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Making Pitch Glue

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Making Pitch Glue

Melting a lump of pitch over a Dakota Fire Hole.

Also shown are dry moose droppings and charcoal from a camp fire, which will be added once the pitch has melted.

Note the firesteel rod - the surest way to start fires in the wilderness is through the use of a good [firesteel](#)

The utilization of available resources to achieve desired ends is an important aspect of wilderness survival expertise. For example, if you are hungry you can easily [make a fish trap](#) using discarded plastic bottles and a little ingenuity. If you need to sleep but it's too cold for the gear you have available you make a [firebed](#) and stay warm all night.

But what if you need glue? There are many wilderness survival applications where glue would come in handy for securing objects together. For example,

- Fletching arrows
- Making bark containers
- Temporary equipment fixes

There are a number of ways to make glue in the wilderness but if you are in an area where conifers grow, otherwise known as "evergreens" or often erroneously collectively identified as "pine trees" (not all conifers are pines but all pines are conifers), you are fortunate. Simple and very effective glue can be made using pitch (also known as "resin") from coniferous trees.

One trait of conifers is that they exude a sticky sap or "pitch" from injuries to their bark. While traveling through the forest you will occasionally notice gobs of this substance accumulated on the trunk of a conifer.

Insects and other debris are often embedded in the sticky mass. In addition to physically stopping invaders from penetrating into the wound of the tree, the pitch conifers exude from wounds contains compounds that prevent microorganisms from colonizing. This property of pitch can be used on your wounds too, as mentioned in the Survival Topic on [Balsam Fir Pitch](#).



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Pitch: natures Glue

Wilderness survivors consider pitch the super glue of the forest and for good reason. This natural epoxy has glued together and sealed a wide variety of objects throughout the centuries including arrow heads and fletching as well as birch bark canoes and shelter covers.

The technology may be old but the applications are not. If you need glue in the wilderness, pitch from conifer trees is the starting point.

Pitch Glue Ingredients

There are many recipes for making glue from pitch. Tallow, wood ash, bees wax, even sulphur and iron filings are sometimes used. The recipe I am using today requires the following materials that you can find in the wilderness:

- lumps of pitch from a coniferous tree
- charcoal from a campfire
- dry shredded plant matter

Pitch

Pitch for glue making can be gathered from a variety of coniferous species. In my area these include white pine, several species of spruce, and balsam fir. Pitch from each species varies in its consistency and properties so some experimentation will be required to get the formula right for making glue with your particular ingredients.

In the picture you can see I have found a glob of sticky pitch oozing from a wound on a white pine (pinus strobus) tree. At the site of the wound the pitch globule is several inches in length, about an inch wide, and an inch or so deep. This particular pitch is very sticky and quite runny since it is fresh and hasn't yet hardened. The white areas are where thin veins of pitch have run down the bark due to the force of gravity.



Pine Pitch

A lump of pitch oozing from a wound on a white pine tree.



As you travel in the wilderness it is often a good idea to gather for future use chunks of pitch that have dried and hardened. Pitch in this form is easier to store and transport without sticking to everything it touches.

Charcoal

Charcoal has a variety of [wilderness survival](#) uses such as marking objects, camouflage paint, water purification, medicine, and glue making. A product of the incomplete burning of wood, you can easily obtain pieces of dry charcoal from an extinguished campfire.

Dry Plant Fiber

Glue will often work best if it has a binding agent. Fibrous plant material works very well for this purpose but has to be ground into fine particles to make the best glue.

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Charcoal

Charcoal for making pitch glue can be obtained from an extinguished campfire.

Herbivorous animal dung: I am always an advocate of letting nature do most of the work. In a wilderness survival situation any energy you expend is energy that must somehow be made up for. The best wilderness survivors

take the lazy mans way of doing everything as a viable survival strategy and this includes the making of glue.

Rather than spend time and energy collecting and grinding into small pieces dry grasses and leaves for use as a binding agent in glue making, you can let the local moose, deer, or rabbits do the work for you. These animals are herbivores, which means they do not eat meat (usually) but only plant matter.

Because leaves, buds, and grass are difficult to digest, herbivores typically do a good job of grinding up plant fibers into very small pieces as they eat them. After digestion, this finely ground plant matter is then excreted from their bodies as scat in pellet form.

Scat from herbivores is typically not the same noxious stuff created by meat eating animals. When you look closely at herbivore scat you will see that it basically consists of fine plant fibers, the remains of what is left behind after the digestion process. In fact Native Americans of this area sometimes used rabbit droppings as a stew thickener. This fibrous material is just what we are looking for in our search for a binder in glue making.

In the picture you can see a pile of [moose](#) droppings lying on the forest floor among the dead dry leaves from the last Fall season. While I could grind up these leaves for use in making glue, it would be a waste of time and energy since the moose has already done much of the work for me. The animal has even been so kind as to bundle the product into easy to gather and transport pellets.



Moose Droppings

You can add a binding agent to the pitch glue. Dry, shredded plant fibers work well for this purpose.

Let nature do most of the the work for you - use scat from plant-eating animals such as rabbit, deer, and moose

After harvesting these moose droppings I let them dry for several days in the summer sun before using them to make glue.

