on the bottom of the pan and the parts are clean. I follow up by swabbing parts with Coleman-soaked rags. I end up pouring Coleman fuel down the barrels of my guns with a funnel, then I swab it out with an old cleaning rod before I begin the finer work of cleaning in the basement. The EZ Off Oven Cleaner trick works well on the wood. I'm reworking an Enfield Number 1 Mark 4 at the moment and the EZ Off did a great job in preparing the wood for sanding. It's messy, but the joy is seeing the diamond surface out of the sand. Anyway, thanks for your contribution. The article*

*will help many people who struggle with de-gunking their firearms.*

*Brett univ100*

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*I have used Hoppes 9 cleaner very successfully to clean Yugo SKS rifles but it is smelly, mildly dangerous and can't be used indoors. (Assuming you want your wife to remain with you!) Recently discovered that a non-flammable, non-caustic, water soluble cleaner called "Spray 9" dissolves cosmoline. Sprayed all parts in the laundry tub, did minimal amount of brushing and then flushed with hot water, even the stock and gas tube cover. ALL cosmoline gone, no odder and stationery tub cleaner than when I started.*

*Bill Shepard*

### **Some Miscellaneous Products that are Known to Work in the Removal of Cosmoline**

- WD-40
- Paint Thinner
- Goo Gone
- EZ Off Oven Cleaner
- Purple Power Cleaner
- Scrubbing Bubbles Bathroom Cleaner
- Turpentine
- Acetone
- Mineral Spirits

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