Gnome's Nasty Ole Fuel Tank Restoration Cheat Sheet

First and foremost: evaluate the tank. Don't discover a pinhole (or three) after hours of prep work, even though many issues won't be apparent until prep. Expect $120+ in materials and quite a few hours to restore a tank, which is already in range of the price of a new $200 replacement tank. So if at all possible, buy a new replacement. A **rockbottom** price for having a tank restored and lined as a service would be about $600 labor, $150 for materials. This is risky for bad tanks, since a shop isn't going to do necessary 'on the fly' repairs that you can do when you do the job yourself. Lastly, I have never seen a coating fail that was not the result of poor prep, regardless of the product.

So in other words craigslist 'barn-find' addict, welcome to Shiff Creek, the labor reality not shown on all those glossy automotive shows! Let this guide be your (hazing) paddle.

Interior/exterior coating

- POR15 fuel tank liner kit
- POR15 rust coating
- POR15 TopCoat. This stuff is very thick! Buy the POR15 thinner if you top coat. Its not an up-sale, you actually need it (rumor has it that Xylene also works).

Gear

- thick chemical gloves and thin nitrile gloves
- thick/protective clothing and goggles (yes, you need these)
- open, ventilated space to make messes
- good weather: 70+ degrees, low humidity (makes a huge difference)
- a good hot water supply
- 1 case of smoke bombs (the good ones)

Cleaning

- Heavy metal chain
- Various rubber plugs or other fittings to block passages during cleaning and lining
- Purple clean or other strong degreaser
- Pipe cleaners (check automotive, plumbing, and gun cleaning aisles)
- Drano MaxGel (only Drano or its equivalent, not acid-based 'hair eater' products)
- OSPHO (or other off-the-shelf phosphoric acid or non-gel rust treatment, and **not** "Rust Reformer")
- A few cans of cheap aerosol carb cleaner
- De-natured alcohol, MEK, lacquer thinner or acetone
- Berryman's carb cleaner (for heavily tarred/varnished tanks—buy only if/when needed)

Prep

- Automotive sandpaper in multiple grades (for the exterior)
- Paint stripping wheel (also for the exterior)
- Heat gun

Application

- Heat gun
- Low pressure compressed air or aerosol 'duster' spray (for cleaning electronics) for clearing narrow fuel lines

Prep

1. Empty the old nasty gas. Most local waste dumps accept old gasoline, and so will most autoparts yards if you're nice. These days disposing of gas the right way is much easier and safer than the alternatives.
2. Take a quick phone video of where/how things are attached, then remove attached components (hangers, fuel level sending unit, rubber, etc). Gas tanks and their components are a design afterthought, and you won't remember where everything goes.
3. Plug everything and clean the inside of the tank with purple clean, boiling water, and heavy chain to knock material loose.
4. INSPECT: Inspect the tank for viability after the initial clean. Don't discover too late that a tank isn't in good condition, or is rusted through and pinholed. It happens. The earlier you find issues, the more choices you have.
5. Clear all lines and other narrow passages with brushes and spray carb cleaner
6. Rewash the inside of the tank with purple clean and heavy chain to loosen material and score the inside of the tank. Enjoy the workout! Because you're going to do this a dozen times or more—no joke.

For heavily sludged tanks and tanks with puddles of fuel 'tar':

- Consider getting the tank boiled out at a radiator repair shop (usually about $60). You will spend about half that in material and several hours for lower quality results if you go the manual route.
- Repeat the cleaning steps but with boiling water and drano. Drano will not harm metal, and you can leave it in overnight—it is a surprisingly good degreaser.
- Leave the tank in the back of your truck bed and drive around for a week, letting the tank soak in the back with the cleaner shifting around from driving.
- If the 'tar' isn't removed after a few Drano cycles, spray it down with a few cans of spray carb cleaner. Then move up to Berrymans carb cleaner (it comes in a gallon paint can). Just leave a pint or more of Berrymans in the tank for several days while agitating it, and let it loosen the tar—it won't look like its working, but works within a couple days.

Repeatedly clean the tank, escalating from Purple Clean, to Drano, to Berrymans, if needed. Also use heat, use mechanical means. Be patient. I spent four weeks prepping mine after work.

Between cleanings, dry the tank as much as possible, and consider rinsing out with thinner (lacquer thinner, alcohol, etc) to prevent too much flash rusting between cycles. I also ran OSPHO through the tank quickly (~30mins or so) once or twice to convert any rust, since I had to do so many cleaning cycles.

Strip, sand, prep, and acid etch the exterior of the tank at the same time you prep the interior. Its just easier and you don't want to uncover pinholes AFTER the liner has been applied. **You stand a better**

chance of finding and fixing major issues by doing the exterior prep at the same time as the interior prep.

Final prep

- Last call: inspect the tank with a light. Did you really remove all those varnish puddles? If not, the liner will scale off of them and ruin your work.
- Clear all your lines again, to make sure they haven't been clogged with loosened material. Do a final prep rinse with your thinner of choice. Use a heat gun or other heater on super low to completely dry the tank for several hours, especially the seams, lines, and other baffles where water collects.

POR 15 Fuel Liner Application:

- Just follow the directions of the kit for the final marine clean, metal prep, and liner. By the time you reach the point of even opening the kit, you should be exhausted from prep work—congrats, that means you did the bare minimum required! Haha, 'prep' work—so simple, right?
- Ten or fifteen minutes of rolling the liner inside the tank is plenty for the purposes of lining a tank. There's no need to let it thicken before draining the excess. In fact, sooner is better since tank never drain easily, meaning there will always be excess liner in the tank to build the coating up.
- **Clear your lines periodically**: Use very low pressure air or aerosol duster to periodically clear any lines that might have been filled with liner, even partially. Use only very low pressure, to avoid spreading/removing the material from where the line points inside the tank.
- Continually roll the tank along every axis, letting it rest for five minutes in between. You do this for about three hours. The more frequently you roll the tank, the better the results.
- If needed, route very low pressure air through the tank or use a fan to speed up drying.

POR15 Exterior Coat

- If not already prepped, strip, sand, and etch the exterior of the tank. Apply POR15 rust coating or your coating of choice. Use plenty of protective materials and good gloves, since POR15 will stain your skin badly if you don't.
- **Experiment with POR15 TopCoat before applying it**. This is based on my own mistake, since I thought TopCoat would be virtually the same coating as regular POR15. However TopCoat is VERY thick, and overall very different from normal POR15 rust coat in terms of its far greater thickness and flow characteristics. It still flows very well, but the difference in thickness is astonishing. That's why you should also get the POR15 thinner. And even with the thinner, you'll want to experiment with that too, since it may increase running/sagging.

Congratulations, you are one of the 1-2 people who will read this far. Restoring an old fuel is a right of passage for those of us dumb enough to get into car restoration, a.k.a. 'labor underestimation'. Be proud of your work, even the flaws. While the rest of the society goes into a Chernobyl-like social meltdown of meaningless internet feuds and leadership-by-losers, you've made something solid that will outlast. Cheers!