

## Chapter 2: Pyrotechnic Supplies You'll Need for the Turbo Pyro Projects

Now that you've decided to tackle Turbo Pyro, here is a list of the special pyrotechnic supplies you'll need to make these projects. You can't find these supplies at Wal-Mart. And most of them are not available locally at all.

So, you will almost certainly have to order them from a reputable pyrotechnic supply company. You will probably find the most economic approach will be a complete kit containing all the supplies listed below from [www.Skylighter.com](http://www.Skylighter.com).

But wherever you get your supplies, make it your first order of business to order them right away. They can take one or two weeks to arrive, so you might want to order right now.

You'll also need some fairly common household supplies and tools. There's a complete list of those items in the next chapter.

The list below contains all the pyrotechnic chemicals, tools, and supplies used in the various projects in this book.

The total quantity you'll need of each item is shown. And there is a link to that product if you want to buy it from Skylighter.

Keep in mind that if you need all of the items below, it's more economical to buy them all together in the kit, than to purchase each one individually.

The price of the Turbo Pyro Kit is a fraction of what the individual items would cost if you bought them separately from anywhere.

### Pyro Tools & Supplies Needed for Turbo Pyro Projects

The following list of tools and supplies are provided in the Turbo Pyro Kit that you can buy from Skylighter. This is all of the special pyro supplies, tools, chemicals, fuse, tubes, etc. in the exact sizes shown in the project instructions that are needed to make all of the projects in this book.

#### Digital Scale

The scale weighs up to 333 grams (about 8 ounces, 1/2 lb.), has 1/10 gram accuracy is Backlit LCD Display, and weighs in grams (g), ounces (oz), or penny weight (dwt). It also has a tare function. This scale comes with batteries already installed 3-1/2" x 2-3/8" x 5/8" thick. [Skylighter # TL5021](#). Quantity needed—1

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It is a good idea to keep a known weight in your shop to check the accuracy of your scale each time you use it. The batteries can get low, or the scale can start to fail, and the result will be inaccurate weighing. Five US quarters typically weigh 1.00 ounce (28.4 grams), and nickels weigh 5 grams each typically.

Keep a few quarters or nickels, of known weight, in a plastic baggie so they stay clean. Check the accuracy of your scale each time you use it. That simple precaution can prevent a lot of weighing mistakes.



### Checking Scale Accuracy

When you are weighing chemicals, place the mixing tub, into which you'll be putting your weighed chemicals, next to your scale.

Place an empty paper cup on your scale. Push the scale's "tare" button to set the scale to zero with the weighing cup on it.

Put the desired amount of an individual chemical in the cup on the scale, and then dump that chemical into your mixing tub.

Repeat that with each individual chemical, until all the individual chemicals have been weighed and are in your tub.

Now put another container, large enough to hold the weighed mixture, on your scale and "tare" the scale to zero again.

Pour your chemical mixture into the empty container on the scale and verify that the mixture weighs what your total batch was supposed to weigh.

That verifies that you have not forgotten a chemical, and you have weighed each individual component accurately.

You are now ready to proceed with the other steps in mixing your composition.



Note: A digital scale may continue to “tare” after the button has been pushed, and while small quantities of chemical are added to the cup. You can add a gram or two of chemical to the cup and the scale is still displaying 0.00. It is best when weighing very small quantities of chemicals, to tare the scale to zero with the cup on it, remove the cup and add a bit of the chemical to the cup while it is removed from the scale. Then put the cup holding the bit of chemical back on the scale and adjust the amount of chemical as necessary.

### Fuses

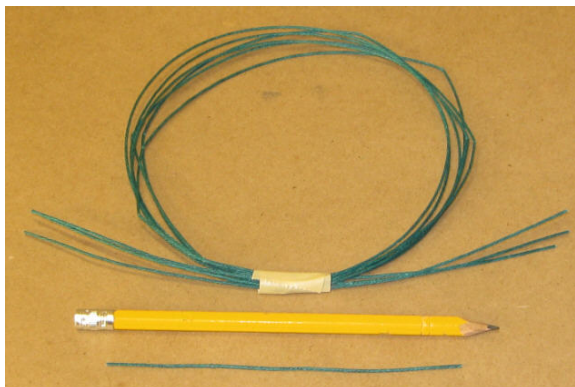
Chinese Visco ignition fuse, 3/32-inch diameter. Green fuse, burns at about 1.7 seconds per inch. [Skylighter #GN1005](#). Quantity needed—50 feet



Thin Chinese Visco ignition fuse, 1mm (3/64-inch) diameter. Green fuse, burns at about 5 seconds per inch. [Skylighter #GN1010](#). Quantity needed—3 feet