Grind the Ingredients

In the picture I am using a flat rock as a base and a rounded rock as a pestle to grind the charcoal and plant material in the moose droppings into as fine a powder as possible. The finer the better so it is worth expending a little extra time and effort in the process.

Melt the Pitch

Using a Dakota fire hole because of its great efficiency, I then carefully melt the pitch. I highly recommend Dakota fire holes because they produce more heat, with better control and less smoke while using less wood. They also have a smaller imprint on the environment; a winning combination when it comes to wilderness survival or simply everyday camping.

In this picture you can see the [Dakota fire hole](#) in action being used to melt pitch in the glue making process. The pan is placed on top of several green sticks. In the middle left of the picture are the ground charcoal and moose droppings. Besides these are a [firesteel](#) used



Grind Pitch Glue Ingredients

Grind the charcoal and binding agent, in this case dry moose scat, as finely as possible.

Note how the moose droppings are composed entirely of fibrous plant material and are of a different composition than the scat of predators and scavengers.

to start the fire. Firesteels are superior fire making gear compared to matches or lighters; I highly recommend you firesteels them in your outdoor gear and bug out bags.

This particular piece of pitch was taken from a white spruce tree some months earlier and is hard and dry, perfect for long term storage. The pitch is melting in an old aluminum pot that has become blackened from use over open fires. Without a pot, you can use a suitably shaped rock or create one by grinding a small hollow into a flat piece stone.

You must be very careful while melting pitch because it is exceedingly flammable. If flames get near melted pitch even the fumes can catch

fire so that your entire pot will go up in flames. This has happened to me on more than on occasion, which is a reason this pot is so black!

I prefer to let the fire in the Dakota fire hole reduce to a bed of hot coals over which I cook the pitch glue recipe. This helps reduce the potential for a conflagration in the pitch glue cooking pot!

Mix the Glue Ingredients

Once the pitch has melted, carefully stir in the charcoal and ground plant material. A good starting ratio I find is about

- 5 Parts melted pitch
- 1 Part powdered charcoal
- 1 Part ground plant material

As you stir the ingredients the glue becomes a thick, black, tar-like substance that is very sticky. You will find that the glue mixture stiffens very quickly upon removal from the heat source but becomes soft again as heat is applied.

Using Pitch Glue

This pitch glue can be gathered up into a ball while it is warm and malleable. Whenever some is needed simply heat up a small bit and apply it to the surfaces you want glued together. For best results, heat these surfaces just prior to applying the glue so that the glue does not harden too quickly.

Other Pitch Glue Recipes

I have seen other ingredients used in the making of pitch glue including various



Mix Pitch Glue Ingredients

When the pitch comes to a boil add the powdered charcoal and moose dropping binder. Mix well.

combinations and ratios of

- pitch
- charcoal
- animal dung
- ground plant matter
- wood ashes
- sulphur
- iron filings
- hair or fur
- bees wax
- animal fats or tallow



Pitch Glue

A fresh batch of pitch glue ready for use.

This thick tar-like substance can be used to glue together a variety of objects useful for wilderness survival.

Depending upon your specific ingredients and preferences these materials can be used to make a very fine glue that is useful for a variety of purposes. The main ingredient, pitch from trees, remains but the recipe can be tweaked using a number of naturally occurring substances.

In future Survival Topics we will cover some of these other recipes for glue as well as put our pitch based glue to good use on a number of interesting projects.

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O. Smith
Washington

Fantastic article! I had always wondered how the first forms of glue were concocted. This is very interesting and seems pretty simple to make. I am going to give this a try sometime. Thanks for the great read.

backwoods bob
backwoods missouri

Great info. Did not know i could do that. I will definetly write this in my little green book of camp/survival secrets. I find it easier to have a small waterproof notepad i can put tips and tricks so when im in that situation i can quickly look them up according to basic alphabetizing.

I appreciate all the great survival info Ron.

DanT
Canada

Another good article Ron. Have you thought about writing a book?

Barney
Canada

To patch your canoe or kayak etc., you can use the glue without plant material using a piece of cloth. The back pocket off a pair of pants works very well. It is like a bush version of fibre glass. Put the piece of cloth on the hole and put the glue on it, impregnating it. You can also immerse the cloth in the glue and then apply. Make sure it is good and hot when you apply it. If the boat has a hole right through, you can repeat on the inside. Often for a crack, a patch on the outside is enough.

Brian
Deployed: Kuwait

Great article! I can't wait to get back to the states to try this one out! Thanks for a great read!

John Oracle
Ontario

I was familiar with pitch glues, but I needed a resource I could share with some friends, who are starting almost at square one, so far as survival and primitive skills go.

steven
south carolina

Can you use other poo because I doubt I can find moose poo in south carolina?

Survival Topics - yes, of course. Try herbivore scat such as that from deer and rabbit.

stormy
NC

In the picture you set the pot on 4 sticks over the fire. I've never done that, how long do the sticks last before they burn up and cave in?

Survival Topics - if you use green sticks from a live tree they can take quite some time before they dry out from the fire and burn through.

Chappy
NE Texas

Pitch glue also can be used as a emergency tooth repair or filling material.

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