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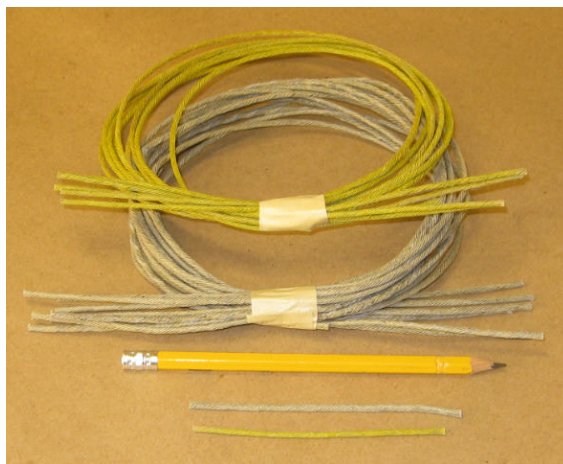
FAST BURNING Chinese Visco ignition fuse, yellow, 3/32-inch diameter. Burns at about  $\frac{1}{4}$  second per inch (4 inches per second). Colored yellow so you do not use it in place of other, slower burning fuses. [Skylighter #GN1100](#). Quantity needed—25 feet



Super-Fast Paper Fuse. Three thin strands of blackmatch, wrapped in tissue paper, 1/8-inch diameter paper fuse (1/16-inch diameter blackmatch strands). Paper-wrapped fuse burns at about 1 second per foot. [Skylighter #GN1205](#). Quantity needed—10 feet of paper-wrapped fuse (yields 30 feet of thin blackmatch)



Flying Fish Fuse—Various Colors and Effects with varying diameters and burns at about 1.75-2.0 seconds per inch. [Skylighter #'s GN1020 – GN1047](#). Quantity needed is 16 feet.



### Chemicals

- Potassium Nitrate (saltpeter), white crystals. [Skylighter #CH5302](#). Quantity needed—2 pounds
- Charcoal, airfloat. Extremely fine, grayish-black powder. [Skylighter #CH8068](#). Quantity needed—8 ounces
- Charcoal, 80 mesh. [Skylighter #CH8066](#). Quantity needed—4 ounces
- Sulfur, yellow powder. [Skylighter #CH8315](#). Quantity needed—6 ounces

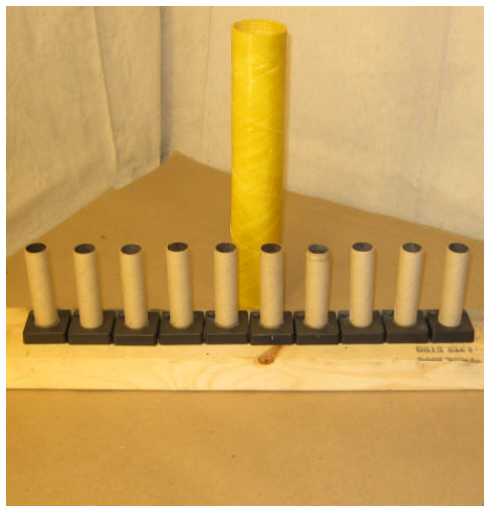
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- Dextrin, light yellow powder. [Skylighter #CH8107](#). Quantity needed—2 ounces
- Clay, bentonite, very fine tan powder. [Skylighter #CH8078](#). Quantity needed—1 pound
- FerroTitanium, 40-325 mesh. 60:40 iron to titanium ratio. Gray metal alloy powder. [Skylighter #CH8112](#). Quantity needed—6 ounces

### Mortars

- Festival-Ball-Shell Mortar, 1 3/4 - 1 7/8-inch ID, fiberglass or HDPE plastic with plug. [Various Skylighter product numbers](#). Quantity needed—1
- 3/4-Inch ID Mortars. A cardboard tube and a plastic base. [Skylighter #TU2053](#) (tube) [#PL3001](#) (base). Quantity needed—10 sets



### Aerial Shell Casings

Plastic Shell Casing, 1 5/8-Inch OD, #5 Shell. Spherical, two halves, one with fuse hole for Visco fuse. [Skylighter #PL2030](#). Quantity needed—5 sets





## Paper Tubes

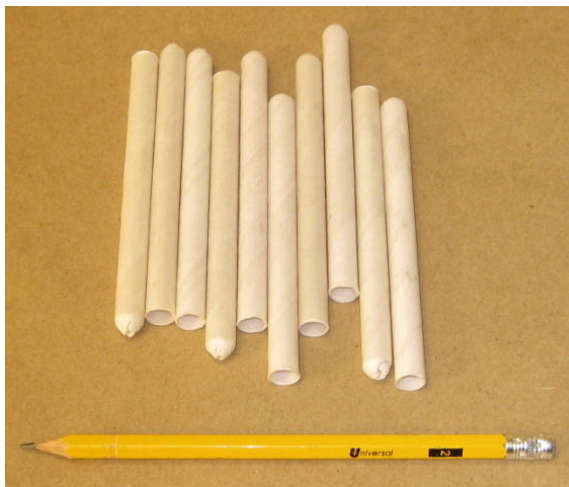
Paper tubes, 3/8-Inch ID, 3.5-Inch Long. 1/8-inch wall thickness, parallel wound tubes. [Skylighter #TU1008](#). Quantity needed—85



Paper tubes, 5/16-Inch ID, 4-Inch Long. 1/64-inch wall thickness, spiral wound lance tubes. [Skylighter # TU2020](#). Quantity needed—15

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### Tools

Combo-Tool set for 3/8-Inch Devices. Includes star pump sleeve, ramming base, 3 spindles, hollow ramming drift, solid drift, ram-through funnel, drill-guide, and drill bit. [Skylighter #TL1402](#). Quantity needed—1 set





You can order everything in the list above from Skylighter.com.

Order the [Turbo Supplies Kit](#) containing everything.

Go [here to check out the Turbo Supplies Kit](#). The cost is 20-25% of what the items above would cost if you purchased them all individually.



# Chapter 3: Everyday Supplies You'll Need for Turbo Pyro

## Goin' Shopping

One of the very real changes you will experience when you take up the art of fireworking is the new outlook you'll have when you go out shopping.

Walk into a grocery store, a department store like Wal-Mart, or a hardware store, and suddenly you'll see things with new eyes. "Hey, I could use that colander for screening chemicals," you'll think to yourself. Or those paper plates will have a new appeal.

You'll be looking at the world around you with new eyes, pondering creative ways to use products on the shelves, or trash in a dumpster.

The following is a list of the miscellaneous household items, which will be used in the Turbo Pyro projects.

You will already have many of these items in your home or out in your workshop. You'll come up with creative substitutes for some of these supplies, or alternative products, which will work just as well.

But, if you have something like each of these items on hand before you embark on the projects, you'll be prepared to get to work and stay creatively working without having to run out to the store to get something else.

These supplies are broken down into categories:

- Kitchenware
- Office/Shipping supplies
- Craft supplies
- Sporting Goods products
- Safety Gear
- Tools
- Hardware
- Miscellaneous household supplies
- Health and beauty supplies

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- Miscellaneous supplies

Knowing which category a particular item is found in will help you identify which department of a store such as Wal-Mart in which to shop for the item.

The particular use of each item will be pointed out in each project in which it is used.

### Kitchenware

#### 20-Mesh and 40-Mesh Colander Screens



These are colander kitchen strainers. On the left is a 40-mesh one, and the one on the right is 20-mesh. You'll need one of each mesh size.

### How can you tell what mesh they are?

Hold a tape measure against the wire screen. The distance between wires in a 20-mesh screen is just a little smaller than one of the 1/16-inch marks. There are 20 wires per inch, so the distance between wires is 1/20th of an inch, which is a bit smaller than 1/16-inch.

With the 40-mesh colander, the distance between wires is 1/40th of an inch since there are 40 wires per inch. That distance of 1/40th of an inch is just a bit smaller than one of the 1/32-inch marks on the tape measure. Buy one colander of each mesh size.

When you are purchasing your colanders, make sure to get relatively good quality ones. Make sure the screen does not push easily out of the framed rim because you will be pushing chemicals and mixtures through the screen.

## Blade-Type Coffee Mill



## Cookie Sheets



You'll need at least two cookie sheets, either permanent or disposable ones. Permanent ones are a good pyro investment since they get used in a lot of projects.

## A Set of Funnels



These flexible silicone funnels are ideal.

## Plastic Mixing/Storage Containers and Lids



It's a good idea to have at least 6 of these.



### A Set of Measuring Spoons

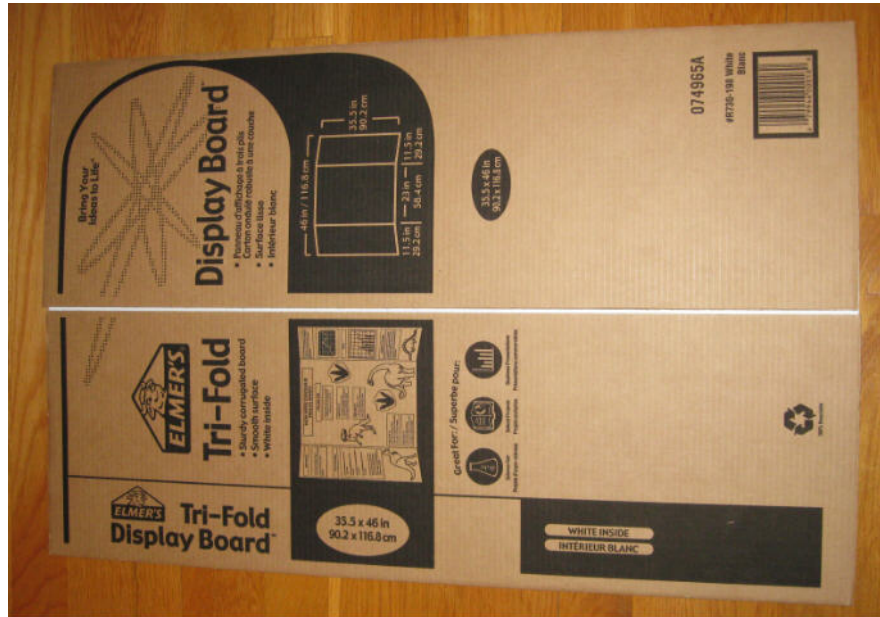


### A Bag of 12-Inch Bamboo Skewers



1/8th-inch diameter, or slightly larger, are ideal.

## Large Tri-Fold Display Board



Or some other source for pieces of corrugated cardboard at least 18-inches square.

## Office/Shipping Supplies

- Hot-glue gun and hot-glue
- 2-inch wide strapping tape “for heavy jobs”
- 1-inch wide masking tape (with optional dispenser)
- Elmer’s glue
- 2 tubes of super-glue
- Rubber bands
- Thin cotton string
- Thumbtack



- One package of thin tissue paper
- One roll of brown kraft paper
- A pencil
- A black Sharpie marker
- Optional Silver sharpie marker



## Craft Supplies

- Craft sticks (like Popsicle sticks)
- Assorted Wood Dowels (3/16-inch, 1/4-inch, 5/16-inch, 3/8-inch)
- Cloth sewing tape measure (optional, but pretty handy)

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### Sporting Goods

- Goex FFg sporting-grade black powder (Graff and Sons online, [www.grafs.com](http://www.grafs.com); or some BassPro shops)
- Hodgdon 777 black-powder substitute (optional)



Only the Goex real black powder will work in both the Flying-Fish-Fuse Mines, and in the Festival-Ball Aerial Shells. The 777 black-powder substitute can be used in the Mines project, but not in the aerial shells.

777 powder can be found in Wal-Mart gun departments and gun stores. Goex black powder is still available in some gun stores and sporting goods stores like Bass Pro Shops. It can also be ordered online, and it will be shipped HazMat and have to be signed for by an adult.

## Safety Gear

- Bucket of water
- Safety glasses (or face shield)
- Rubber gloves
- Dust masks (or higher quality respirator)



## Tools

- Hand-saw and miter-box
- Cordless drill and drill bits (1/16, 3/32, 1/8, 3/16-inch)
- Mallet (non-metal/non-marring head, rawhide mallet or plastic dead blow mallet are best, rubber mallet is OK for these small projects but not very functional for larger devices)

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- Pump spray bottle
- Propane torch (optional, but handy for lighting fireworks)
- Tape measure
- Flashlight
- Razor-anvil cutter (Sears Handi-Cut or similar; often found in garden centers)
- 1-inch wide paint brush
- Sharp awl
- Single-edge razor blades
- Scissors





## Hardware

- Black spray paint (optional but nice)
- Duct tape
- PVC plumbing pipe cement
- 8-inch, thin, cable ties (2 packages of 20)
- 1- inch, 1.25-inch, or 1.5-inch drywall screws (10-20)
- #10 flat washers (2)
- 3/8-inch X 1.5-inch fender washers (2)
- 3-inch drywall screws (2)



## Miscellaneous Household Supplies

- 1 gallon of distilled water
- Paper towels
- Thin plastic sandwich baggies
- 7 to 8 ounce sized paper cups
- Round toothpicks
- Heavy, absorbent paper plates



## Health and Beauty Supplies

- Coarse-toothed comb
- Q-tips



## **Miscellaneous Supplies**

- Two 2-foot stakes, or one 2-foot stake and a fence post
- 8-foot piece of lumber to support wheel
- 6X6-inch X 30-inches ramming post (some folks cut a section of tree-log)
- Two, 5-6-inch bottom diameter, flat-bottom tubs
- Piece of scrap plywood, approximately 2X2-foot
- Two pieces of scrap 2X4 or 1X4 lumber



There you have it, your detailed shopping list. You can get creative and find some substitutions for these items. But never forget that there's nothing like having the right tool or material at the right time to make your projects go more smoothly.

Now, get shoppin'. You're gonna need all of this stuff for the following projects.